



CURRICULUM DOCUMENTS 2023-2028
PROGRAM : INDUSTRIAL DESIGN
DEPARTMENT : INDUSTRIAL DESIGN

FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS
INSTITUT TEKNOLOGI SEPULUH NOPEMBER
2022



DOCUMENT

Curriculum Development in Higher Education

Industrial Design Study Program, FDKBD ITS

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INSTITUT TEKNOLOGI SEPULUH NOPEMBER, 2023



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FOREWORD

Praise and gratitude be to the presence of Allah SWT, the Most Gracious and Most Merciful, for His grace and guidance. The Curriculum Team of the Product Design Department, Faculty of Creative Design and Digital Business (FDKDB), Institut Teknologi Sepuluh Nopember (ITS), offers our thanks for completing the new curriculum document for 2023-2028. This curriculum document encompasses a systematic process for developing a new curriculum that is aligned with current conditions, including: Basis for Curriculum Development (University Values, Philosophical Foundations, Historical Foundations, Sociological Foundations, Psychological Foundations, Legal Foundations), Vision, Mission, and Educational Objectives (Faculty Vision, Mission, and Objectives, Department, Educational Study Program), Curriculum Evaluation and Tracer Study (Curriculum Evaluation, Tracer Study), Graduate Profile, Educational Objectives of the Study Program, and Formulation of Graduate Learning Outcomes, Determination of Study Material, Formation of Courses and Determination of Credit Hours (sks), Organization of Program Courses, Distribution of Courses Each Semester, Learning through MBKM (MBKM Activities, MBKM Curriculum Structure, CPL MBKM), Semester Learning Plan, and Learning Management.

The Department acknowledges that this curriculum document was made possible with the assistance of various individuals and groups. Therefore, on this occasion, we would like to extend our utmost gratitude to:

1. The Head of ITS Curriculum and its Support Team.
2. The Head of Creative Design and Digital Business Faculty Curriculum and its Support Team.
3. The Head of the Industrial Design Department Curriculum and its Support Team..
4. Everyone who contributed to this report's completion, even though we cannot mention each individually.

In conclusion, may this curriculum document meet the required criteria and serve as a valuable learning resource for Industrial Design students, producing graduates per the expected Graduate Learning Outcomes and capable of making a broad contribution to society. Amen YRA.

Head of Department

Bambang Tristiyono, S.T., M.Si.



STUDY PROGRAM IDENTITY

No	Higher Education Name	INSTITUT TEKNOLOGI SEPULUH NOPEMBER
1	Faculty	Faculty of Creative Design and Digital Business
2	Department	Industrial Design
3	Study Program	Industrial Design
4	Accreditation Status	A
5	Number of Students	440
6	Number of Lecturers	15
7	Study Program Address	Gedung Desain Produk ITS Jl. Despro No.1 Kampus ITS Sukolilo Surabaya. 60111
8	Phone	+62315931147
9	Department Website	https://www.its.ac.id/despro/



1. Basics for Curriculum Development

1.1 University Value

The values instilled by ITS (Institut Teknologi Sepuluh Nopember) in its students and graduates, per ITS Statutes PP. Number 54 of 2015 are as follows: (1) Ethics and Integrity, (2) Creativity and Innovation, (3) Excellence, (4) Strong Leadership, (5) Synergy, and (6) Social Togetherness and Social Responsibility. These values are further related to ITS's vision of becoming a university with an international science and technology reputation, particularly those supporting industry and environmentally conscious maritime endeavors. The Industrial Design Department maximizes itself as a higher education institution in product design with an international reputation in the creative industry through the synergy of science, technology, and art for human well-being. This is achieved by emphasizing three core values: (1) Creativity, (2) Synergy, and (3) Experience. As a tangible embodiment of these ITS values, the curriculum developed in the field of education is expected to educate, develop the abilities of students, and produce graduates who: (1) Are devout to the One Almighty God; (2) Excel in science and technology; (3) Possess noble character and good morals; (4) Exhibit a noble and independent personality; (5) Are professional and ethical; (6) Are of integrity and high responsibility; and (7) Are capable of self-development and competing at both national and international levels.

1.2 Philosophical Foundations

A curriculum should ideally shape and guide students to master specific knowledge and skills while instilling noble character. It should enable them to contribute to upholding the national values, diversity, promoting the spirit of care for fellow citizens and humanity, and advancing social well-being with justice and the glory of Indonesia. The curriculum of the Product Design Department at ITS is developed in alignment with ITS's core values, grounded in a philosophical foundation that fosters the development of students into quality Indonesian individuals guided by Pancasila and the UUD 1945.



Based on this, the curriculum of the Product Design Department at ITS is anchored in the following:

a. Educational Goals

To become an industrial design higher education institution with an international reputation in the creative industry through the synergy of science, technology, and art for human well-being.

b. Discipline and Professionalism

Product Design is a field of professional knowledge and skills in functional product design, utilizing creativity and knowledge based on considerations of: (1) function; (2) aesthetics and beauty; (3) industrial and manufacturing principles; (4) user and market; (5) technology.

As a more profound philosophical foundation related to knowledge and professionalism, a product design graduate is directed to provide professional product design services, including a range of strategic problem-solving processes, which encourage innovation and novelty, building business success, and lead to improved quality of life through the creation of innovative products, systems, services, and experiences that provide benefits and advantages to consumers and the industry. It emphasizes creative, analytical, and systematic thinking, translating user needs, aesthetics, optimal function, use and selection of materials, production capabilities, technological development, and added value and impact analysis, both socially and economically. This is manifested but not limited to combinations of forms, materials, colors, flows, features, components, and others, both as a whole and modular, to be subsequently produced or replicated through automation or manual processes, and can be registered as Industrial Design Intellectual Property Rights.

c. Approach in Learning Methods

The characteristics of the learning process consist of interactive, holistic, integrative, scientific, contextual, thematic, effective, collaborative, and student-centered learning.



- 1) Interactive: It involves a two-way interaction between students and lecturers to achieve graduate learning outcomes.
- 2) Holistic: It encourages the formation of comprehensive and broad-minded thinking patterns by internalizing local and national excellence and wisdom.
- 3) Integrative: It is a holistic learning process throughout the study program, with an interdisciplinary and multidisciplinary approach to achieve graduate learning outcomes.
- 4) Scientific: It prioritizes a scientific approach to create an academic environment based on value systems, norms, and scientific principles while upholding religious and national values in achieving graduate learning outcomes.
- 5) Contextual: It adjusts to the demands of the ability to solve problems in its field of expertise to achieve graduate learning outcomes.
- 6) Thematic: It adapts to the scientific program's problems through a transdisciplinary approach to achieve graduate learning outcomes.
- 7) Effective: It emphasizes the internalization of materials correctly and effectively within an optimum timeframe to achieve graduate learning outcomes.
- 8) Collaborative: It involves interactions among individual learners to capitalize on attitudes, knowledge, and skills as an embodiment of graduate learning outcomes.
- 9) Student-Centered: It prioritizes the development of student creativity, capacity, personality, and needs, as well as encourages independence in seeking and finding knowledge in achieving graduate learning outcomes.

Each course may employ one or a combination of several learning methods. Learning methods for course implementation may include group discussions, simulations, case studies, collaborative learning, cooperative learning, project-based learning, problem-based learning, or other effective



learning methods that facilitate the achievement of graduate learning outcomes.

The learning method approach, as mentioned earlier, is implemented in the form of learning through:

- 1) Lectures;
- 2) Tutorials and Assignments;
- 3) Seminars;
- 4) Practical work, studio practice, laboratory-facilitated practice, and internships;
- 5) Research, interdisciplinary collaboration, research or knowledge development;
- 6) Student exchange programs;
- 7) Internships;
- 8) Entrepreneurship; and
- 9) Other forms of Community Service.

d. Approach in Assessment. Evaluation Strategy

The core of learning assessment is the activity of gathering all information related to the implementation of academic activities as an implementation of achieving the learning objectives. The assessment of activity implementation includes performance assessments, attitude assessments, written assessments (paper/pencil tests), studio project assessments, product work assessments, student work portfolio assessments, independent learning conversion assessments (MBKM conversion), and self-assessments.

1) Study Program - Level Assessment

- a) First-year students who will continue their studies to the bachelor's level must follow the specified requirements and minimum value limits agreed upon in ITS regulations.
- b) Before lectures start, classroom operational readiness, lecture documents, and lecture contracts are prepared and delivered to all students.



- c) For students participating in the MBKM program, their credits can be converted to courses according to ITS standard requirements and adapted to the Graduate Learning Outcomes with policies set by the department/study program.
 - d) At the end of their studies, final-year students must hold a design exhibition and publication as a manifestation of design research responsibilities. The assessment of works is carried out during the final assignment examination.
 - e) Performance assessment/practical work is conducted regularly with workplace practice partners.
 - f) The results of assessments are provided to students at the end of lectures and are communicated during regular evaluation meetings at the study program level.
- 2) Course - Level Assessment
- a) Quizzes or practical task assessments
 - b) Mid-term and final semester exam results
 - c) Conversion of MBKM activities
 - d) Final Design Project Task Assessment

Assessment of students learning process and outcomes involves:

- 1) Authentic Principles: Focusing on continuous learning processes and learning outcomes that reflect students' abilities during the learning process.
- 2) Objective Principles: Based on agreed-upon standards between lecturers and students and free from the subjectivity of the assessor and the assessed.
- 3) Accountable Principles: Carried out following clear procedures and criteria, agreed upon at the beginning of the course and understood by students.
- 4) Transparent Principles: Assessment procedures and results can be accessed by all stakeholders.



Assessment is carried out to measure the mastery of knowledge, general skills, and specific skills by choosing one or a combination of various assessment techniques and instruments.

1.3 Historical Foundations

The field of industrial design is expansive because industrial design is a discipline and expertise in the design of products that collaborates creativity and knowledge consisting of five core competencies, namely:

1. **Product Design:** Conducted through a studio-based learning system, which is a unit of design activities that gather various activities, ranging from theoretical studies, creative idea exploration, design concept formulation, drawing practice, product form and function experimentation, product model creation, as well as presentation and evaluation of the final design.
2. **Product Design Theory Study:** Comprehensive understanding of knowledge, theories, methodologies, history, product design discourse, material culture, and lifestyle studies as the basis for conducting research in industrial design.
3. **Product Technology Application:** Application of technological logic and multidisciplinary product design knowledge, including human factors, applied physics, material knowledge, production processes, and design systems.
4. **Digital modeling, prototyping, design protection, and technology, among others** – in the creative problem-solving process of design.
5. **Humanities Application:** The application of political-economic-social-cultural thinking to product user communities by utilizing humanities related to product design, such as design appreciation, perception psychology, aesthetic philosophy, lifestyle studies, marketing strategies, and design management.

The core knowledge and expertise in industrial design have been developed into a competency-based curriculum oriented towards Student-Centered Learning (SCL) in the 2014-2018 curriculum. This curriculum has been



continually improved in response to challenges related to collaboration, increased research, improved graduate quality, and competition in the field of product design in Indonesia. Subsequently, in the 2018-2023 curriculum, the product design curriculum was refined with the National Qualifications Framework of Indonesia (KKNI) and Lab-Based Education (LBE).

SiIn line with the development of knowledge and the demand for interdisciplinary collaboration, including the implementation of Independent Campus Learning (Merdeka Belajar Kampus Merdeka), the curriculum for 2023-2028 further refines KKNI level 6, Lab-Based Education (LBE), Independent Campus Learning (MBKM), and Collaborative Learning, focusing on skills in three main aspects:

1. Cognitive skills

- a. *Processing and cognitive strategies*
 - ✓ *Critical thinking*
 - ✓ *Problem solving*
 - ✓ *Analysis*
 - ✓ *Logical Reasoning*
 - ✓ *Interpretation*
 - ✓ *Decision Making*
 - ✓ *Executive Functioning*
- b. *Knowledge*
 - ✓ *Literation and communication skills*
 - ✓ *Active listening skills*
 - ✓ *Knowledge of the disciplines*
 - ✓ *Ability to use evidence and assess based on information*
 - ✓ *Digital literacy*
- c. *Creativity*
 - ✓ *Creativity*
 - ✓ *Innovation*

2. Interpersonal skills

- a. *Collaboration group skills*
 - ✓ *Communication*
 - ✓ *Collaboration*
 - ✓ *Team work*
 - ✓ *Cooperation*
 - ✓ *Coordination*
 - ✓ *Empathy, Perspective taking*
 - ✓ *Trust*
 - ✓ *Service orientation*
 - ✓ *Conflict resolution*



- ✓ *Negotiation*
- b. *Leadership*
 - ✓ *Leadership*
 - ✓ *Responsibility*
 - ✓ *Assetive communication*
 - ✓ *Self persentation*
 - ✓ *Social influence*
- 3. Intrapersonal skills**
 - a. *Intellectual opennes*
 - ✓ *Flexibility*
 - ✓ *Adaptability*
 - ✓ *Artistic and cultural appreciation*
 - ✓ *Personal adn social responsibility*
 - ✓ *Intercultural competency*
 - ✓ *Appreciation for diversity*
 - ✓ *Capacity for lifelong learning*
 - ✓ *Intellectual interest and curiosity*
 - b. *Work ethics, Responsibility*
 - ✓ *Iniciative*
 - ✓ *Self direction*
 - ✓ *Responsibility*
 - ✓ *Perseverance*
 - ✓ *Productivity*
 - ✓ *Persistence*
 - ✓ *Self regulation*
 - ✓ *Meta-cognitive skills, anticipate future, reflective skills*
 - ✓ *Profesionalism*
 - ✓ *Ethics*
 - ✓ *Integrity*
 - ✓ *Citizenships*
 - ✓ *Work orientation*
 - c. *Self efficacy*
 - ✓ *Self-regulation (self monitoring and self a sssessment)*
 - ✓ *Physical and mental health*

1.4 Sociological Foundations (optional)

The curriculum must be capable of preserving culture from one generation to the next amidst the continuous influence of globalization that erodes the existence of local cultures. In this regard, Ascher and Heffron (2010) state that, under certain conditions, globalization has a negative impact on cultural practices and individual beliefs, thus weakening the dignity and honor of



humanity. Furthermore, it is explained that there is a need to recognize aspects of local culture to shield oneself from the influence of globalization. This is in line with the opinion of Plafreyman (2007), who states that cultural issues have become a hot topic among the academic community in various countries, where universities are expected to balance the interests of advancing the learning process oriented towards the progress of knowledge and technology with the cultural diversity of learners, which can result in learning outcomes that enable an understanding of cultural diversity in society, leading to tolerance and mutual understanding in the face of diversity. The curriculum should allow learners to break free from the confines of their own cultural boundaries (encapsulation) that are rigid and unaware of their cultural limitations. In the current context, learners are expected to have cultural agility, which is considered a mega-competence that must be possessed by future professionals in the 21st century, with a minimum mastery of three competencies: cultural minimization (the ability to control oneself and adapt to international standards when working on a global level), cultural adaptation, and cultural integration (Caliguri, 2012).

Based on the above, the curriculum of the ITS Department of Product Design is a curriculum that can facilitate students to learn following their time; a curriculum that can pass on the cultural values, ethics, and morals of the Indonesian nation; a curriculum that directs students to synergize, be creative, and transform themselves in an era where they are learning and expressing themselves; a curriculum that prepares students to live better and adapt quickly in the 21st century, actively participate in the era of Industry 4.0, respond in Industry 5.0, explore innovation, and read its development trends.

1.5 Psychological Foundations (optional)

Education is always related to human behavior. In education, there is an interaction between learners and their environment, both physically and socially. Education aims to change learners' behavior towards maturity,



encompassing physical, mental, emotional, moral, intellectual, and social aspects.

The psychological foundations in the Department of Industrial Design at ITS provide a basis for curriculum development, enabling the curriculum to stimulate students' curiosity and motivate lifelong learning continuously. The curriculum facilitates student learning, allowing them to realize their roles and functions in their environment. This curriculum encourages critical thinking, high-level thinking, and higher-order reasoning. It optimizes the development of students' potential to become desired individuals. It facilitates students' learning to become well-rounded individuals who are free, responsible, confident, moral, capable of collaboration, tolerant, adaptable, and well-educated, fully committed to contributing to the realization of the ideals outlined in the preamble to the UUD 1945.

1.6 Legal Foundations

1. Law of the Republic of Indonesia Number 14 of 2005 concerning Teachers and Lecturers (Lembaran Negara Republik Indonesia Tahun 2005 Nomor 157, Tambahan Lembaran Negara Republik Indonesia Nomor 4586).
2. Law of the Republic of Indonesia Number 12 of 2012 concerning Higher Education (Lembaran Negara Republik Indonesia Tahun 2012 Nomor 158, Tambahan Lembaran Negara Republik Indonesia Nomor 5336).
3. Presidential Regulation of the Republic of Indonesia Number 8 of 2012 concerning the Indonesian National Qualifications Framework (Kerangka Kualifikasi Nasional Indonesia (KKNI)).
4. Government Regulation Number 4 of 2014 concerning the Implementation of Higher Education and Management of Higher Education.
5. Minister of Education and Culture Regulation of the Republic of Indonesia Number 73 of 2013 concerning the Implementation of KKNI in the Field of Higher Education.



6. Minister of Research, Technology, and Higher Education Regulation of the Republic of Indonesia Number 62 of 2016 concerning the Quality Assurance System for Higher Education.
7. Minister of State Apparatus Empowerment and Bureaucratic Reform Regulation Number 17 of 2012 concerning the Functional Position of Lecturers and Their Credit Points.
8. Minister of Research, Technology, and Higher Education Regulation Number 59 of 2018 concerning Degrees, Competence Certificates, Professional Certificates, Titles, and the Procedures for Writing Titles in Higher Education.
9. Minister of Research, Technology, and Higher Education Decree Number 123 of 2019 concerning Internships and the Recognition of Industrial Semester Credit Units for Bachelor and Applied Bachelor Programs.
10. Minister of Education and Culture Regulation of the Republic of Indonesia Number 3 of 2020 concerning National Higher Education Standards.
11. Minister of Education and Culture Regulation of the Republic of Indonesia Number 7 of 2020 concerning the Establishment, Changes, Dissolution of State Higher Education Institutions, and the Establishment, Changes, and Revocation of Licenses for Private Higher Education Institutions.
12. Minister of Education and Culture Regulation of the Republic of Indonesia Number 22 of 2020 concerning the Strategic Plan of the Ministry of Education and Culture.
13. National Accreditation Board for Higher Education Regulation Number 12 of 2021 concerning Accreditation Instruments for Academic and Vocational Education Programs in the Field of Engineering (IAPS-PAV Teknik)
14. Board of Trustees of the Institut Teknologi Sepuluh Nopember Decision Number 02 of 2017 concerning the Approval of the Development Master Plan for the Institut Teknologi Sepuluh Nopember for the Year 2015-2040.



15. Board of Trustees of the Institut Teknologi Sepuluh Nopember Decision Number 04 of 2021 concerning the Approval of the Institut Teknologi Sepuluh Nopember's Strategic Plan for the Year 2021-2025.
16. Institut Teknologi Sepuluh Nopember Rector Regulation Number 32 of 2019 concerning Academic Regulations of the Institut Teknologi Sepuluh Nopember.
17. Institut Teknologi Sepuluh Nopember Rector Regulation Number 26 of 2020 concerning Vocational Program Academic Regulations of the Institut Teknologi Sepuluh Nopember.
18. Institut Teknologi Sepuluh Nopember Rector Regulation Number 25 of 2020 concerning Curriculum Evaluation Guidelines for Vocational Education Programs at the Institut Teknologi Sepuluh Nopember.
19. Institut Teknologi Sepuluh Nopember Rector Regulation Number 27 of 2020 concerning Curriculum Evaluation Guidelines for Academic and Professional Education Programs at the Institut Teknologi Sepuluh Nopember.
20. Institut Teknologi Sepuluh Nopember Rector Regulation Number 22 of 2021 concerning the Implementation of Independent Learning - Independent Campus Activities at the Institut Teknologi Sepuluh Nopember.



2. Vision, Mission, and Educational Objectives

The vision, mission, and educational objectives of Institut Teknologi Sepuluh Nopember, as stated in the Regulation of the Minister of Research, Technology, and Higher Education Number 54 of 2015 regarding the Statute of Institut Teknologi Sepuluh Nopember, are as follows:

ITS Vision

The vision of ITS is to become a globally reputable university in science and technology, particularly those supporting industry and maritime affairs with an environmental perspective.

ITS Mission

The mission of ITS is to contribute to the development of science and technology for the welfare of society through education, research, community service, and technology-based management.

ITS Education Mission:

1. Providing higher education based on information and communication technology with internationally quality curricula, lecturers, and teaching methods;
2. Producing graduates who are faithful and devoted to God Almighty, possess noble morals and character; and
3. Providing graduates with knowledge of technology-based entrepreneurship.

ITS Objectives

1. To enrich the life of the nation, foster and strengthen the sense of unity and unity of the nation based on values, academic ethics, morals, faith, and devotion to God Almighty.
2. To educate, develop the abilities of students, and produce graduates who are: (1.) of noble character; (2.) excel in science and technology; (3.) have



noble and independent personalities; (4.) professional and ethical; (5.) have integrity and high responsibility; and (6.) capable of self-development and competing at the national and international levels.

3. To provide high-quality contributions to the development of science and technology for national, regional, and international development needs.
4. To develop a networking system with other universities, the community, industry, central government institutions, regional government institutions, and other organizations, both nationally and internationally, based on academic ethics, benefit, and mutual benefit.
5. To foster a conducive academic climate that can cultivate appreciative, participatory, and contributory attitudes in the Academic Community while upholding academic values and morals to shape a dynamic and harmonious campus community.
6. To establish ITS as a university that is a source of growth and education in science and technology to support industrialization and environmentally conscious maritime development.

2.1 Faculty Vision, Mission, and Objectives

FDKBD Vision

To become an internationally renowned Faculty, contributing to the nation's self-sufficiency and serving as a reference in education, research, and community service in creative design, business, technology management, and development studies.

FDKBD Mission

1. To provide quality higher education in creative design, business, technology management, and development studies supported by information and communication technology.
2. To conduct high-quality and impactful research in creative design, business, technology management, and development studies.



3. To leverage all available resources and expertise in creative design, business, technology management, and development studies to address the challenges faced by the community, industry, central government, and local government.

FDKBD Objectives

1. To produce professional and integrity-driven graduates based on values of piety, possessing an entrepreneurial spirit, critical and innovative in creative design, business, technology management, and development studies, capable of competing in the global job market.
2. To generate outstanding research that contributes to developing knowledge in creative design, business, technology management, and development studies.
3. To publish scientific work in national and international journals.
4. To produce innovative products and designs that are beneficial to society and industry.
5. To engage in community service activities that improve the community's well-being.
6. To enhance the quality of human resources and governance systems following principles of good governance.

2.2 Department Vision, Mission and Objectives

Creative Design and Digital Business Faculty's Product Design Department has an education vision, mission, and objectives that align with the department's own vision and mission, which are as follows:

a. Industrial Design Department Vision

To become an internationally renowned institution of higher education in the field of product design within the creative industry through the synergy of science, technology, and art for the well-being of humanity.

b. Industrial Design Department Mission



To contribute to the creative industry through the synergy of science, technology, and art for the well-being of society, achieved through education, research, and community service.

1. To provide higher education based on technology, creativity, and synergy with an internationally acclaimed curriculum, faculty, and teaching methods.
2. To produce graduates who are faithful and devoted to the One Almighty God, with high moral and ethical values.
3. To equip graduates with entrepreneurship knowledge based on design thinking.
4. To actively participate in developing science and technology, especially in the technology-based creative industry, through research activities.
5. To utilize all available resources to address challenges faced by the community, industry, the central government, and local government in organizing education, research, and community engagement activities.

c. Department objectives (or Programme Educational Objectives - PEO)

1. To produce students with the ability to:
 - a) Design products (and systems) with consideration for human behavior, the environment, economics, safety, security, and social issues.
 - b) Operate design technology and equipment, both manually and digitally, in an integrated and multi-dimensional manner.
 - c) Research design issues using design principles and methods.
 - d) Communicate design concepts and specifications verbally and visually using various presentation media technologies.
 - e) Apply responsible design by considering factors related to human behavior, the environment, economics, safety, security, and social issues.
 - f) Practice design following the ethics of the design profession.
2. To produce research in the field of the creative industry with an international interdisciplinary reputation.



3. To make tangible contributions to society in the field of the creative industry.

2.3 Study Program Vision, Mission and Objectives

The Industrial Design Study Program within the Department of Product Design at the Faculty of Creative Design and Digital Business, ITS, holds a vision, mission, and educational objectives that align with the department's vision and mission:

a. Industrial Design Study Program Vision

To become an internationally renowned institution of higher education in the field of product design within the creative industry through the synergy of science, technology, and art for the well-being of humanity.

b. Industrial Design Study Program Mission

To contribute to the creative industry through the synergy of science, technology, and art for the well-being of society, achieved through education, research, and community service.

1. To provide higher education based on technology, creativity, and synergy with an internationally acclaimed curriculum, faculty, and teaching methods.
2. To produce graduates who are faithful and devoted to the One Almighty God, with high moral and ethical values.
3. To equip graduates with entrepreneurship knowledge based on design thinking.
4. To actively participate in developing science and technology, especially in the technology-based creative industry, through research activities.
5. To utilize all available resources to address challenges faced by the community, industry, the central government, and local government in organizing education, research, and community service activities.

c. Industrial Design Study Program Objectives (or Programme Educational Objective – PEO)

1. To produce students with the ability to:



- a) Design products (and systems) with consideration for human behavior, the environment, economics, safety, security, and social issues.
 - b) Operate design technology and equipment, both manually and digitally, in an integrated and multi-dimensional manner.
 - c) Research design issues using design principles and methods.
 - d) Communicate design concepts and specifications verbally and visually using various presentation media technologies.
 - e) Apply responsible design by considering factors related to human behavior, the environment, economics, safety, security, and social issues.
 - f) Practice design following the ethics of the design profession.
2. To produce research in the field of the creative industry with an international interdisciplinary reputation.
 3. To make tangible contributions to society in the field of the creative industry.

Table 2.1. Study Program Educational Objectives (TPP)

No.	TPP Code	Description
1	TPP-1	Graduates with competencies, including the ability to design products and systems, taking into consideration all influencing factors, which encompass fundamental design principles and aesthetics, material characteristics, functionality, user experience, ergonomics, system design engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.
2	TPP-2	Graduates are capable of competing nationally and internationally, aiming to contribute significantly to problem-solving by implementing information and communication technology while adhering to sustainability principles and understanding technology-based entrepreneurship.
3	TPP-3	Graduates capable of adapting to new developments and proficient in utilizing design process tools, including manual or



		digital equipment, in line with current technology and trends.
4	TPP-4	Graduates capable of developing their careers, working adaptively and efficiently, individually and in teams, possessing leadership and managerial skills.
5	TPP-5	Graduates capable of researching problems, formulating and publishing design needs and solutions for the present or future using relevant design and research methodologies, thereby making a tangible contribution to society in the field of the creative industry.



3. Curriculum Evaluation and Tracer Study

In assessing the curriculum for the academic years 2018-2022, a systematic evaluation based on evaluation categories conducted by the internal quality assurance team of the Product Design program has been presented. The evaluation encompasses both formative and summative assessments and includes an evaluation of the impact on graduates due to the operation of the previous curriculum, known as the Tracer study.

3.1 Curriculum Evaluation

For the vision, mission, goals, and objectives to be achieved, the necessary strategies must be implemented to attain a high standard of education. A sound curriculum with clear learning outcomes aligned with the Indonesian National Qualification Framework (KKNI) and a teaching system that conforms to established standards are essential. Likewise, research and community engagement activities must be integrated into the learning system to support and enhance the courses. Thus, it is imperative to engage students actively in this process. Furthermore, an academic environment conducive to learning, adequate learning spaces and facilities, guest lectures, industry partnerships, training, community engagement, and other supporting activities need to be established.

Policy: The Product Design Curriculum is structured in the Curriculum Document for 2018-2023 format and arrangement compliant with ITS Rector Regulation No. 15 of 2018 regarding the Academic Regulations of ITS in 2018, which was ratified on March 26, 2018. The curriculum document includes educational goals and objectives, strategies, methods, instruments, and the Vision and Mission of the Study Program, graduate profiles, with one of its fundamental bases being the Tracer study. It incorporates Graduate Learning Outcomes (CPL) that have been adapted to the Indonesian National Qualification Framework (KKNI) levels, subject matter, course development, CPL mapping, course content, syllabi, and Course Learning Plans (RPS).

Strategy: The Product Design Department strives to meet the educational standards set by ITS, encompassing curriculum, the learning process, integrating



research and community service activities into the educational process, and creating an academic environment. The Product Design program curriculum is designed to be competitive nationally and internationally in education. The Product Design program will continue to make a tangible contribution to improving the quality of Indonesia's creative industry, enabling it to compete more effectively on both national and international stages. This aligns with ITS's vision to become a university with international recognition.

The Product Design program has the necessary human resources and infrastructure to create a conducive academic environment, including appropriate learning spaces, reading rooms, workspaces, practice areas, laboratories, and other well-equipped facilities, in addition to a range of both intra and extracurricular activities such as guest lectures, academic forums, industry visits, skills training, student exchange programs, and other supporting activities.

The curriculum is evaluated annually and periodically every five years. Curriculum development is following established guidelines. The program then follows a series of steps, including the development of graduate profiles (based on tracer studies), Graduate Learning Outcomes (CPL), subject matter, subject matter matrices with CPL, course distribution per semester, curriculum structure, subject matter matrices for courses with CPL, syllabi, and Course Learning Plans (RPS). The curriculum structure incorporates mandatory national courses, mandatory ITS courses, introductory science courses, and program-specific courses to support expertise in Product Design. Curriculum development involves the participation of alums, industry experts, and benchmarking with other institutions. The bachelor's curriculum employs a package system designed from the first semester to the final semester.

Product Design is a field of knowledge and expertise in the design of functional products, utilizing creativity and knowledge based on considerations of function, aesthetics and beauty, industrial and manufacturing principles, user and market factors, and technology. The objects of product design include five main categories: (1) style products such as apparel, fashion, jewelry, and accessories; (2) electronic and appliance products including electronics, household equipment,



mobile devices, and tools; (3) furniture products encompassing furniture, furnishings, product aesthetics, and exterior aesthetics; (4) transportation products involving land, sea, air, and car styling; and (5) special categories encompassing healthcare equipment, military equipment, educational equipment, and interactive products.

Curriculum References: The Product Design Curriculum of the Product Design Department at ITS Surabaya for the years 2018-2022 is based on the following sources:

1. NASAD (The National Association of Schools of Art and Design): An international organization overseeing various schools and universities related to the fields of fine arts and design in America. Some essential references include a major in design with a minimum 25% studio system (Rules of Practice and Procedure, Article I Section 3 F.3).
2. Curriculum Proportions referenced from the Standard of Accreditation IX. Baccalaureate Degrees in Art and Design, Section M - Industrial Design: Curricular structure 1.b, which comprises 30-35% Industrial design studies, 25-30% of the program including supporting courses on design (psychology, human factors, and user interface), related technology (engineering areas), and fine arts; 10-15% covers the history of fine arts and design; and 25-30% includes general studies with opportunities for internships, cooperative programs, and industry internships.
3. Ministry of Research, Technology, and Higher Education (Kemenristekdikti): Competencies for Bachelor's programs.
4. Education Program of the Sepuluh Nopember Institute of Technology (ITS) in Surabaya: Inclusion of elective courses and enrichment in each department as interdisciplinary and intradisciplinary programs.
5. Learning Outcomes are in accordance with the standards agreed upon by the forum of Product Design higher education institutions in the Indonesian Product Design Alliance (ADPII) in 2017.
6. World Design Organization (WDO): Contains information regarding the qualifications of Product Design (industrial design) expertise, as per the



statements of this international organization regarding the definition, scope of work, educational networks, and professional development of Product Design at the international level.

7. Course naming is based on the results of evaluations, global benchmarking of industrial design higher education institutions, and the use of guidelines from the Industrial Design Institute, as outlined in "A Guide to the Industrial Design Body of Knowledge (IDBOK Guide)" from the Industrial Design Institute in Philadelphia in 2014.

Education Objectives: for the Undergraduate Industrial Design include:

1. Preparing Graduates: To equip graduates, in this case, bachelor's degree holders in product design, with the ability to harness creativity and knowledge.
2. Mastery of Product Design Skills: To prepare graduates to master skills in the field of product design across various product categories, including:
 - a. Style Category: encompassing apparel, fashion, jewelry, and accessories.
 - b. Electronics and Appliance Category: covering electronic products, household appliances, handheld devices, and tools.
 - c. Furniture Category: comprising furniture products, furnishings, aesthetic elements of products, and exterior aesthetic elements.
 - d. Transportation Category: involves ground transportation, maritime transportation, air transportation, and car styling.
 - e. Special Category: includes healthcare equipment and military products.
3. Sensitivity to Issues and Market Opportunities: To prepare graduates who are sensitive to issues and market opportunities related to aesthetics, technology, engineering, socio-cultural factors, economics, and multidisciplinary aspects, both interdisciplinary and intradisciplinary.
4. Analytical and Research Competence: To equip graduates with the ability to analyze and conduct research using a multidisciplinary approach, enabling them to pursue further education effectively and actively participate in the professional field of product design.



5. Development of Communication and Presentation Skills: To develop graduates' capacity for effective communication and presentation of designs, from ideation and method selection to design concepts, design processes, experimentation, modeling, engineering aspects, and prototyping, in a clear, systematic, and proficient manner.

Management of Academic Learning in ITS Product Design:

1. In the Implementation of Learning: The actions taken include:
 - a. Preparing Course Syllabi (RPS), one of the documents in the Product Design curriculum. The RPS contains learning outcome targets, subject matter, teaching methods, timing, and assessment of learning outcomes.
 - b. Monitoring and evaluating the learning process. Monitoring is conducted every four weeks during the course. The academic activities are evaluated at the department level during mid-semester and end-of-semester evaluation meetings. To ensure alignment of course content, strategies, and teaching methods with learning outcomes, students complete the Faculty's Lecturer Learning Index (IPD) and online questionnaires for each course at the end of the semester. The results are then evaluated during the end-of-semester departmental evaluation meetings and faculty leadership meetings. This monitoring and evaluation process is expected to help develop the curriculum and improve subsequent learning processes.
 - c. Quality evaluation of the learning assessment can be observed in how well the Expected Learning Outcomes (CPL) defined by the Department are achieved. The quality of learning implementation is deemed satisfactory when CPLs are achieved. The principles of assessing the measurement of learning outcome achievement must be educational, authentic, objective, accountable, and transparent, carried out in an integrated manner. Assessment/evaluation techniques should comply with the assessment instrument, including having an assessment plan and conducting the assessment objectively per the plan or agreement. Assessment should be transparent, providing feedback opportunities to students regarding the



assessment process that has been conducted. Documentation of the assessment process and student learning outcomes is necessary.

2. Integration of Research and Community Service in the Learning Process and Curriculum Development: The outcomes of research and Community Service (PkM) activities are integrated into the curriculum in various forms, such as additional course material, case studies, becoming a chapter or sub-chapter in course materials. This is done to enhance the quality of the teaching and learning process and achieve the defined CPL.
3. ITS Product Design Department provides facilities and endeavors to create a conducive academic atmosphere: This is accomplished by providing ample opportunities for interaction between students and faculty. This is demonstrated through student-involved activities, including: organizing international seminars, faculty research, community service, hosting guest lectures involving speakers from companies, professionals, academic staff from local and international institutions, SMEs, alums, and government agencies, field trips, industrial visits, and professional association activities. Projects or studies carried out by faculty members in the laboratory involve students. Faculty members encourage student participation in competitions related to the creative industry field. Intellectual autonomy, academic freedom, and freedom of speech are also manifested in the form of: (1) Student feedback on the teaching activities through questionnaires distributed by the Department and social media; (2) The freedom to determine the title/theme of course assignments or Final Projects; (3) The freedom to seek additional references according to the chosen topic and theme and present them during lectures, colloquium, and/or Final Projects; (4) The freedom to independently determine student association programs; (5) Faculty involvement as active members and officials in Indonesian design professional associations, especially the Surabaya or East Java chapter of ADPII.
4. The Product Design Department at ITS endeavors to maximize additional performance indicators defined by Institut Teknologi Sepuluh Nopember (ITS) Surabaya related to the Education Sector and its connection with the



curriculum, including: (1) International Activities Organized (guest lectures, workshops, and international seminars) have met the targets set by ITS; (2) Conducting International Classes, online courses, blended learning, and applying case-based methods or team-based projects for more than 50% of each course.

Based on the curriculum outcomes by institutions in Indonesia, the field of Industrial Design in Indonesia establishes that ITS Industrial Design is an educational institution primarily focusing on graduates with a foundation in science and technology.

Table 3.1. The Indonesian Industrial Product Designer's knowledge is in accordance with the Organizing Institution

source : Achmad Syarief, Seminar Nasional ADPII-ITSB 2019

Organizing institution type	Institution Name	Status
Science and technology based educational institutions	ITS ITB ITENAS ITSB ITATS	PTNBH PTNBH Private Private Private
Arts-based educational institutions	ISI Yogyakarta	PTN
Liberal Arts based educational institutions	Universitas Trisakti Universitas Telkom Universitas Esa Unggul Universitas Pembangunan Jaya Universitas Trilogi Universitas Surabaya UK Duta Wacana	Private Private Private Private Private Private Private
Vocational-based educational institutions	Politeknik Negeri Samarinda	PTN
Business Science based educational institution	STIKOM	Private

Based on the curriculum evaluation results and the competitive landscape of the field of Product Design in Indonesia, ITS Surabaya's Product Design can be considered the premier institution. However, ITS Surabaya's Product Design is



expected to adapt to the changing issues in design in line with the developments of the Industry 4.0 era, as outlined in the following mapping:

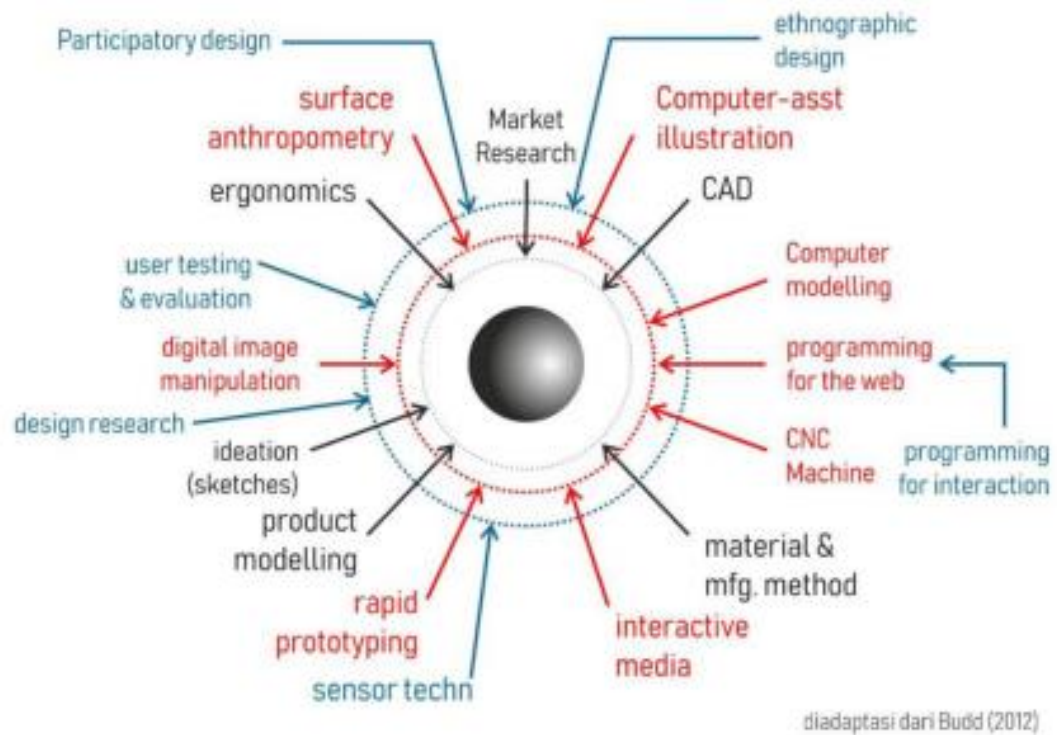


Figure 3.1 Industrial Design Map according to industry 4.0 developments
(source: Achmad Syarief, Seminar nasional Aliansi Desainer Produk Industri Indonesia – ITSB 2019)

The rapid development of technology transformation brings changes to the mastery of knowledge and skills of an industrial product designer (Jim Budd, 2012). Hard skills are competing with machines and smart devices, so the role of education should align with its scope as follows:

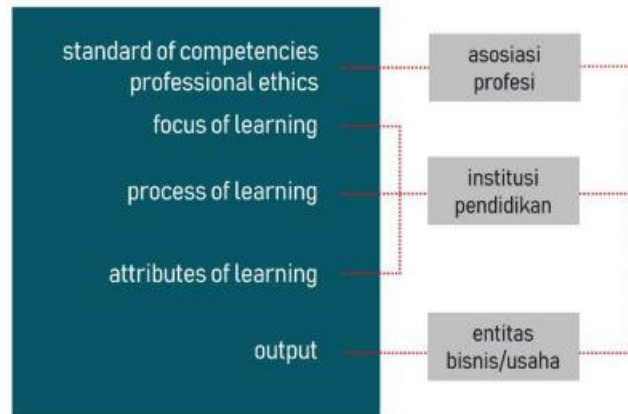


Figure 3.2 Scope of Industrial Design Education in Indonesia
(source: Achmad Syarief, Seminar nasional Aliansi Desainer Produk Industri Indonesia – ITSB 2019)

Based on the curriculum evaluation results and referring to the Graduate Learning Outcomes recommended by the Indonesian Product Design Study Program Forum - ADPII, the standardization of studies in the implementation of courses can consider the studies in the NASAD Handbook 2018-2019 as follows:

N A S A D Handbook (2018-2019) VIII A-B: p 97	Studio	DP 1-5
	Design History, Theory and Criticism	Metodologi Desain Sejarah Desain Tinjauan Desain Semantika Produk
	Technology	Material dan Proses Pemodelan Digital Teknik Presentasi
	Synthesis	KP DP TA DP

Figure 3.3 Standardization of studies in course implementation
(source: Achmad Syarief, Seminar nasional Aliansi Desainer Produk Industri Indonesia – ITSB 2019)

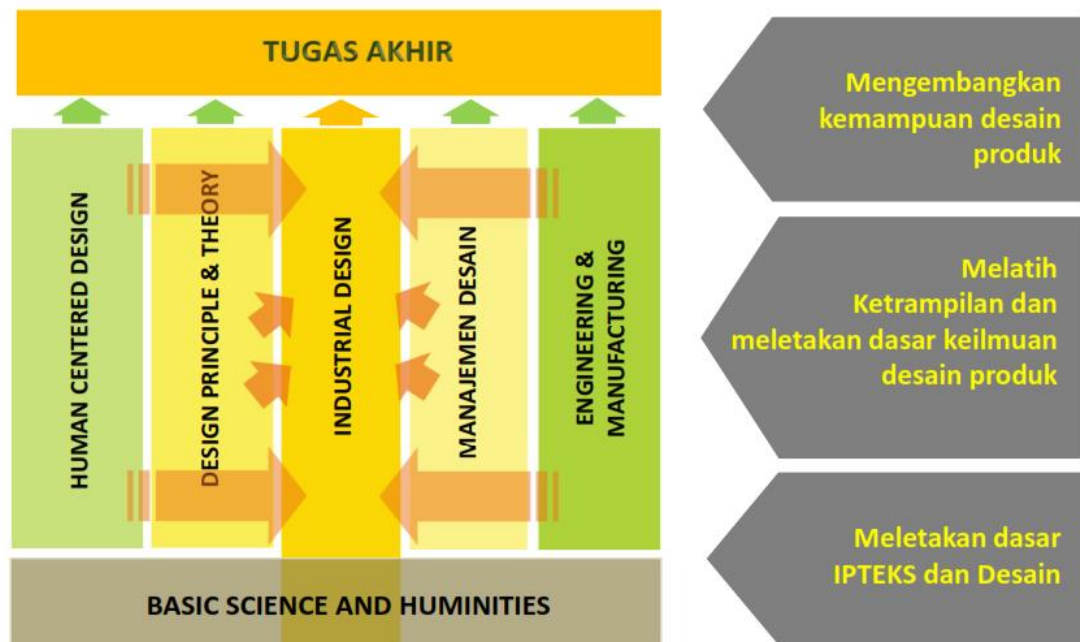


Figure 3.4 Study of ITS Industrial Design Courses
(source: Dokumen Kurikulum Despro ITS 2018)

Furthermore, the curriculum evaluation at the ITS Product Design mentions that the review is adjusted according to the Vision, Mission, Strategic Plan, the Independent Study Campus implementation, and the Advisory Board's input.

The Advisory Board established by ITS Surabaya's Product Design plays a significant role in curriculum evaluation and provides an overview of the occupational map for product design graduates in Indonesia. The Advisory Board consists of user graduates, stakeholders, alums, association figures, academics, and policy stakeholders in product design in Indonesia. The curriculum evaluation by the Advisory Board mentions several keynotes, including:

1. The curriculum in ITS Surabaya's Product Design is already good but needs to be adjusted to the issues of industrial and technological developments.
2. Design studios in Product Design need to be tailored to interests and talents and should enrich elective courses to meet global industry challenges.
3. Higher education institutions should focus on teaching (the focus, process, and attributes of learning).
4. The need to strengthen Strategic Thinking and Design Thinking.



5. Adjustment in implementing the Independent Study Campus while maintaining the established Graduate Learning Outcomes.
6. Implementing case-based methods or team-based projects in over 50% of each course will facilitate students' adaptation to the professional world.
7. The occupational map of the product designer profession needs to be considered when mapping graduate profiles and Graduate Learning Outcomes.

The product designer profession has job/occupational positions based on job types, competencies, workplace, experience, etc. This occupational map/profession also outlines a specialization framework.



Figure 3.4 Industrial Product Design Profession Occupation Map
(source: Proyek Desain 2019)

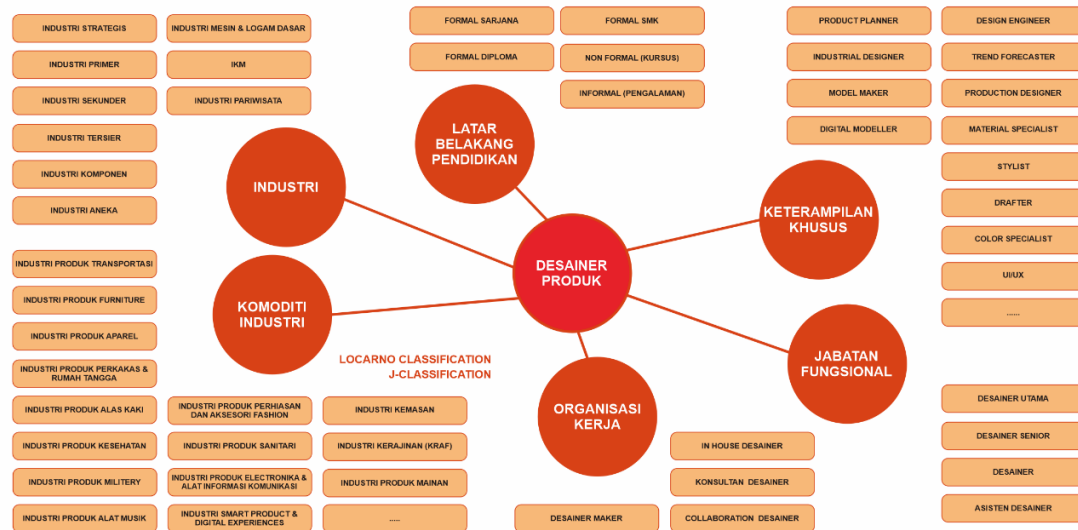


Figure 3.5 Map of Industrial Commodities and Industrial Product Design
Profession Occupations
(source: ADPII 2020)

3.2 Tracer Study

Analysis of meeting graduate learning outcomes (CPL) measured by valid and relevant methods. 1) Breadth, 2) Depth, and 3) Utility of the analysis as indicated by the improvement in CPL over time. The analysis of meeting graduate learning outcomes is conducted by examining data from key performance indicators based on outputs and the achievement of the university's duties, as well as tracer studies of alums over a specific period. The implementation of the Tracer Study in the ITS Surabaya Product Design Department can be illustrated with the flowchart shown in Figure 3.6:

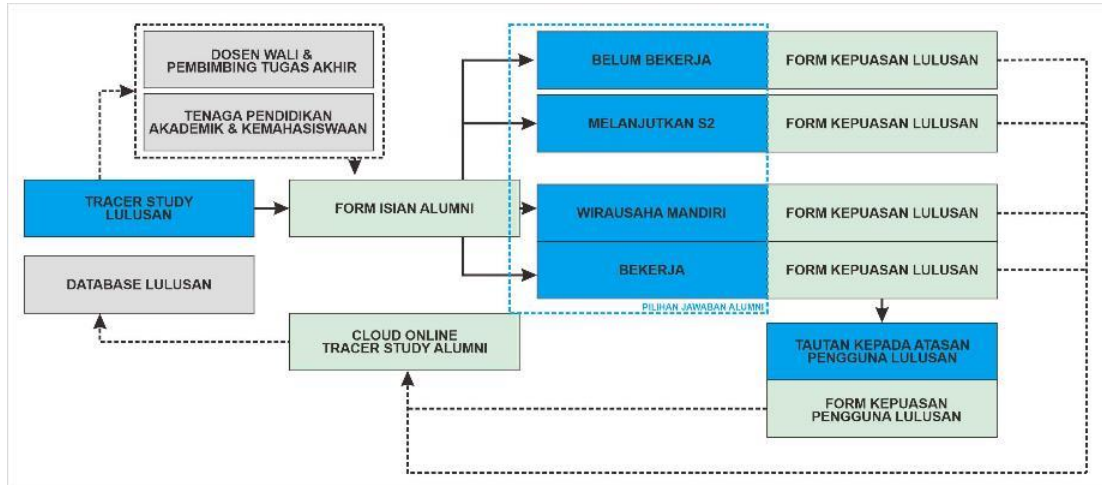


Figure 3.6. Tracer study process flow

1. Tracer Study Organization

The PS carries out this tracer study through the responsibilities of academic and student affairs staff, with academic advisors assisting as liaisons for communicating with graduates.

2. Tracer Study Methodology

The data collection method for the tracer study involves distributing questionnaires within one year after graduation. These questionnaires are sent online to the alum network through a form integrated into the Product Design PS alum cloud database.

3. Instruments

The PS conducts the tracer study through the duties of academic and student affairs staff, with academic advisors assisting as liaisons for communicating with graduates.

4. Assessment

The assessment process is carried out by the graduates personally.

5. Evaluation

PS evaluates the evaluation using a quality assurance guideline for graduate quality.

The results of the tracer study are important to consider when determining the graduate profile, in addition to the Vision, Mission, Objectives, and Strategic Plans of the Product Design Department, including:



1. Waiting Time to Work for Graduates

In accordance with the IPEPA-PS Graduate Waiting Time data, the percentage of graduates securing their first job within a waiting period of less than six months stands at 69.9%. For those with a waiting period of 6 to 18 months, this percentage is 29.2%. Furthermore, there is one instance among the study's tracers of a graduate obtaining employment after a waiting period exceeding 18 months. Upon investigation, it was revealed that the extended duration was due to the individual pursuing their dream job.

A more detailed analysis of the Product Design tracer study data indicates that 33.8% of the tracked graduates were employed before graduation. One month after graduation, 15% secured employment, while only 0.8% did so after a waiting period exceeding 18 months. The competitiveness of PS (Program Studi) graduates is highly positive. Industrial Design graduates have demonstrated the ability to establish independent businesses before completing their studies, and some have already been accepted (signed employment contracts) before graduation.

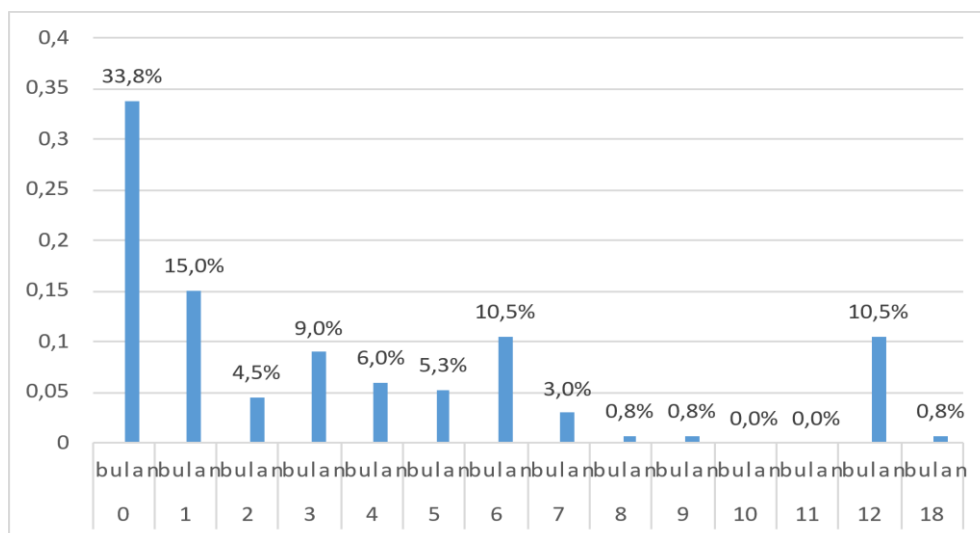


Figure 3.7 Detailed graph of the waiting period for graduates in the months after graduation for the 2019-2021 period

2. Suitability of Working Field

Regarding the Suitability of Employment Fields within IPEPA-PS, based on the tracked number of graduates, it was determined that the level of



suitability for each graduate in the TS-4, TS-3, and TS-2 graduating years reached a high degree of 77.9%, with moderate suitability at 20.4%, and low suitability at 1.8%. The 1.8% of low suitability comprises several graduates working in bureaucratic roles and ministries with job domains outside the target field of product design, such as accountants, political bureaucrats, and marketing professionals.

For a more detailed breakdown of the industrial Design graduate tracer study data from TS-4 to TS-2, it can be outlined as follows: 50.7% are employed as designers in companies, 14% work in companies while simultaneously running a product business, 13.2% are engaged in pure independent entrepreneurship, 7.4% pursue master's (Masters) studies, 12.5% work as freelance designers, and 2.2% participate in government human resources development programs.

3. Graduate Workplace

Workplace of Graduates, the data obtained, corresponding to the number of tracked graduates, is as follows: In the TS-4 graduating year, 45% were employed at multinational/international business levels, 32% worked at a national scale workplace, and 23% worked at local scale workplaces or were independent entrepreneurs without official permits. In the TS-3 graduating year, 50% were employed at multinational/international business levels, 35% worked at a national scale workplace, and 15% worked at local scale workplaces or were independent entrepreneurs without official permits. In the TS-2 graduating year, 14% were employed at multinational/international business levels, 63% worked at a national scale workplace, and 23% worked at local scale workplaces or were independent entrepreneurs without official permits. An increase was observed in graduates transitioning from being unpermitted independent entrepreneurs to becoming nationally permitted independent entrepreneurs. This contributed to a 65% percentage of graduates working at a national scale or as officially certified independent entrepreneurs in the TS-2 category.

4. User Satisfaction



User Satisfaction can be described as follows: The highest ratings given by graduate users are (1) Ethics, (2) self-development and adaptability, (3) the use of information technology, and (4) teamwork. The highest and dominant Good ratings given by graduate users, among other skills, are for English language proficiency, followed by communication skills. However, it is worth noting that English language proficiency requires further attention as it has a relatively high rating of deficiency compared to other graduate skills. Overall, the User Satisfaction Level for Graduates is very good, with room for improvement, particularly in English language proficiency, which can be enhanced through the implementation of English language classes and an improved English language learning environment within the academic setting.

5. Graduates GPA

Analysis of Graduates' GPA is as follows: Continuous improvement has been observed, with the maximum GPA in TS-1 increasing by 0.06 on the GPA scale, followed by a higher increase in subsequent semesters of 0.1 on the GPA scale. The average GPA has shown steady improvement, starting with a 0.06 increase on the GPA scale in TS-1 and followed by a 0.03 increase in subsequent semesters. The minimum GPA of students has improved from 2.72 GPA in TS-1 to 2.73 GPA, representing a 0.01 increase on the GPA scale, with a further increase of 0.04 on the GPA scale by the Graduation Year (TS). The achievement of learning outcomes with the GPA improvement indicator has been successfully implemented. Increases have been observed in the minimum GPA, average GPA, and maximum GPA. It is essential to maintain this positive trend. Therefore, the Program Studi (PS) should continue the strategy of faculty communication to motivate students to improve the quality of their GPAs. Efforts to enhance the maximum GPA scale by recognizing the best GPAs each semester should be maintained and executed to motivate and compete among students.

6. Student Achievement



Students' Academic Achievements of IPEPA-PS: the analysis of students' academic achievements can be described as follows: Students' overall academic achievement has been consistently improving. In 2018, the PS recorded 9 notable achievements by students, 3 of which were in international competitions. In 2019, there was an increase in achievements to 10. However, international achievements decreased due to students' focus shifting towards increasing the number of student academic publications (refer to Table 8.f). In 2020, the PS made significant efforts to enhance the quality of students' academic achievements, substantially increasing to 39 achievements. The most substantial increase was observed at the national level, with 34 achievements in 2020 compared to 10 in 2019 and 6 in 2018. International achievements experienced a brief decline in 2019 but were subsequently increased to 4 in 2020 from 3 in 2018.

Based on Table 8.b.2) Non-Academic Student Achievements, the analysis of non-academic achievements is as follows: Student concentration in achieving excellence is primarily in the academic field, with only 5 non-academic achievements documented. Student non-academic achievements in 2018 amounted to 2; none were recorded in 2019, 1 achievement was recorded in 2020, and 2 were recorded in 2021.

Conclusion: Student academic achievements have been exceptionally commendable, with data indicating a surprising increase in 2020, totaling 39 achievements. In contrast, non-academic student achievements appear to remain stable. The students' performance achievements align with the Department's expectations, marked by a notable improvement with a strong emphasis on academic accomplishments.

7. Educational Effectiveness and Productivity

Cohort data for PS graduates, from the first year of study to the final year within the program's defined time frame, is as follows: The average duration of students' studies has progressively decreased each year. In the TS-6 cohort, the average study duration was 5.23 years, while in the TS-3 cohort, the average study duration aligned with the target of precisely 4 years based



on graduation at that time. This demonstrates the collective efforts and hard work of all academic members in the Product Design Program to enhance the effectiveness of education with each passing year. On the other hand, the decreasing average study duration is paralleled by increasingly positive student productivity in their pursuit of education within each incoming cohort.

8. On-Time Graduation Percentage

The On-Time Graduation Percentage is as follows: The on-time graduation percentage for PS students increased until the end of TS-1 but experienced a decline in TS. This is estimated to be due to the data update time until June 2021, and the graduation period in September 2021 could not be included. Considering the developments in the implementation of PS Final Projects, it can be assumed that the percentage at the end of TS will increase, similar to TS-1.

Conclusion: Based on the Analysis of the Effectiveness and Productivity of Education regarding the average study duration, graduation percentage, and study success percentage at the end of each TS, it can be concluded that the Effectiveness and Productivity of the Product Design PS have experienced a significant improvement. Nevertheless, the efforts made by the PS must be continually enhanced in accordance with the Product Design curriculum concept designed for students to complete their education in less than 4 years with a cum laude distinction (graduating before or precisely at 8 semesters), which is 3.5 years.

Further details regarding the graduate tracer study results, as previously outlined, provide data on the distribution of employment for Industrial Design graduates, which subsequently serves as the primary data for determining the graduate profile by the Industrial Design Department in collaboration with the Advisory Board (Figure 3.8).

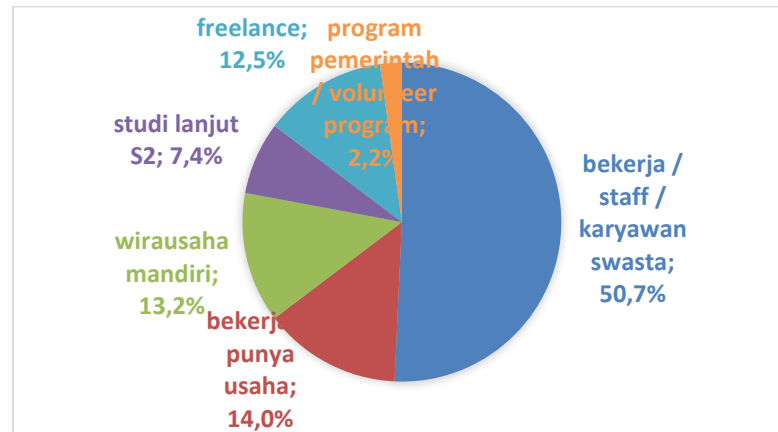


Figure 3.8. Job status graph for product design graduates

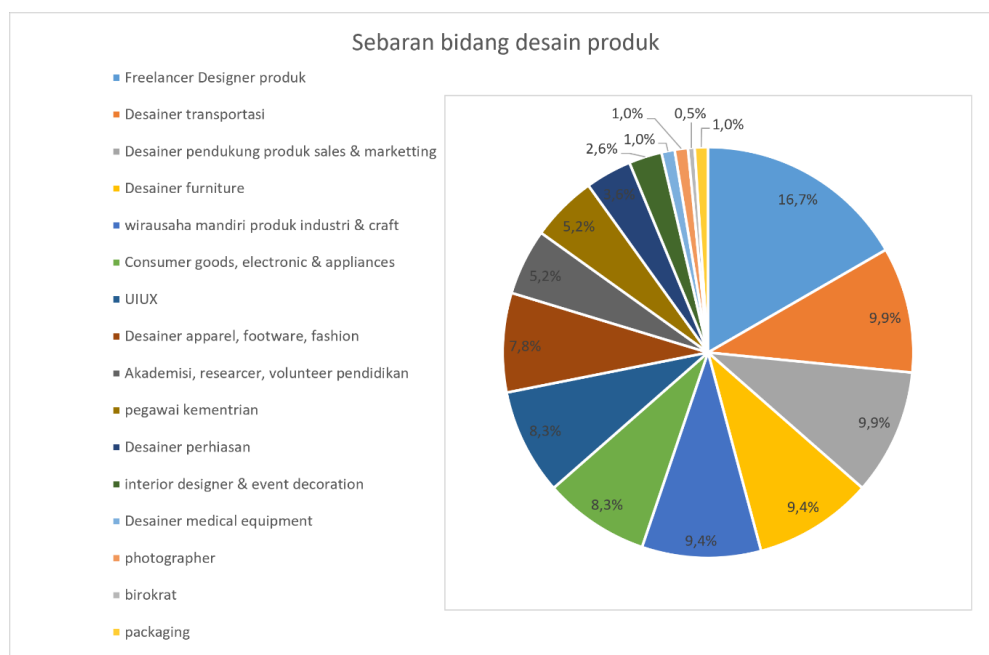


Figure 3.9 Distribution of job fields for product design graduates

The specialization of employment for Product Design graduates, based on the tracked data, is as follows:

- Freelance Product Designers/Online Freelancers: 16.7%
- Transportation Designers: 9.9%
- Product Sales & Marketing Support Product Designers: 9.9%
- Furniture Designers: 9.4%
- Independent Entrepreneurs for Crafts and Industrial Products: 9.4%
- Household, Electronic, and Appliance Product Designers: 8.3%
- UI/UX Designers: 8.3%



- Apparel, Footwear, and Fashion Product Designers: 7.8%
- Academics, Research Teams, and Design Education Volunteers: 5.2%
- Ministry Employees: 5.2%
- Jewelry Designers: 3.6%
- Contractors, Interior Designers, and Event Decoration Designers: 2.6%
- Health Equipment Designers: 1%
- Product Packaging Designers: 1%
- Photographers: 1%
- Bureaucrats outside the field of design: 0.5%



4 Graduate Profile, Study Program Educational Goals, and Formulation of Graduate Learning Outcomes (CPL)

The Graduates Learning Outcomes (CPL) are formulated by the Industrial Design program based on the results of graduate tracing (tracer study), input from stakeholders, including the Advisory Board, professional associations such as ADPII (the Association of Indonesian Industrial Product Designers), which includes the Forum of Indonesian Product Design Programs, the challenges and future developments in knowledge and expertise, and curriculum evaluations.

4.1 Graduate Profile and Study Program Educational Goals

The graduate profile determines the objectives and formulation of Graduate Learning Outcomes (CPL). The graduate profile outlines the roles of graduates in their field of expertise or employment after completing their studies. The graduate profile for the Product Design program at ITS Surabaya is established through an analysis of the Tracer Study and input from the Advisory Board. The study of the graduate profile considers institutional goals, strategic plans towards international accreditation, and the requirements of graduates by users in the industrial sector, as well as advancements in the field of knowledge.



Figure 4.1 Profile of ITS Industrial Design Graduates

Table 4.1. Graduate profile and description

No	Graduate Profile (PL)	Description
1	PL-1	A Product Design graduate is directed to provide professional product design services, encompassing a strategic problem-solving process that fosters innovation and novelty, contributes to business success, and leads to an enhancement in the quality of life through the creation of innovative products, systems, services, and experiences that bring benefits and advantages to both consumer society and industry. This entails the promotion of creative, analytical, and systematic thinking, the translation of user needs, aesthetics, optimization of function, material utilization and selection, production capabilities, technological advancements, and added value and impact analysis on both social and economic environments. This materializes, but is not limited to, the combination of forms, materials, colors, flow, features, components, and others, whether as a whole or in a modular manner, for subsequent production or replication through automated or manual processes



		and may be registered as Industrial Design Intellectual Property. (ADPII 2020) Industrial Designer Professional Profile 1: Transportation Product Designer Profile 2: Furniture Product Designer Profile 3: Appliances and Medical Product Designer Profile 4: Fashion, Apparel, and Jewelry Product Designer
2	PL-2	Entrepreneur – Industrial Design as an industrial designer involved in product industries, start-ups, or entrepreneurial ventures within the creative industry.
4	PL-3	Academics, researchers and policy makers in the field of industrial design As an educator/lecturer in the field of Industrial Design academia, an independent researcher, or a specialized institution related to design, including policy stakeholders associated with product design.
8	PL-4	Design Consultant As a designer who operates a design agency or consultancy in the field of design or works as a freelance designer that forms a part of the product and design value chain.

Note: The code for the graduate profile can be written as "PL"

Table 4.2 Correlation between graduate profiles and study program educational objectives

No	Graduate Profile (PL)	Study Program Educational Objectives (TPP)				
		TPP-1	TPP-2	TPP-3	TPP-4	TPP-5
1	PL-1	√	√	√	√	
2	PL-2	√	√	√	√	



No	Graduate Profile (PL)	Study Program Educational Objectives (TPP)				
		TPP-1	TPP-2	TPP-3	TPP-4	TPP-5
4	PL-3	√	√	√	√	√
8	PL-4	√	√	√	√	√

Note:

PL- ...: Graduate Profile of ...

TPP-...: Study Program Educational Objectives of ...



4.2 CPL Formulation

The Graduate Learning Outcomes to be implemented during the academic period of 2023-2028, incorporating the new curriculum with CPL 1, CPL 2, and CPL 3, are jointly determined by the Institut Teknologi Sepuluh Nopember as follows:

CPL Factor	CPL	Bachelor	Applied Bachelor	Master	Applied Master	Doctor	Profession	Specialist	Sub-Specialist
ATTITUDE	1	Able to demonstrate attitudes and characteristics that reflect devotion to the One Almighty God, ethics and integrity, noble moral values, sensitivity and concern for social and environmental issues, appreciation of cultural diversity and diversity, upholding the rule of law, prioritizing the interests of the nation and the wider society, through creativity and innovation, excellence, strong leadership, synergy, and other potential attributes to achieve maximum results.							
GENERAL SKILLS	2	Able to examine and utilize scientific knowledge and technology to apply it to a specific field of expertise, and capable of making well-founded decisions based on individual work as well as group work in the form of final project reports or other learning activities with	Able to assess cases related to the application of scientific knowledge and technology in the field of expertise according to job competency standards, and capable of making well-informed decisions based on individual work as well as group work in the form of final project reports or	Able to develop and resolve scientific and technological problems within their field of expertise through research with an interdisciplinary or multidisciplinary approach, leading to the creation of innovative and	Able to develop and resolve issues related to the application of technology within their field of expertise through research with an interdisciplinary or multidisciplinary approach, resulting in innovative and validated works in the form of theses and	Able to develop new theories, concepts, or ideas and solve scientific and/or technological issues within their field of expertise through research with an interdisciplinary, multi, and transdisciplinary approach, resulting in	Able to plan and manage resources and evaluate and resolve problems through a monodisciplinary approach, utilizing scientific knowledge and full responsibility for all aspects.	Able to work in the core field/profession, such as making decisions, critically evaluating, enhancing professional skills, and improving resource quality at the national, regional, and international levels.	Able to develop knowledge to solve problems and manage, lead, and develop research through interdisciplinary, multidisciplinary, and transdisciplinary approaches, resulting in creative, original, and validated



		outcomes equivalent to a final project, through logical, critical, systematic, and innovative thinking.	other learning activities with outcomes equivalent to a final project through logical, critical, innovative, high-quality, and measurable thinking, while considering health, safety, security, and the environment.	validated works in the form of theses and papers that have been accepted in accredited national scientific journals or presented at reputable international seminars.	papers that have been accepted in accredited national scientific journals or presented at reputable international seminars.	creative, original, and validated works in the form of dissertations and papers published in reputable international journals.			works that are beneficial to humanity and capable of gaining national and international recognition.
3	Able to self-manage learning and continuously develop oneself as a lifelong learner to compete at national and international levels, make a tangible contribution to problem-solving by implementing information and communication technology, adhering to sustainability principles, and understanding technology-based entrepreneurship.			Able to self-manage learning and continuously develop oneself as a lifelong learner to compete at both national and international levels, to make a tangible contribution to problem-solving by implementing information and communication technology while also considering sustainability principles.					



CPL can be generated/reformulated to conform to the standards of international accreditation bodies, as indicated in Table 4.3 below:

Table 4.3. Study Program Graduate Learning Outcomes



Code	CPL Description
CPL-1	Able to demonstrate attitudes and character that reflect: devotion to the One Almighty God, ethics and integrity, noble moral values, sensitivity and concern for social and environmental issues, appreciation of cultural diversity and diversity, upholding the rule of law, prioritizing the interests of the nation and the wider society, through creativity and innovation, excellence, strong leadership, synergy, and other potential attributes to achieve maximum results.
CPL-2	Able to assess and utilize scientific knowledge and technology to apply it to the field of Product Design, and capable of making well-founded decisions based on individual work as well as group work in the form of final project reports or other learning activities with outcomes equivalent to a final project through logical, critical, systematic, and innovative thinking.
CPL-3	Able to self-manage learning and continuously develop oneself as a lifelong learner to compete at both national and international levels, to make a tangible contribution to problem-solving by implementing information and communication technology while also considering sustainability principles and understanding technology-based entrepreneurship.
CPL-4	Able to comprehend and apply knowledge of theoretical product design concepts, including fundamental design principles and aesthetics, material characteristics, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.
CPL-5	Able to understand and apply knowledge, insights, and expertise related to product design, including design history, design overview, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural aspects, economics and business, entrepreneurship, ethical codes, and intellectual property rights (IPR).
CPL-6	Able to design products and their systems, considering all influencing aspects, including fundamental design principles and aesthetics, material characteristics, function, user experience, ergonomics, design system engineering, technology, economic, environmental, socio-cultural, and market and business aspects.
CPL-7	Able to research issues, formulate, and publish design needs and solutions for the present or the future using relevant design and research methodologies.
CPL-8	Able and skilled in using design process tools, including manual and digital equipment, following technological advancements and the evolution of the times.
CPL-9	Able to present design concept ideas through verbal communication, visual media, and prototypes (models/mock-ups/prototypes) using various relevant technologies.



4.3 CPL relationship matrix with Graduate Profile

Table 4.4. Study Program Profile & CPL relationship matrix

Code	Deskripsi CPL Prodi	PL1	PL2	PL.3	PL.4
CPL-1	Able to demonstrate attitudes and character that reflect: devotion to the Almighty, ethics and integrity, noble manners, sensitivity and concern for social and environmental issues, respect for cultural diversity and diversity, upholding the rule of law, prioritizing the interests of the nation and the wider community, through creativity and innovation, excellence, strong leadership, synergy, and other potential to achieve optimal results.	√	√	√	√
CPL-2	Capable of assessing and applying knowledge and technology to apply it in the field of Product Design, and capable of making accurate decisions based on individual or group work in the form of final project reports or other learning activities that are equivalent to the final project through logical, critical, systematic, and innovative thinking.	√	√	√	√
CPL-3	Able to manage one's learning and develop oneself as a lifelong learner to compete at the national and international levels to make a real contribution to solving problems by implementing information and communication technology and considering sustainability principles, as well as understanding technology-based entrepreneurship.	√	√	√	√
CPL-4	Capable of understanding and applying knowledge of theoretical concepts in product design, including: basic principles of design and aesthetics, material characteristics, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, and market and business aspects.	√	√	√	√
CPL-5	Able to understand and apply knowledge, insights, and expertise related to product design, including: design history, design	√	√	√	√



	reviews, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural aspects, economics and business, entrepreneurship, ethics, and intellectual property rights.				
CPL-6	Able to design products and their systems, considering all influencing aspects, including: basic principles of design and aesthetics, material characteristics, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market, and business aspects.	√	√	√	√
CPL-7	Able to research problems, formulate and publish design requirements and solutions for the present and the future using relevant design and research methodologies.	√		√	√
CPL-8	Able and skilled in using design process aids, including manual or digital tools, following technological advancements.	√		√	√
CPL-9	Able to present design concept ideas through verbal communication, visual media, and prototypes using various relevant technologies.	√	√	√	√

4.4 Matrix of the relationship between Study Program CPL and Study Program Educational Objectives

Table 4.5. Matrix of the relationship between Study Program CPL and Study Program Educational Objectives

Kode	Deskripsi CPL Prodi	TPP-1	TPP-2	TPP-3	TPP-4	TPP-5
CPL-1	Able to demonstrate attitudes and character that reflect: devotion to the One Almighty God, ethics, and integrity, noble manners, sensitivity, and concern for social and environmental issues, appreciation for cultural diversity and diversity, upholding the rule of law, prioritizing the interests of the nation and the	√	√	√	√	√



	broader community, through creativity and innovation, excellence, strong leadership, synergy, and other potentials to achieve maximum results.					
CPL-2	Capable of assessing and utilizing knowledge and technology to apply them in the field of Product Design, as well as making accurate decisions from one's own work or group work in the form of a final project report or other equivalent learning activities through logical, critical, systematic, and innovative thinking.	√	√	√	√	√
CPL-3	Able to manage one's learning and develop oneself as a lifelong learner to compete at the national and international levels to make a real contribution to solving problems by implementing information and communication technology, considering sustainability principles, and understanding technology-based entrepreneurship.	√	√	√	√	√
CPL-4	Capable of understanding and applying knowledge about the theoretical concepts of product design, including: basic principles of design and aesthetics, material characteristics, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.	√	√	√	√	√
CPL-5	Able to understand and apply knowledge, insights, and expertise related to product design, including: design history, design reviews, design systems, behavior and lifestyle, environmental issues,	√	√	√	√	√



	technological developments, UI-UX design, socio-cultural aspects, economics and business, entrepreneurship, ethics, and intellectual property rights.					
CPL-6	Able to design products and their systems, considering all influencing aspects, including: basic principles of design and aesthetics, material characteristics, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.	√	√	√	√	√
CPL-7	Capable of researching problems, formulating and publishing design requirements and solutions for the present and future using relevant design and research methodologies.	√	√	√	√	√
CPL-8	Able and skilled in using design process aids, including manual or digital tools, following technological advancements.	√	√	√	√	√
CPL-9	Able to present design concept ideas through verbal communication, visual media, and prototypes using various relevant technologies.	√	√	√	√	√



5. Determining Study Materials

5.1 Body of Knowledge (BoK)

The field and expertise of product design combine creativity and knowledge, aiming to prepare individuals professionally as Product Designers. Industrial product design encompasses a strategic problem-solving process that fosters innovation and novelty, contributes to business success, and improves the quality of life by creating innovative products, systems, services, and experiences that benefit both consumers and industries. It emphasizes creative, analytical, and systematic thinking, translating user needs, aesthetics, and function optimization, as well as material use and selection, production capabilities, technological advancements, and value addition with consideration of social and economic environmental impacts. This is realized but not limited to a combination of form, material, color, flow, features, components, and others, whether in whole or modular, for subsequent production or replication through automated or manual processes, and may be registered as Industrial Design Intellectual Property.

In building expertise in product design that combines creativity and knowledge, there are five main components, namely:

1. Product Design: Carried out through the studio-based learning system, which is a unit of design activities that encompass various tasks, ranging from theoretical studies, exploration of creative ideas, formulation of design concepts, drawing practice, experimentation with product form and function, model product creation, as well as presentation and evaluation of the final design.
2. Product Design Theory Study: A comprehensive understanding of knowledge, theory, methodology, history, product design discourse, material culture studies, and lifestyle as a basis for conducting research in the field of product design.



3. Product Technology Application: The application of technological logic and multidisciplinary knowledge in product design, including human factors, applied physics, material knowledge, production processes, and design systems.
4. Digital Modeling, Prototyping, Design Protection, and Technology Application, among others, in the creative problem-solving process of design.
5. Humanities Application: Applying a political-economic-social-cultural perspective to product users through utilizing humanities-related disciplines in product design, including design appreciation, perceptual psychology, aesthetics philosophy, lifestyle studies, marketing strategies, and design management.

The challenges faced and the abilities required by a designer, according to the 2019 design project book (pages 20-23), are as follows:

1. Analytical Ability: Designers must be able to view their creative work from the user's perspective, elaborate on the benefits of the design as perceived by the user, and consider the efficiency and effectiveness of the design in generating the desire for product or service utilization that aligns with their client's expectations.
2. Aesthetic Ability: Designers should be capable of creating aesthetic solutions that artistically capture the attention and motivate their clients and consumers according to the design's objectives. They should use their imagination to shape a sense of value based on prevailing norms and ethics.
3. Collaborative Skills: Designers must be able to communicate with clients, team members, and practitioners from various other professions to ensure that the design process and direction align accurately and effectively with its goals. Designers should collaborate with professionals from different disciplines and practices as required to enhance and complement the final design outcome, making it more meaningful and beneficial to the public.



4. Information and Communication Technology Proficiency: Most designers utilize specialized software to carry out their design work. Therefore, designers should consistently update their knowledge of various software technology developments, given the rapid technological advancements. This will simplify and expedite their work and often aligns with the output goals desired by clients and consumers.
5. Legal Awareness: During their professional activities, designers invariably engage in work processes and contractual relationships that are legally binding. These processes encompass activities such as creating intellectual property, tender preparations, and developing work contracts that encompass rights and obligations, quality standards, time and budget limitations, and software usage. Hence, designers must appropriately address legal issues related to their work.
6. Awareness of Human Nature: As they translate economic, political, social, and cultural advancements into cultural artifacts in science and technology, designers must regard humans as subjects, not objects. Thus, designers, as contributors to humanizing the overall development of science and technology, are essential to exploring various aspects of the human condition—both physical and psychological—since this is an integral component of the design process.
7. Innovative Aptitude: Designers must be capable of contemplating new approaches to communicate ideas to clients and users increasingly seeking novelty. Designers are deemed successful when they can develop designs that convey breakthroughs in meeting the needs and desires of clients and offer inspiration to clients and users.

Furthermore, in the field of product design, it has been agreed upon by the Indonesian Product Design Program Study Forum in the Indonesian Product Designer Association (ADPII) regarding the learning outcomes of bachelor graduates as per the document titled **"Qualifications and Professional Competency Standards for Indonesian Industrial Product Designers" Number: B-01.002/SK.01/ADPII/XI/2017**, as follows:



1. Article 8 regarding the Graduates Learning Outcomes at Level 6, which are:
 - 1) The learning outcomes of graduates at level 6, as referred to in Article (3) paragraph (4) of industrial product design programs conducted by formal higher education, adhere to the regulations established by the Government of the Republic of Indonesia.
 - 2) The formulation of graduate learning outcomes is the minimum criteria regarding statements of the qualifications and abilities of graduates of industrial product design programs, encompassing attitudes, knowledge, and skills.
 - 3) Skills, as referred to in paragraph (2), consist of general skills and specific skills.
 - 4) The qualifications and abilities of graduates of industrial product design programs, including attitudes in paragraph (2) and general skills in paragraph (3), adhere to the provisions set by the Government of the Republic of Indonesia.
 - 5) Knowledge, as mentioned in paragraph (2), represents the mastery of concepts, theories, methods, and/or philosophies within the field of industrial product design, systematically acquired through reasoning in the learning process, work experience, research, and/or community service related to education.
 - 6) Specific skills, as referred to in paragraph (3), are specialized work skills that every graduate must possess in line with the academic field of industrial product design.
2. Article 9 concerning the Standards of Knowledge for Level 6 Industrial Product Designers in Indonesia, states that:
 - 1) The minimum criteria for the Knowledge to be mastered by Industrial Product Designers as referred to in Article 7 paragraph (1) letter (a) for Level 6 includes knowledge about:
 - a. Methods used to discover opportunities, generate alternative ideas, and decide on selected ideas.



- b. Types of methods, processes, and approaches in design oriented towards:
 - i. Objects to create novelty.
 - ii. Specific commodity industry.
 - iii. Subjects (human factors) as individuals and within certain communities.
 - iv. Creativity.
- 2) Knowledge to support the mastery of the diversity of aspects that make a product valuable; including the analysis tools used, and explaining it formally and informatively as referred to in Article 7 paragraph (1) letter (b) for Level 6 includes knowledge about:
 - a. Theoretical concepts related to human factors.
 - b. Theoretical concepts related to decision analysis.
 - c. Theoretical concepts related to the diverse aspects beyond human factors that affect the value of a product.
 - d. Theoretical concepts supported by experience in presentation.
- 3) Knowledge as an insight into how a product and system are produced, as referred to in Article 7 paragraph (1) letter (c) for Level 6 is knowledge about the production system of a product as a commodity.
- 4) Knowledge as an insight into how products are developed, realized, and distributed, as referred to in Article 7 paragraph (1) letter (d) for Level 6 includes:
 - a. Knowledge formed through experience in product development based on industry and/or market considerations.
 - b. Theoretical concepts about product development methods.
 - c. Knowledge as insight into distributing ideas to the market.
- 5) Knowledge as an insight into how products and systems relate to environmental, social, and responsible design issues, as referred to in Article 7 paragraph (1) letter (e) for Level 6 includes knowledge about:
 - a. The basis of social change.



- b. Theoretical concepts that are fundamentally related to behavior measurement.
 - c. Theoretical concepts related to environmental issues.
- 6) Knowledge and linkage to the integrated aspects of a commodity product, as referred to in Article 7 paragraph (1) letter (f) for Level 6 includes knowledge that is insightful.
- 7) Basic knowledge or insight into material and production characteristics, as referred to in Article 7 paragraph (1) letter (g) for Level 6 includes material and production knowledge related to small and medium-scale industries and/or manufacturing-scale industries.
- 8) Insights and basic knowledge of the history and development of industrial product design, as referred to in Article 7 paragraph (1) letter (h) for Level 6 include:
- a. General history of industrial product design.
 - b. History of the development of industrial product design in the last 5 years.
 - c. History of industrial product design in a particular commodity.
- 9) Knowledge to support the ability to build a strategic perspective oriented towards commercial opportunities from design concepts to existing market sectors and their dynamics, as referred to in Article 7 paragraph (7) for Level 6 is insightful knowledge.
- 10) Knowledge for the ability in visual analysis and decision into wearable objects, as referred to in Article 7 paragraph (8) for Level 6 letters includes knowledge about:
- a. The basic study of visual objects with a focus on formal aspects.
 - b. The basic study of visual objects with a focus on human (subject) aspects.
 - c. The application of the theory of visual object study oriented towards formal aspects and human (subject) aspects as a visual analysis tool.
3. Article 10 on the Standards of Specific Skills for Level 6 Industrial Product Designers in Indonesia is as follows:



- 1) Skills to investigate, identify, integrate, and communicate various issues in industrial product design within an integrated framework, as referred to in Article 7, paragraph 2(a), include specific skills in:
 - a. Application of one qualitative research method with low complexity.
 - b. Abstraction of industrial product design issues in the form of diagrams.
 - c. Basics of using visual analysis tools.
- 2) Skills to produce informative ideas in two-dimensional and three-dimensional media as a means of communication between creators and their concepts, as referred to in Article 7, paragraph 2(b), include specific skills in:
 - a. Quality and value of the information in the generated alternative ideas.
 - b. Quantity of information and value of the alternative ideas generated.
- 3) Skills to express informative ideas in two-dimensional and three-dimensional media as a means of communication between creators and workgroups, as referred to in Article 7, paragraph 2(c), include specific skills in:
 - a. Expression of ideas in the form of alternatives and the development of alternatives through thumbnail sketches, quick sketches, and render sketches.
 - b. Relevant experience in selecting and using media and materials for expressing ideas.
- 4) Skills to represent ideas in accordance with international product drawing standards, as referred to in Article 7, paragraph 2(d), follow one of the international product drawing standards.
- 5) Skills to abstract the quality of generated ideas through writing and visual charts, as referred to in Article 7, paragraph 2(e), are demonstrated through a design portfolio.
- 6) Skills to use digital media, as referred to in Article 7, paragraph 2(f), involve mastering one software as a design tool.



Input regarding curriculum development by the Advisory Board:

1. The curriculum at ITS Surabaya's Product Design is already good but needs to be adjusted according to the issues of industrial and technological development.
2. The design studios in Product Design need to be tailored to individual interests and talents, and there is a need to enrich the elective courses in line with global industry challenges.
3. Higher education should focus on teaching (focus of learning, process of learning, and attributes of learning).
4. There is a need to strengthen Strategic Thinking and Design Thinking.
5. Adaptation of the implementation of Independent Learning in the Independent Campus initiative, while still maintaining the established Learning Outcomes.
6. The application of case-based methods or team-based projects in over 50% of each course will facilitate students in adapting to the professional world.
7. There is a need to consider the occupational map of the product designer profession in mapping graduate profiles and Learning Outcomes.

International Accreditation References related to the implementation of courses in the NASAD Handbook 2018-2019 are as follows:



N A S A D
Handbook
(2018-2019)
VIII A-B: p 97



Figure 5.1 Standardization of studies in course implementation
(source: Achmad Syarief, Seminar nasional Aliansi Desainer Produk
Industri Indonesia – ITSB 2019)

The scope of the study material is based on learning outcomes, including Attitudes and Values, Competence in the field of work, covering specific skills and general skills, Knowledge Mastery, and Rights and Responsibilities. Based on the elaboration of the main contents of the product designer's expertise as previously described, as well as following up on curriculum evaluations and the vision and mission of ITS, the ITS Product Design Study Program formulates the curriculum concept by considering a cluster of courses.

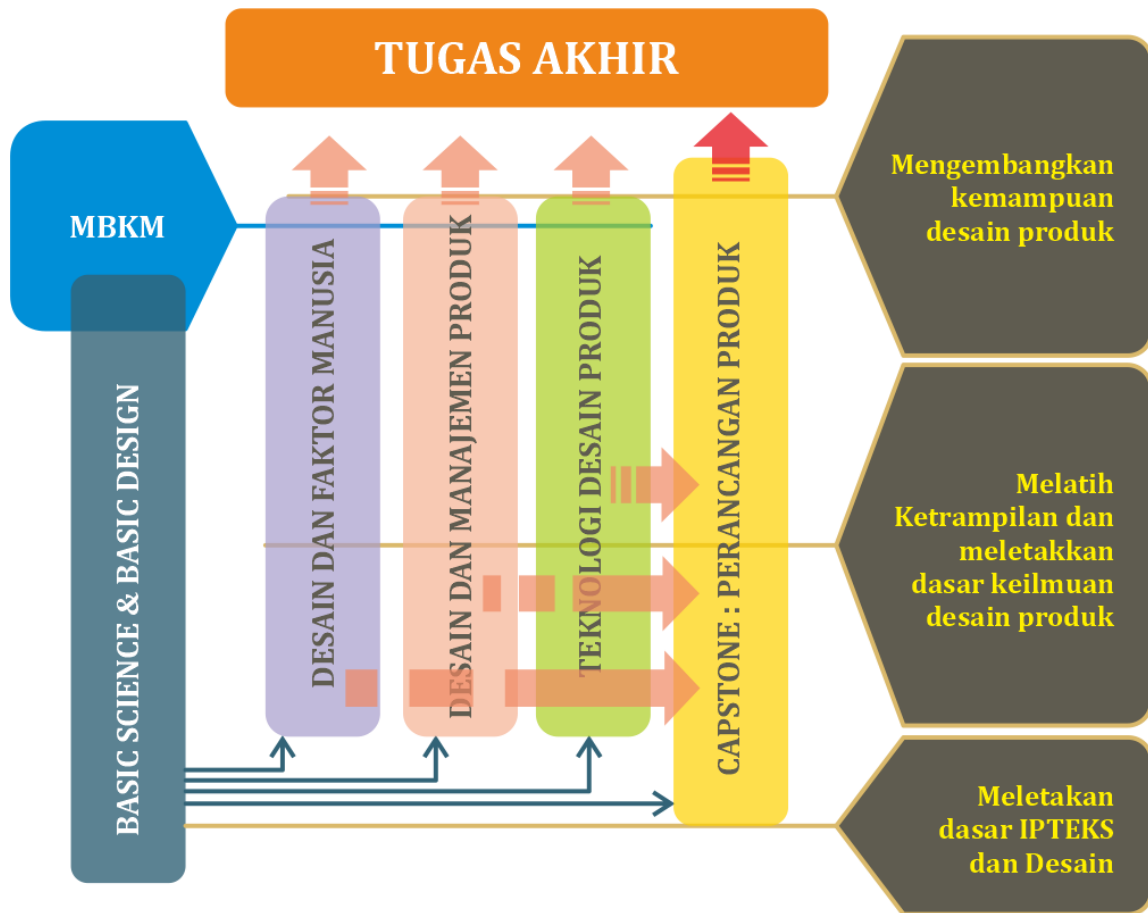


Figure 5.2 ITS Industrial Design Curriculum Concept 2023-2028

Based on the curriculum evaluation, the curriculum concept for the ITS Industrial Design in 2023-2028 enhances the study material based on the CPL descriptors distributed across clusters of courses while maximizing Independent Learning in the Independent Campus program. The existing clusters of courses have study materials that will be further maximized with the role of laboratories and fields of expertise, including:

1. Protomodel

Cluster of courses related to product design BK

- a. Product Design Studio 1
- b. Product Design Studio 2
- c. Product Design Studio 3
- d. Product Design Studio 4
- e. Prototype and Model



- f. Choice of Interest: Military Product
- g. Choice of Interest: Apparel
- h. Choice of Interest: Furniture
- i. Choice of Interest: Car Styling
- j. Choice of Interest: Jewelry
- k. Choice of Interest: Toys

2. Human Centered Design

Cluster of courses related to human centered design

- a. Design Basic 1
- b. Design Basic 2
- c. Product Drawing 1
- d. Product Drawing 2
- e. Technical Drawing
- f. Design Appreciation
- g. Interaction Design
- h. Design and Lifestyle
- i. Ergonomics
- j. Design History
- k. Product Creativity
- l. Design Thinking
- m. Product Semantics
- n. Choice of Interest: UX Design
- o. Choice of Interest: Design and Ethnography

3. Strategic Design Management

Cluster of courses related to design management and product entrepreneurship BK

- a. Product Creativity
- b. Presentation Technique
- c. Scientific Writing
- d. Design Management
- e. Profession Ethics



- f. Design Methodology
- g. Choice of Interest: Design Business and Marketing
- 4. Integrated Digital Design
 - Cluster of courses related to industrial design technology
 - a. Computer Aided Design 1
 - b. CAE and Rendering
 - c. CAM
 - d. Design System Engineering
 - e. Material and Manufacturing Process
 - f. Prototype and Model
 - g. Choice of Interest: Product Photography
 - h. Choice of Interest: Design and Metaverse
 - i. Choice of Interest: Medical Device

All four clusters of courses support the Final Assignment and their accompanying courses, namely:

- 1. Seminar
- 2. Internship
- 3. Pre-Final Assignment
- 4. Final Assignment

Study Materials Based on Course Clusters:

- 1. BK1 : Study Materials of Product Design
- 2. BK2 : Study Materials of Design and Human Factors
- 3. BK3 : Study Materials of Design Management and Product Business
- 4. BK4 : Study Materials of Product Design Technology



Table 5.1. Study Materials Based on Study Program CPL

CPL	Study Program CPL Description	Study Materials (BK)
CPL-1	Able to demonstrate an attitude and character that reflects: devotion to the Almighty God, ethics and integrity, noble conduct, sensitivity and concern for social and environmental issues, appreciation of cultural diversity and pluralism, upholding the rule of law, prioritizing the interests of the nation and the broader society, through creativity and innovation, excellence, strong leadership, synergy, and other potential qualities to achieve optimal results.	1. BK1: Study Materials of Product Design 2. BK2: Study Materials of Design and Human Factors 3. BK3: Study Materials of Design Management and Product Business 4. BK4: Study Materials of Product Design Technology
CPL-2	Capable of studying and utilizing knowledge and technology for the purpose of applying them to the field of Product Design, and able to make informed decisions based on individual or group work, in the form of a final task report or other equivalent learning activities, through logical, critical, systematic, and innovative thinking.	1. BK1: Study Materials of Product Design 2. BK2: Study Materials of Design and Human Factors 3. BK3: Study Materials of Design Management and Product Business 4. BK4: Study Materials of Product Design Technology
CPL-3	Capable of self-managing one's own learning and self-development as a lifelong learner to compete at the national and international levels, in order to make a real contribution to problem-solving by implementing information and communication technology and adhering to sustainability principles, as well as understanding technology-based entrepreneurship.	1. BK1: Study Materials of Product Design 2. BK2: Study Materials of Design and Human Factors 3. BK3: Study Materials of Design Management and Product Business 4. BK4: Study Materials of Product Design Technology
CPL-4	Capable of comprehending and applying knowledge of theoretical concepts in product design, encompassing: fundamental principles of design and aesthetics, material characteristics, functionality, user experience, ergonomics, system engineering in design, technology,	1. BK1: Study Materials of Product Design 2. BK2: Study Materials of Design and Human Factors 3. BK3: Study Materials of Design Management and Product Business



CPL	Study Program CPL Description	Study Materials (BK)
	economic factors, environmental and socio-cultural factors, market and business aspects.	4. BK4: Study Materials of Product Design Technology
CPL-5	Capable of comprehending and applying knowledge, insights, and expertise related to product design, including: design history, design overview, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural aspects, economics and business, entrepreneurship, ethical codes, and intellectual property rights.	1. BK1: Study Materials of Product Design 2. BK2: Study Materials of Design and Human Factors 3. BK3: Study Materials of Design Management and Product Business 4. BK4: Study Materials of Product Design Technology
CPL-6	Capable of designing products and their systems while considering all influencing aspects, including fundamental design principles and aesthetics, material characteristics, functionality, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.	1. BK1: Study Materials of Product Design 2. BK2: Study Materials of Design and Human Factors 3. BK3: Study Materials of Design Management and Product Business 4. BK4: Study Materials of Product Design Technology
CPL-7	Able to research issues, formulate, and publish design requirements and their solutions for the present or future using relevant design and research methodologies.	1. BK1: Study Materials of Product Design 2. BK2: Study Materials of Design and Human Factors 3. BK3: Study Materials of Design Management and Product Business 4. BK4: Study Materials of Product Design Technology
CPL-8	Capable and proficient in utilizing design process tools, encompassing both manual and digital equipment in accordance with technological advancements and contemporary developments.	1. BK1: Study Materials of Product Design 2. BK2: Study Materials of Design and Human Factors 3. BK3: Study Materials of Design Management and Product Business



CPL	Study Program CPL Description	Study Materials (BK)
		4. BK4: Study Materials of Product Design Technology
CPL-9	Able to present design concept ideas through verbal communication, visual media, and prototypes (models/mock-ups/prototypes) using various relevant technologies.	1. BK1: Study Materials of Product Design 2. BK2: Study Materials of Design and Human Factors 3. BK3: Study Materials of Design Management and Product Business 4. BK4: Study Materials of Product Design Technology

5.2 Study Materials Description

Table 5.2. Study Materials (BK)

Code	Study Materials (BK)	BK Description
BK-1	Study Materials of Product Design	Study materials related to the abilities and skills of students in the process and creation of products, commonly known as product design.
BK-2	Study Materials of Design and Human Factors	Study materials related to the general and specific abilities of students in understanding design studies, theory, methods, and human factors analysis.
BK-3	Study Materials of Design Management and Product Business	Study materials related to the ability and skill to understand product management and business aspects.
BK-4	Study Materials of Product Design Technology	Study materials that encompass skills and abilities related to technology in product design.



6. Course Formation and Credit (sks) Weight Determination

Table 6.1. Graduate Learning Outcomes (CPL) Compliance Matrix with Study Materials

CPL	Bahan kajian
CPL-1 Able to demonstrate an attitude and character that reflects: devotion to the Almighty God, ethics and integrity, noble conduct, sensitivity and concern for social and environmental issues, appreciation of cultural diversity and pluralism, upholding the rule of law, prioritizing the interests of the nation and the broader society, through creativity and innovation, excellence, strong leadership, synergy, and other potential qualities to achieve optimal results.	1.1. Character Education, Patriotism, and Nationalism (Citizenship and Pancasila) 1.2. Religion, Attitudes, and Social Humanities 1.3. Indonesian Language 1.4. English Language 1.5. Product Creativity 1.6. History of Design Development 1.7. Product Design Appreciation 1.8. Professional Ethics 1.9. Presentation Techniques and Academic Publishing Code of Ethics 1.10. Product Design
CPL-2 Capable of studying and utilizing knowledge and technology for the purpose of applying them to the field of Product Design, and able to make informed decisions based on individual or group work, in the form of a final task report or other equivalent learning activities, through logical, critical, systematic, and innovative thinking.	2.1. Product Design 2.2. Academic Writing 2.3. Design Methods 2.4. Internship - Practical Work
CPL-3 Capable of self-managing one's own learning and self-development as a lifelong learner to compete at the national and international levels, in order to make a real contribution to problem-solving by implementing information and communication technology and adhering to sustainability principles, as well as understanding technology-based entrepreneurship.	3.1. Product Design 3.2. Product Sketching 3.3. Design Methods 3.4. Product Semantics 3.5. Interaction Design 3.6. Presentation Techniques and Academic Publication Ethics 3.7. Product Design Appreciation 3.8. Product Design Specialization 3.9. Indonesian Language 3.10. English Language 3.11. Technology Applications and Digital Transformation 3.12. Marketing and Design Business 3.13. Technology-Based Entrepreneurship 3.14. Design Management 3.15. Professional Ethics 3.16. Internship - Practical Work
CPL-4 Capable of comprehending and applying knowledge of theoretical concepts in product design, encompassing: fundamental principles of	4.1. Product Design 4.2. Product Creativity 4.3. Design Thinking 4.4. Product Sketching



design and aesthetics, material characteristics, functionality, user experience, ergonomics, system engineering in design, technology, economic factors, environmental and socio-cultural factors, market and business aspects.	4.5. Technical Drawing 4.6. Design Fundamentals 4.7. Design Methods 4.8. Ergonomics and Human Factors 4.9. Product Semantics 4.10. Prototyping and Modeling 4.11. Materials and Processes 4.12. Digital Technology and Product Design (CAD, CAE, Rendering, and CAM) 4.13. Presentation Techniques and Academic Publication Ethics 4.14. Technology-Based Entrepreneurship 4.15. Seminar 4.16. Internship - Practical Work 4.17. Product Design Specialization 4.18. Design System Engineering
CPL-5 Capable of comprehending and applying knowledge, insights, and expertise related to product design, including: design history, design overview, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural aspects, economics and business, entrepreneurship, ethical codes, and intellectual property rights.	5.1. Product Design 5.2. Internship - Practical Work 5.3. Design Fundamentals 5.4. Design Methods 5.5. Design and Lifestyle 5.6. Product Semantics 5.7. Product Design Appreciation 5.8. Digital Technology and Product Design (CAD, CAE, Rendering, and CAM) 5.9. Design System Engineering 5.10. Design Management 5.11. Professional Ethics 5.12. Marketing and Product Business 5.13. Seminar
CPL-6 Capable of designing products and their systems while considering all influencing aspects, including fundamental design principles and aesthetics, material characteristics, functionality, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.	6.1. Product Design 6.2. Design System Engineering 6.3. Design Fundamentals 6.4. Product Semantics 6.5. Design Thinking 6.6. Materials and Processes 6.7. Ergonomics and Human Factors
CPL-7 Able to research issues, formulate, and publish design requirements and their solutions for the present or future using relevant design and research methodologies.	7.1. Product Creativity 7.2. Design Development History 7.3. Design Thinking 7.4. Academic Writing 7.5. Design Methods 7.6. Product Design Specialization 7.7. Product Design
CPL-8 Capable and proficient in utilizing design process tools, encompassing both manual and digital	8.1. Digital Technology and Product Design (CAD, CAE, Rendering, and CAM) 8.2. Product Design 8.3. Product Sketching



equipment in accordance with technological advancements and contemporary developments.	8.4. Design Fundamentals 8.5. Technical Drawing 8.6. Presentation Techniques, Ethical Codes, and Academic Writing 8.7. Technology Applications and Digital Transformation
CPL-9 Able to present design concept ideas through verbal communication, visual media, and prototypes (models/mock-ups/prototypes) using various relevant technologies.	9.1. Presentation Techniques 9.2. Ethical Codes and Academic Writing 9.3. Digital Technology and Product Design (CAD, CAE, Rendering, and CAM) 9.4. Materials and Processes 9.5. Product Creativity 9.6. Product Sketching 9.7. Design Fundamentals 9.8. Ergonomics and Human Factors 9.9. Product Design Specialization 9.10. Prototyping and Modeling 9.11. Product Design 9.12. Design System Engineering 9.13. Marketing and Product Business 9.14. Design Management 9.15. Internship - Practical Work 9.16. Seminar

Table 6.2. Formation of Course Subjects Based on Study Materials

Study Materials for Industrial Design	Elements of Study Materials	Course Subject
Product Design	Basic Theory of Model and Prototype Making	PROTOTYPE AND MODELING
	Introduction to Workshop Work	
	Use of Tools and Material Processing Machines	
	Making Low-Fidelity Models	
	Making High-Fidelity Models	
	Prototype Making	
Product Design	Introduction to Aesthetic and Functional Premise Design	PRODUCT DESIGN STUDIO 1
	Emphatized User	
	Research and Sourcing	
	Preliminary	
	Model & Design Refinement	
	Iteration Process	
	Design Development	
	Prototyping & Design Refinement	
	Final Collection & Presentation	



Product Design	Introduction to Design with Material Technology and Manufacturing Premise, Aesthetics, and Function	PRODUCT DESIGN STUDIO 2
	Empathized User	
	Research & Sourcing	
	Human Factor Analysis	
	Technology, Material, & Manufacturing Study	
	Reverse Engineering	
	Preliminary Design & Ideation	
	Lo-Fi Prototyping, Konfigurasi, Usability, Parts & Component Selection)	
	Product Evaluation and Iteration	
	Design Refinement	
	Production Analysis (Manufacturing Aspect)	
	Model , Mockup - Design Development	
	Presentation Drawings and Operational Drawings	
	Technical Drawings, Details, Anatomy, Assembly - Disassembly	
	Portfolio and Product Visual Presentation	
Product Design	Introduction to Design with Technology and System Engineering Premise, Material Technology and Manufacturing, Aesthetics, and Function	PRODUCT DESIGN STUDIO 3
	Empathized	
	Define , Research Sourcing	
	Ideation	
	Prototype Design	
	User Testing, Usability Testing	
	Design Driven Material Innovation	
	Design System Engineering - Design Development	
	Final Model, Presentation Drawings, and Operational Drawings	
	Portfolio and Product Visual Presentation	
Product Design	Introduction to Philosophy, Concepts, and Patterns/Ornamentation of Apparel/Textile Products	APPAREL – ELECTIVE COURSE
	Modification of Pattern/Ornamentation Design	
	Development of Textile-Based Product Design	
	Business Management in Apparel/Textile Products	
Product Design	Experimental Furniture	FURNITURE - ELECTIVE COURSE
	Technical Aspects of Furniture Design	
	Exploration and Innovative Furniture Design Ideas	



	Simulation and Evaluation of Furniture Product Design	
	Production Planning	
	Bill of Materials	
Product Design	The Role of Car Styling in Vehicle Value	CAR STYLING - ELECTIVE COURSE
	Morphological Form	
	Biomimicry	
	Persona-Image Board	
	Trendforecasting	
	Brand Identity - Brand Language	
	Brand Identity - Brand Building	
	Transformation of Form and DNA	
	Iconic, Signature & Archetype Studies	
	Syntactic Forming	
	Semantic Case Study	
	Aerodynamic Vs Diamond Cut	
	Minor Change & Major Change	
	Model Studies and Simple Case Studies in Car Styling	
Product Design	Collecting Attractive Objects for Use as Points of Interest in Jewelry Design	JEWELRY - ELECTIVE COURSE
	Processing Attractive Materials into Functional Materials for the Next Exploration Stage	
	Mechanism and Chains Systems in Jewelry as a Function of Structure and Decoration	
	Sketching and Drawing in the Arrangement of Standard Industrial Stone Shapes for Each Case	
	Exploring Jewelry Shapes and Motifs by Creating Alternative Jewelry Sketches (Pendants or Rings)	
	Evaluation of Alternative Sketch Tasks. Narrowing down to the final design to be modeled	
	Development of Selected Alternatives	
	Polymer Clay Jewelry	
	Jewelry Values	
	Design Variations	
	Popular Materials Over Time	
	Jewelry Inspiration	
	Basics of Configuration in Jewelry	
	Jewelry Trends	



	Fashion Coordination	
	Final Presentation of Jewelry Design	
Product Design	Introduction to Toy Design	TOYS - ELECTIVE COURSE
	Toy Product Categories	
	Designer Profiles and Their Works	
	Character-Persona Profile Descriptions	
	Image and Mood Board	
	Design Ideation	
	Design Development	
	Character Posters	
	Manual/Digital Modeling	
	Prototyping	
	Toy Design Portfolio	
Product Design	Introduction to Design with Economic, Socio-Cultural, Technology and System Engineering Premise, Material Technology and Manufacturing, Aesthetics, and Function	PRODUCT DESIGN STUDIO 4
	Product Planning	
	Design Requirements and Objectives	
	Conceptual Design	
	Preliminary Design	
	Basic Design - Platform	
	Alternative Design	
	Detailed Analysis - Design Development	
	Model Studies, Simulation, and Evaluation	
	Final Design	
	Visual Documentation and Design Presentation	
Product Design	Introduction to Military Product Design	MILITARI PRODUK - ELECTIVE COURSE
	Study of Military Equipment Activities and Human Factors	
	Joint Topic Determination	
	Reverse Engineering of Military Product Design from Reference Products	
	Study and Review of Existing Products	
	Military Product Materials	
	Technical Aspects of Military Products	
	Ergonomics of Military Products	
	Structure and Construction of Military Products	
	Knowledge of Military Product Specifications	



	Military Product Design Ideation and Sketching Low-Fidelity Alternative Military Product Models User Testing and Feedback from Military Users Design Evaluation Final Design Prototyping and Modeling	
Study of Design and Human Factors	Background of Development, Figures, and Characteristics of Design Styles in the Classic-Renaissance Era Background of Development, Figures, and Characteristics of Design Styles in the Industrial Revolution Era Background of Development, Figures, and Characteristics of Design Styles in the Art & Craft Movement Era Background of Development, Figures, and Characteristics of Design Styles in the Art Nouveau & Proto-Modernism Era Background of Development, Figures, and Characteristics of Design Styles in the Art Deco Era Background of Development, Figures, and Characteristics of Design Styles in the Modern Era Background of Development, Figures, and Characteristics of Design Styles in the Post-Modern Era European & Scandinavian Design Styles American Design Styles Asian Design Styles History of Design Development in Indonesia Development of Fashion, Apparel, and Jewelry Product Design Development of Furniture and Workstation Design Development of Transportation Facility Design Development of Appliance Product Design	DESIGN HISTORY
Study of Design and Human Factors	Principles of Design Thinking Ethnographic Design Research Stakeholder Analysis Interview Techniques Affinity Diagramming Stakeholder Mapping Lateral Thinking Brainstorming Idea Visualization Prototyping Testing	DESIGN THINKING



Study of Design and Human Factors	Product Drawing and Theory of Perspective	PRODUCT DRAWING 1
	Product Drawing and Theory of Light Direction and Shadow	
	Product Drawing and Hatching Techniques	
	Proportional Product Drawing	
	Constructive Product Drawing	
Study of Design and Human Factors	History, Development, Profession, and Figures of Product Design in General	DESIGN BASIC 1
	Normative Aesthetic Concepts and Theories	
	Two-Dimensional Visual Design Elements: Line, Size, Shape, Color, Texture	
	Three-Dimensional Visual Design Elements: Shadow, Volume, Mass, Depth	
	Basic Principles of Design: Repetition, Variation, Balance, Harmony, Proportion	
	Principles of Gestalt Theory	
	Two-Dimensional Art Composition	
	Three-Dimensional Art Composition	
	Basic Design 1: Logbook and Portfolio	
Study of Design and Human Factors	Compound Projection	TECHNICAL DRAWING
	Single-View Projection	
	Sectional Views	
	Detailed Drawing	
	Dimensional Notations and Hatching	
	Exploratory Sketches	
	Component Drawings	
	Material Specifications	
	Additional Views	
Study of Design and Human Factors	Product Rendering with Reflective Materials	PRODUCT DRAWING 2
	Product Rendering with Wood Material	
	Product Rendering with Textile Material	
	Texture Rendering	
	Human Proportion Drawing	
	Operational Product Drawing	
	Exploring Various Drawing Media	
	Posters and Visual Product Presentations	
Study of Design and Human Factors	Visual Design Elements: Line, Size, Shape, Color, Texture, Shadow, Volume, Mass, Depth	DESIGN BASIC 2



	Basic Design Principles: Repetition, Variation, Balance, Harmony, Proportion Material Character Exploration in Line with Defined Functional Aspects Introduction to Material Characteristics Design Process and Functional Aspects of Products in General Three-Dimensional Art Composition Designing Simple Products Basic Design 2: Logbook and Portfolio	
Study of Design and Human Factors	Description, Scope, Benefits, and Ergonomics Elements Physical Ergonomics (Anatomy, Posture, Anthropometry, Biomechanics, and Human Physical Characteristics) Cognitive Ergonomics (Perception, Memory, Visual, Thinking, Human-Machine Interaction, Reliability, Work Fatigue, and Usability Testing)	ERGONOMICS
Study of Design and Human Factors	Semiotic Theory Basics and Figures in Product Design Syntax, Semantics, Pragmatics Product Structure Ferdinand de Saussure's Dichotomy Charles Sanders Peirce's Triad Product Semantics Dimensions Emotional Semantics Empirical Semantics Cognate Semantics Contextual Semantics Functional Semantics Evaluative Semantics Cultural Semantics Semantics Differential and Product Development	PRODUCT SEMANTICS
Study of Design and Human Factors	Introduction to User Interaction Design Research and Sourcing User Interaction Goals User Interaction Design Development Process User Interaction Design Mock-Ups and Prototyping User Testing	INTERACTION DESIGN
Study of Design and Human Factors	Introduction to Product Appreciation Theories (Vitruvius and Aesthetics) The Theory of Good Design	DESIGN APPRECIATION



	Good Design vs. Iconic Design Product Structure and Contextual Products Postmodern Theory Product Values Interaction and Service Products Product Appreciation in Socio-Cultural Context Product Appreciation in Technology Context Product Appreciation in Economic Context Product Appreciation in Psychological Context Product Appreciation in Environmental Context Product Appreciation in Professional Ethics Context Publication of Product Appreciation Articles	
Study of Design and Human Factors	Terminology, Phenomena, Factors, Indicators, and Lifestyle Forms Elements and Major Lifestyle Aspects (Health, Environment, Technology, Social) Product Image (Products Emphasizing Lifestyle Values and Products Emphasizing Functional Values) Lifestyle as a Representation of Value in Product Innovation Development Taste Culture and Grid-Group Theory Lifestyle Issues and Their Relations in Design (e.g., the Role of Automation) Idea Generation Methods Based on Lifestyle Aspects Lifestyle Aspect Analysis in the Design Process Identifying Lifestyle Factors, Indicators, and Presenting Them in Verbal and Visual Data. Case Study Based User Persona Canvas, Value Proposition Canvas. Case Study Based Methods for Transforming Lifestyle Data/Information into Design Concepts Methods for Transforming Values into Design Innovation Features Methods for Transforming Values into Design Elements	DESIGN AND LIFESTYLE
Study of Design and Human Factors	Introduction to User Experience (UX) Design User Experience (UX) Design Development Process User Experience (UX) Design Prototyping	USER EXPERIENCE DESIGN - ELECTIVE COURSE
Study of Design and Human Factors	Theories and Principles of Ethnography in Product Design (Emphasize Phase, Human Behavior, and Persona)	DESIGN AND ETHNOGRAPHY - ELECTIVE COURSE



	Theories and Principles of Ethnography in Product Design (Local Genius, Indonesian Cultural Identity, Tradition Transformation) Methods of Ethnography in Product Design Application of Ethnography in Product Design	
Design Management and Product Business	Know Yourself Analogy Empathy Lateral Thinking Challenge Assumptions Understanding the Problem Mind Mapping Brainstorming SCAMPER & Morphological Chart Chindogu Random Input Crazy Eight Six Thinking Hats Creative Portfolio	PRODUCT CREATIVITY
Design Management and Product Business	Writing Scientific Articles Literature Review and Citation Ethical Scientific Writing Proposal Preparation	SCIENTIFIC WRITING
Design Management and Product Business	Definition and Position of Product Design in the Scientific Field and Its Historical Development Challenges in the Design Process Appreciation and Identification of Product Concepts Problem Solving Methods Design Thinking Problem Identification Brainstorming and Random Input Method Analysis in Idea Generation Emotional Design Analysis and the Four Pleasures User Testing and Prototyping Presentation and Communication Skills	DESIGN METHODOLOGY
	Short Presentation	



Design Management and Product Business	<i>Visual Presentation (Poster & Visual Documents)</i>	PRESENTATION TECHNIQUE
	<i>Long Presentation (Formal & Unformal)</i>	
	<i>Media Presentation (Video, Animation & Social Media)</i>	
Design Management and Product Business	Marketing Product Strategies	MARKETING AND DESIGN BUSINESS - ELECTIVE COURSE
	Market Analysis and Market Segmentation	
	Products, Branding, and Packaging	
	Pricing Strategy	
	Distribution and Channel Management	
	Promotion and Marketing Communications	
	Business Models and Business Plans	
	Business Design Case Studies	
	Business Ethics in Product Design	
Design Management and Product Business	Product Definition and Product Management	DESIGN MANAGEMENT
	Product Strategies and Product Lifecycle	
	Pricing, Brand, and Brand Strategy	
	Product Launch	
	Consumer Research	
	Questionnaire Methods and Data Processing	
	Canvas Model	
	Intellectual Property Rights (IPR): Patents	
	Intellectual Property Rights (IPR): Industrial Design	
	Intellectual Property Rights (IPR): Copyright	
Design Management and Product Business	Understanding Professional Ethics and the Importance of Understanding Ethics in Product Design Profession	PROFESSION ETHICS
	Basic Principles of Professional Ethics, such as Integrity, Professionalism, and Social Responsibility	
	Applicable Product Design Codes of Ethics in the Product Design Industry	
	Ethical Issues Frequently Faced by Product Designers, such as Plagiarism, Abuse of Power, and Conflicts of Interest	
	Social and Environmental Responsibilities of a Product Designer, including Respect for Others' Rights and Maintaining Confidentiality	
	Understanding and Recognizing the Rights and Responsibilities of a Product Designer towards the Public	
	Understanding and Recognizing the Rights and Responsibilities of a Product Designer towards the Profession They Uphold	



	Understanding Ethical Behavior in Carrying out Product Design Work and Respecting the Rights of Others Becoming an Ethical Product Designer in the Execution of Their Duties Producing Environmentally Friendly Products That Do Not Harm Society Understanding Copyright Holders' Rights and Respecting Those Rights in Using Others' Works and the Rights of Those Involved in the Product Production Process, Such as Workers and Suppliers Understanding and Considering Social and Cultural Factors in the Product Design Process Developing the Ability to Work Ethically in Teams and Collaborate with Colleagues	
Product Design Technology	Work Maps and Organize Diagrams Using Layer and Color Destination Methods Image Management and Attributes with Detail and Completeness Coordinates and Units of Measurement as Reference in Working Sheets Simple Object Drawings Furniture Product Drawings Apparel and Fashion Product Drawings Transportation Product Drawings Appliances Product Drawings	CAD
Product Design Technology	Material Properties Material Selection for Product Design Materials and Experiments Technology and Component Selection with Consideration for Material and Processes Material Process Technology (Molding, Casting, Bulk Forming, Sheet Forming, Rapid Prototyping, etc.)	MATERIAL & PROCESSES
Product Design Technology	Introduction to Software, Workflow Maps, and Usability Projections Preparing Images and Spatial Logic Organizing 2D Digital Images into 3D Images Drawing with Lines, Surface Exploration, and Reverse Techniques Drawing with Solid Geometry and Transformation Geometric Analysis Geometric Surface Development Use of Special Features: Flatten Surface, Orient, Flow Along Curve Geometric Logic, Assembly - Disassembly, Detailing Rendering Applications, Rendering Tools, and Generated Images	CAE & RENDERING



	Operational and Detailed Drawings Reverse Modeling Animation, Environments, and Supporting Properties/Parts Rendering Animation Manufacturing Logic, Manufacturing Documentation, and Presentation Documentation	
Product Design Technology	Introduction to Design and Technology Engineering Systems Form Development Methods in Products Basic Modularity System Theory Modularity System Engineering Basic Interchangeability System Theory Interchangeability System Engineering Basic Insight and Basic Operational Mechanical Engineering Trends in Mechanical Engineering and Product Utility Reference Product Research and Product Quality Matrix Engineering in Design Systems, Modification, Customization, and Open Source Engineering in Design Systems to Produce Alternatives, Product Lines, and Product Series Introduction to Value Chain Product Theory Sustainable Products (SDGs) Case Study of Simple Product Development with an Integrated System	DESIGN SYSTEM ENGINEERING
Product Design Technology	CNC Course Introduction, Software Workflow The Basics of the Manufacturing Process: 3D Drawings and G-code Concept of CNC Operation with Waterline Cutting Techniques and Implementation in Product Manufacturing Cutting Using G-code from Created Geometry. Ability to Operate CNC Machines, Position Materials on the Workplane, and Execute Them Continued Cutting Practice: Product 3D Geometry Assignment Tasks CNC 3-Axis Geometry Cutting Depth Rules. Task: G-code Product Geometry Meshcam Completion of CNC Final Project, Including Design, Material Selection, Software Operation, Material Placement, Cutting, Simple Molding, and Final Presentation Introduction to 3D Printing Idea Detailing and 3D Modeling	CAM



	Printing Tests	
	Integrated Digital Design for Project Product Development	
	Portfolio and Design Documents	
Product Design Technology	Indonesian Health Profile (Ministry of Health)	MEDICAL DEVICE - ELECTIVE COURSE
	Fractures, Healing, and Management Principles	
	Injury Surveillance Guidelines	
	Medical Device Product Development Process	
	Application of Product Design Methods to Medical Device Design	
	Digital Fabrication: Integrated Digital Design	
	Additive Manufacturing and Rapid Prototyping	
	Intellectual Property Rights (IPR) and Ethical Clearances	
Product Design Technology	Introduction to Innovation in the World of Digital Product Design	DESIGN AND METAVERSE - ELECTIVE COURSE
	Identification of Digital Innovation Components	
	Implementation of Digital Innovation	
	Presentation of Digital Innovation Results	
Product Design Technology	Foundations of Digital Photography	PRODUCT PHOTOGRAPHY - ELECTIVE COURSE
	Tools and Equipment for Product Photography	
	Basics of Lighting in Product Photography	
	Photography Techniques in Product Photography	
	Catalog Photography	
	Conceptual Photography	
Final Assignment- Internship	Internship Procedures	INTERNSHIP
	Administration and Verification	
	Internship Requirements and Conditions	
	Internship Ethics	
	Independent Work	
Final Assignment- Internship	Final Project Theme and Title Requirements	PRE FINAL ASSIGNMENT
	Background, Issues, Limitations, Scope, Objectives, Benefits	
	Literature Review	
	Research Methodology	
	Design Requirements Planning	
	Proposal Writing Guidelines	
	Writing Guidelines for Scientific Articles	
	Chapter 1 Report: Introduction	



Final Assignment- Internship	Chapter 2 Report: Literature Review	SEMINAR
	Chapter 3 Report: Methodology	
	Chapter 4 Report: Study and Analysis	
	Chapter 5 Report: Design Implementation	
	Chapter 6 Report: Conclusion	
	Colloquium 2	
	Colloquium 3	
	Colloquium 4	
	Commencement Ceremony	
Final Assignment- Internship	Colloquium 1	FINAL ASSIGNMENT
	Colloquium 2	
	Colloquium 3	
	Colloquium 4	

Study Materials of ITS General Course	Elements of Study Materials	Course Subject
General Lecture at ITS	Matrix Algebra Concepts	MATHEMATICS
	Real Number Systems	
	Functions and Graphs	
	Trigonometry	
	Differential/Calculus	
	Integral	
	Applications of Integrals	
	Geometry	
General Lecture at ITS	Academic Ethics	BAHASA INDONESIA
	Preference Techniques	
	Systematics, Environmental Style, and Indonesian Grammar Rules in Academic Papers	
	Effective Presentation	
General Lecture at ITS	The Nature and Challenges of Citizenship for the Nation's Future	CIVICS
	State: Constitution and Democracy	
	Identity and National Integration	
	Law Enforcement: Citizens' Rights and Obligations, and Human Rights	
	Anti-Corruption Education	



	Archipelago Insights and Regional Autonomy	
	National Resilience: The Country's Position in the Global Era and National Defense	
General Lecture at ITS	Digital Literacy Knowledge and Concepts	TECHNOLOGY APPLICATION AND DIGITAL TRANSFORMATION
	Theory of Systems Thinking and Information Transformation	
	Introduction to Science Technopark (STP)	
	Understanding ITS and National Research Roadmaps	
	The concept of SDGs (Sustainable Development Goals)	
	Open Source Technology and IT Ethics	
	Student Creative Program Proposal Concept (PKM)	
General Lecture at ITS	Building a Qur'anic Paradigm	ISLAMIC STUDIES
	Man's Need for God as a Spiritual Necessity	
	Integrating Faith, Islam, and Ihsan to Form Noble Morality	
	Religion Fosters Happiness	
	Incarnating Islam in Indonesia	
	Religious Moderation Achieves Unity in Diversity	
	Islamic Philanthropy: Zakat, Alms, and Endowments	
	The Role and Function of Mosques for the Welfare of the Community	
	Islam in the Face of Developments in Science, Technology, and the Arts	
	The Contribution of Islam to the Development of World Civilization	
General Lecture at ITS	The Urgency of Pancasila Education in Indonesia	PANCASILA
	Pancasila from the Perspective of Indonesian History	
	Pancasila as the Foundation of the State of the Republic of Indonesia	
	Pancasila as a Philosophy and State Ideology	
	Pancasila as an Ethical System and the Implementation of Pancasila Principles	
	Pancasila as the Fundamental Value for the Development of Science and Technology in Indonesia	
General Lecture at ITS	Reading Strategies: Scanning, Skimming, and Detailed Reading for Text Analysis	ENGLISH LANGUAGE
	Identifying Text Structures	
	Writing Sentences Using Phrases to Clauses	
	Cohesive Devices in Writing	
	Essay Writing	
	Applying Proper Academic Presentation Structures	
	Using Presentation Media Effectively	



General Lecture at ITS	Writing a Curriculum Vitae/Personal Profile Correctly and Attractively	TECHNOLOGY-BASED ENTREPRENEURSHIP
	Writing Job Applications Properly	
	Facing Job Interviews	
	Introduction to Technology and Business-Based Entrepreneurship	
	Recognizing Opportunities and Generating Business Ideas	
	Business Feasibility	
	Developing an Effective Business Model	
	Business Plan Structure	
	Marketing Management	
	Operational and HR Management	
	Financial Management	

Table 6.3. Determination of Credit Hours (sks) Weight for Courses

No	Course Subject (MK) Name	CPL charged to MK	CPL achievement indicator	Length of time to achieve CPL (in hours / sks)	Total (in hours / sks)	Conversion to sks
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	PRODUCT CREATIVITY	CPL-1 CPL-4 CPL-7 CPL-9	CPL-1.1 CPL-4.1 CPL-4.2 CPL-4.3 CPL-7.1 CPL-7.2 CPL-7.3 CPL-9.1 CPL-9.2 CPL-9.3	36 15 15 15 15 15 15 5 5 5	141	141/45.3 =3.1 rounding to = 3 sks
2	DESIGN HISTORY	CPL-1 CPL-7	CPL-1.1 CPL-1.2 CPL-1.3 CPL-1.4 CPL-7.1 CPL-7.2 CPL-7.3 CPL-7.4	10 10 10 10 20 20 20 20	150	150/45.3 =3.3 rounding to = 3 sks
3	DESIGN THINKING	CPL-4 CPL-6 CPL-7	CPL-4.1 CPL-4.2 CPL-6.1 CPL-6.2 CPL-6.3 CPL-7.1	12 12 10 10 10 14	96	96/45.3 =2.1 rounding to = 2 sks



			CPL-7.2 CPL-7.3	14 14		
4	PRODUCT DRAWING 1	CPL-3 CPL-4 CPL-8 CPL-9	CPL-3.1 CPL-4.1 CPL-4.2 CPL-8.1 CPL-8.2 CPL-9.1 CPL-9.2	60 30 30 30 30 30 30	240	240/45.3 =5.2 rounding to = 5 sks
5	BASIC DESIGN 1	CPL-5 CPL-8 CPL-9	CPL-5.1 CPL-5.2 CPL-5.3 CPL-5.4 CPL-5.5 CPL-8.1 CPL-8.2 CPL-8.3 CPL-8.4 CPL-8.5 CPL-9.1 CPL-9.2	20 20 20 20 20 25 25 25 25 25 10 10	245	245/45.3 =5.4 rounding to = 5 sks
6	MATHEMATICS	CPL-1 CPL-3	CPL-1.1 CPL-3.1 CPL-3.2	45 45 45	135	135/45.3 =2.98 rounding to = 3 sks
7	TECHNICAL DRAWING	CPL-4 CPL-8	CPL-4.1 CPL-4.2 CPL-4.3 CPL-4.4 CPL-8.1 CPL-8.2 CPL-8.3	20 20 20 20 20 20 20	140	140/45.3 =3.1 rounding to = 3 sks
8	ACADEMIC WRITING	CPL-1 CPL-2 CPL-4 CPL-7 CPL-8	CPL-1.1 CPL-1.2 CPL-1.3 CPL-1.4 CPL-1.5 CPL-2.1 CPL-2.2 CPL-2.3 CPL-2.4 CPL-4.1 CPL-4.2 CPL-4.3 CPL-4.4 CPL-7.1 CPL-7.2 CPL-8.1	2 2 2 2 2 10 10 10 10 3 3 3 3 5 5 30	94	94/45.3 =2.07 rounding to = 2 sks
9	PRODUCT DRAWING 2	CPL-3 CPL-4	CPL-3.1 CPL-4.1	90 25	225	225/45.3 = 4.97



		CPL-8	CPL-8.1	30		rounding to = 5 sks
			CPL-8.2	30		
			CPL-8.3	30		
		CPL-9	CPL-9.1	10		
			CPL-9.2	10		
10	BASIC DESIGN 2	CPL-4	CPL-4.1	20	220	220/45.3 =4.87 rounding to = 5 sks
			CPL-4.2	20		
			CPL-4.3	20		
			CPL-4.4	20		
			CPL-4.5	20		
		CPL-8	CPL-8.1	20		
			CPL-8.2	20		
			CPL-8.3	20		
			CPL-8.4	20		
			CPL-8.5	20		
		CPL-9	CPL-9.1	10		
			CPL-9.2	10		
11	DESIGN METHODS	CPL-2	CPL-2.1	6	149	149/45.3 =3,29 rounding to = 3 sks
			CPL-2.2	6		
		CPL-3	CPL-3.1	20		
			CPL-3.2	20		
		CPL-4	CPL-4.1	5		
			CPL-4.2	5		
			CPL-4.3	5		
			CPL-4.4	5		
			CPL-4.5	5		
		CPL-5	CPL-5.1	6		
			CPL-5.2	6		
			CPL-5.3	6		
			CPL-5.4	6		
		CPL-7	CPL-7.1	12		
			CPL-7.2	12		
			CPL-7.3	12		
			CPL-7.4	12		
12	ERGONOMICS	CPL-5	CPL-5.1	20	150	150/45.3 = 3,3 rounding to = 3 sks
			CPL-5.2	20		
		CPL-8	CPL-8.1	20		
			CPL-8.2	20		
			CPL-8.3	20		
			CPL-8.4	20		
		CPL-9	CPL-9.1	15		
			CPL-9.2	15		
13	PRODUCT SEMANTICS	CPL-1	CPL-1.1	3	149	149/45.3 =3,29 rounding to = 3 sks
			CPL-1.2	3		
			CPL-1.3	3		
			CPL-1.4	3		
			CPL-1.5	3		
		CPL-3	CPL-3.1	36		
			CPL-3.2	36		
		CPL-4	CPL-4.1	10		



		CPL-5	CPL-4.2 CPL-5.1 CPL-5.2 CPL-5.3	10 10 10 10		
		CPL-8	CPL-8.1 CPL-8.2	6 6		
14	PROTOTYPING AND MODELING	CPL-4 CPL-8 CPL-9	CPL-4.1 CPL-8.1 CPL-8.2 CPL-8.3 CPL-8.4 CPL-9.1 CPL-9.2 CPL-9.3	50 15 15 15 15 12 12 12	146	146/45.3 =3,23 rounding to = 3 sks
15	CAD (Computer-Aided Design)	CPL-4 CPL-8 CPL-9	CPL-4.1 CPL-8.1 CPL-8.2 CPL-8.3 CPL-9.1	20 20 20 20 60	140	140/45.3 =3.1 rounding to = 3 sks
16	PRODUCT DESIGN STUDIO 1	CPL-1 CPL-3 CPL-4 CPL-5 CPL-6 CPL-7 CPL-8 CPL-9	CPL-1.1 CPL-1.2 CPL-1.3 CPL-1.4 CPL-1.5 CPL-1.6 CPL-3.1 CPL-3.2 CPL-3.3 CPL-3.4 CPL-3.5 CPL-4.1 CPL-5.1 CPL-6.1 CPL-6.2 CPL-7.1 CPL-7.2 CPL-8.1 CPL-9.1	5 5 5 5 5 5 10 10 10 10 10 42 15 15 15 9 9 30 30	245	245/45.3 =5.4 rounding to = 5 sks
17	INTERACTION DESIGN	CPL-3 CPL-5 CPL-7	CPL-3.1 CPL-3.2 CPL-3.3 CPL-3.4 CPL-3.5 CPL-5.1 CPL-5.2 CPL-5.3 CPL-5.4 CPL-5.5 CPL-7.1 CPL-7.2	10 10 10 10 10 10 10 10 10 10 25 25	150	150/45.3 =3.31 rounding to = 3 sks



18	MATERIALS AND PROCESSES	CPL-4	CPL-4.1	20	140	140/45.3 =3.09 rounding to = 3 sks
		CPL-6	CPL-4.2	20		
			CPL-6.1	20		
			CPL-6.2	20		
			CPL-6.3	20		
			CPL-6.4	20		
		CPL-9	CPL-9.1	5		
			CPL-9.2	5		
			CPL-9.3	5		
			CPL-9.4	5		
19	DESIGN APPRECIATION	CPL-1	CPL-1.1	6	138	138/45.3 =3.05 rounding to = 3 sks
			CPL-1.2	6		
			CPL-1.3	6		
			CPL-1.4	6		
			CPL-1.5	6		
		CPL-3	CPL-3.1	60		
		CPL-5	CPL-5.1	12		
			CPL-5.2	12		
			CPL-5.3	12		
		CPL-8	CPL-8.1	6		
			CPL-8.2	6		
20	CAE (Computer-Aided Engineering) AND RENDERING	CPL-4	CPL-4.1	12	140	140/45.3 =3.09 rounding to = 3 sks
			CPL-4.2	12		
			CPL-4.3	12		
			CPL-4.4	12		
		CPL-5	CPL-5.1	6		
			CPL-5.2	6		
		CPL-8	CPL-8.1	20		
			CPL-8.2	20		
			CPL-8.3	20		
			CPL-8.4	20		
21	DESIGN SYSTEMS ENGINEERING	CPL-3	CPL-3.1	10	147	147/45.3 =3.24 rounding to = 3 sks
			CPL-3.2	10		
		CPL-4	CPL-4.1	18		
			CPL-4.2	18		
		CPL-5	CPL-5.1	18		
			CPL-5.2	18		
		CPL-8	CPL-8.1	15		
			CPL-8.2	15		
		CPL-9	CPL-9.1	25		
22	PRODUCT DESIGN STUDIO 2	CPL-2	CPL-2.1	12	235	235/45.3 =5.18 rounding to = 5 sks
		CPL-4	CPL-4.1	40		
			CPL-4.2	40		
		CPL-5	CPL-5.1	25		
			CPL-6.1	12		
		CPL-6	CPL-6.2	12		
			CPL-6.3	12		
			CPL-8.1	12		
			CPL-8.2	12		
			CPL-8.3	12		



		CPL-9	CPL-9.1 CPL-9.2 CPL-9.3	22 22 22		
23	DESIGN AND LIFESTYLE	CPL-2 CPL-4 CPL-5	CPL-2.1 CPL-2.2 CPL-2.3 CPL-2.4 CPL-4.1 CPL-4.2 CPL-4.3 CPL-4.4 CPL-5.1 CPL-5.2	4 4 4 4 16 16 16 16 32 32	144	144/45.3 =3.18 rounding to = 3 sks
24	PRESENTATION TECHNIQUES	CPL-1 CPL-3 CPL-4 CPL-8 CPL-9	CPL-1.1 CPL-1.2 CPL-1.3 CPL-1.4 CPL-1.5 CPL-3.1 CPL-3.2 CPL-3.3 CPL-3.4 CPL-4.1 CPL-4.2 CPL-8.1 CPL-9.1 CPL-9.2	6 6 6 6 6 10 10 10 10 9 9 30 15 15	148	148/45.3 =3.27 rounding to = 3 sks
25	COMPUTER-AIDED MANUFACTURING (CAM)	CPL-4 CPL-8 CPL-9	CPL-4.1 CPL-8.1 CPL-9.1 CPL-9.2	60 100 20 20	200	200/45.3 =4.4 rounding to = 4 sks
26	PRODUCT DESIGN STUDIO 3	CPL-2 CPL-4 CPL-5 CPL-6 CPL-7 CPL-8 CPL-9	CPL-2.1 CPL-4.1 CPL-4.2 CPL-5.1 CPL-5.2 CPL-6.1 CPL-6.2 CPL-7.1 CPL-7.3 CPL-8.1 CPL-8.2 CPL-9.1 CPL-9.2	10 40 40 15 15 15 15 20 20 20 20 30 30	290	290/45.3 =6,40 rounding to = 6 sks
27	APPAREL DESIGN (ELECTIVE)	CPL-3 CPL-4	CPL-3.1 CPL-3.2 CPL-3.3 CPL-3.4 CPL-4.1 CPL-4.2	12 12 12 12 5 5	148	148/45.3 =3.27 rounding to = 3 sks



		CPL-5	CPL-4.3	5		
			CPL-5.1	20		
			CPL-5.2	20		
		CPL-6	CPL-6.1	15		
		CPL-7	CPL-7.1	15		
			CPL-7.2	15		
28	FURNITURE DESIGN (ELECTIVE)	CPL-4	CPL-4.1	45	150	150/45.3 =3.31 rounding to = 3 sks
			CPL-4.2	45		
		CPL-6	CPL-6.1	10		
			CPL-6.2	10		
		CPL-9	CPL-9.1	40		
29	CAR STYLING (ELECTIVE)	CPL-3	CPL-3.1	45	140	140/45.3 =3.09 rounding to = 3 sks
		CPL-4	CPL-4.1	10		
			CPL-4.2	10		
		CPL-5	CPL-5.1	15		
			CPL-5.2	15		
		CPL-8	CPL-8.1	15		
			CPL-8.2	15		
			CPL-8.3	15		
30	JEWELRY DESIGN (ELECTIVE)	CPL-4	CPL-4.1	15	150	150/45.3 =3,31 rounding to = 3 sks
			CPL-4.2	15		
			CPL-4.3	15		
		CPL-5	CPL-5.1	15		
			CPL-5.2	15		
		CPL-6	CPL-6.1	10		
			CPL-6.2	10		
			CPL-6.3	10		
		CPL-8	CPL-8.1	10		
			CPL-8.2	10		
			CPL-8.3	10		
		CPL-9	CPL-9.1	5		
			CPL-9.2	5		
			CPL-9.3	5		
31	TOY DESIGN (ELECTIVE)	CPL-4	CPL-4.1	12	140	140/45.3 =3.09 rounding to = 3 sks
			CPL-4.2	12		
			CPL-4.3	12		
			CPL-4.4	12		
			CPL-4.5	12		
		CPL-8	CPL-8.1	10		
			CPL-8.2	10		
			CPL-8.3	10		
			CPL-8.4	10		
			CPL-8.5	10		
		CPL-9	CPL-9.1	15		
			CPL-9.2	15		
32	MEDICAL DEVICES DESIGN (ELECTIVE)	CPL-5	CPL-5.1	24	148	148/45.3 =3.26 rounding to = 3 sks
			CPL-5.2	24		
		CPL-7	CPL-7.1	30		
			CPL-7.2	30		
		CPL-9	CPL-9.1	40		



33	INDONESIAN LANGUAGE	CPL-1 CPL-3	CPL-1.1 CPL-3.1	45 45	90	90/45.3 =1.99 rounding to = 2 sks
34	CIVIC EDUCATION	CPL-1 CPL-3	CPL-1.1 CPL-3.1	45 45	90	90/45.3 =1.99 rounding to = 2 sks
35	TECHNOLOGY APPLICATION AND DIGITAL TRANSFORMATION	CPL-1 CPL-3 CPL-8	CPL-1.1 CPL-3.1 CPL-8.1	45 45 45	135	135/45.3 =2.98 rounding to = 3 sks
36	ENRICHMENT; PRODUCT PLANNING	CPL-3 CPL-5 CPL-7	CPL-3.1 CPL-3.2 CPL-3.3 CPL-3.4 CPL-3.5 CPL-5.1 CPL-5.2 CPL-5.3 CPL-5.4 CPL-5.5 CPL-7.1 CPL-7.2	8 8 8 8 8 6 6 6 6 6 15 15	100	100/45.3 =2.20 rounding to = 2 sks
37	PRODUCT DESIGN STUDIO 4	CPL-3 CPL-4 CPL-5 CPL-6 CPL-7 CPL-8 CPL-9	CPL-3.1 CPL-3.2 CPL-3.3 CPL-3.4 CPL-4.1 CPL-4.2 CPL-4.3 CPL-5.1 CPL-5.2 CPL-5.3 CPL-6.1 CPL-6.2 CPL-6.3 CPL-6.4 CPL-7.1 CPL-7.2 CPL-7.3 CPL-8.1 CPL-8.2 CPL-9.1 CPL-9.2	15 15 15 15 30 30 30 20 20 20 20 10 10 10 10 10 10 10 10 10 10 10	320	320/45.3 =7.06 rounding to = 7 sks
38	USER EXPERIENCE DESIGN (ELECTIVE)	CPL-3 CPL-4 CPL-5	CPL-3.1 CPL-3.2 CPL-4.1 CPL-4.2 CPL-5.1	30 30 20 20 10	140	140/45.3 =3.09 rounding to = 3 sks



		CPL-6	CPL-5.2 CPL-6.1 CPL-6.2	10 10 10		
39	DESIGN AND METaverse (ELECTIVE)	CPL-3 CPL-4 CPL-5 CPL-7	CPL-3.1 CPL-3.2 CPL-3.3 CPL-4.1 CPL-4.2 CPL-4.3 CPL-5.1 CPL-5.2 CPL-5.3 CPL-7.1 CPL-7.2 CPL-7.3	20 20 20 10 10 10 10 10 10 10 10 10	150	150/45.3 = 3.31 rounding to = 3 sks
40	MILITARY PRODUCT DESIGN (ELECTIVE)	CPL-4 CPL-5 CPL-6 CPL-7	CPL-4.1 CPL-5.1 CPL-6.1 CPL-7.1	60 30 18 30	138	138/45.3 =3.04 rounding to = 3 sks
41	PRODUCT PHOTOGRAPHY (ELECTIVE)	CPL-5 CPL-8 CPL-9	CPL-5.1 CPL-8.1 CPL-9.1 CPL-9.2	36 70 20 20	146	146/45.3 = 3.22 rounding to = 3 sks
42	PRODUCT MARKETING AND BUSINESS (ELECTIVE)	CPL-3 CPL-5 CPL-9	CPL-3.1 CPL-3.2 CPL-5.1 CPL-5.2 CPL-5.3 CPL-5.4 CPL-5.5 CPL-9.1 CPL-9.2 CPL-9.3 CPL-9.4	25 25 10 10 10 10 10 12 12 12 12	148	148/45.3 = 3.27 rounding to = 3 sks
43	DESIGN AND ETHNOGRAPHY (ELECTIVE)	CPL-3 CPL-5 CPL-7 CPL-8 CPL-9	CPL-3.1 CPL-3.2 CPL-3.3 CPL-3.4 CPL-5.1 CPL-7.1 CPL-7.2 CPL-8.1 CPL-9.1	10 10 10 10 36 12 12 20 20	140	140/45.3 =3.09 rounding to = 3 sks
44	RELIGION	CPL-1 CPL-3	CPL-1.1 CPL-3.1	45 45	90	90/45.3 =1.99 rounding to = 2 sks
45	PANCASILA (State Philosophy)	CPL-1 CPL-3	CPL-1.1 CPL-3.1	45 45	90	90/45.3 =1.99 rounding to



						= 2 sks
46	ENGLISH LANGUAGE	CPL-1 CPL-3	CPL-1.1 CPL-3.1	45 45	90	90/45.3 =1.99 rounding to = 2 sks
47	TECHNOLOGY-BASED ENTREPRENEURSHIP	CPL-1 CPL-3 CPL-4	CPL-1.1 CPL-3.1 CPL-4.1	30 30 30	90	90/45.3 =1.99 rounding to = 2 sks
48	DESIGN MANAGEMENT	CPL-3 CPL-5 CPL-9	CPL-3.1 CPL-3.2 CPL-3.3 CPL-5.1 CPL-5.2 CPL-5.3 CPL-5.4 CPL-5.5 CPL-5.6 CPL-9.1 CPL-9.2 CPL-9.3	15 15 15 10 10 10 10 10 10 15 15 15	150	150/45.3 =3.3 rounding to = 3 sks
49	PROFESSIONAL ETHICS	CPL-1 CPL-3 CPL-5 CPL-6	CPL-1.1 CPL-1.2 CPL-1.3 CPL-3.1 CPL-3.2 CPL-5.1 CPL-5.2 CPL-5.3 CPL-5.4 CPL-6.1 CPL-6.2 CPL-6.3	12 12 12 15 15 6 6 6 6 3 3 3	99	99/45.3 =2.18 rounding to = 2 sks
50	INTERNSHIP	CPL-2 CPL-3 CPL-4 CPL-5 CPL-9	CPL-2.1 CPL-2.2 CPL-3.1 CPL-3.2 CPL-3.3 CPL-3.4 CPL-4.1 CPL-5.1 CPL-9.1 CPL-9.2 CPL-9.3 CPL-9.4	12 12 36 36 36 36 20 12 12 10 10 10	242	242/45.3 = 5.34 rounding to = 5 sks
51	PRE-FINAL ASSIGNMENT	CPL-4 CPL-5	CPL-4.1 CPL-4.2 CPL-5.1 CPL-5.2	8 8 8 8	104	104/45.3 =2.3 rounding to = 2 sks



		CPL-7	CPL-5.3 CPL-5.4 CPL-7.1 CPL-7.2 CPL-7.3 CPL-7.4 CPL-7.5	8 8 8 8 8 8 8		
		CPL-9	CPL-9.1 CPL-9.2	8 8		
52	SEMINAR	CPL-3	CPL-3.1 CPL-3.2	8 8	104	104/45.3 =2.3 rounding to = 2 sks
		CPL-4	CPL-4.1 CPL-4.2 CPL-4.3 CPL-4.4	8 8 8 8		
		CPL-5	CPL-5.1 CPL-5.2 CPL-5.3 CPL-5.4 CPL-5.5	8 8 8 8 8		
		CPL-9	CPL-9.1 CPL-9.2	8 8		
53	FINAL ASSIGNMENT	CPL-1	CPL-1.1	40	375	375/45.3 =8.3 rounding to = 8 sks
		CPL-2	CPL-2.1	40		
		CPL-3	CPL-3.1	40		
		CPL-4	CPL-4.1 CPL-4.2 CPL-4.3	15 15 15		
		CPL-5	CPL-5.1 CPL-5.2 CPL-5.3	15 15 15		
		CPL-6	CPL-6.1 CPL-6.2 CPL-6.3 CPL-6.4	10 10 10 10		
		CPL-7	CPL-7.1 CPL-7.1	20 20		
		CPL-8	CPL-8.1 CPL-8.2 CPL-8.3	15 15 15		
		CPL-9	CPL-9.1 CPL-9.2	20 20		



Table 6.3: CPL Matrix and New Subject Courses.

NO	SUBJECT COURSE NAME	CPL								
		1	2	3	4	5	6	7	8	9
SEMESTER 1										
1	PRODUCT CREATIVITY	√			√			√		√
2	DESIGN HISTORY	√						√		
3	DESIGN THINKING				√		√	√		
4	PRODUCT DRAWING 1			√	√				√	√
5	BASIC DESIGN 1					√			√	√
SEMESTER 2										
6	MATHEMATICS	√		√						
7	TECHNICAL DRAWING				√				√	
8	ACADEMIC WRITING	√		√	√			√	√	
9	PRODUCT DRAWING 2			√	√				√	√
10	BASIC DESIGN 2				√				√	√
SEMESTER 3										
11	DESIGN METHODS		√	√	√	√		√		
12	ERGONOMICS					√			√	√
13	PRODUCT SEMANTICS	√		√	√	√			√	
14	PROTOTYPES AND MODELS				√				√	√
15	COMPUTER-AIDED DESIGN (CAD)				√				√	√
16	PRODUCT DESIGN STUDIO 1	√		√	√	√	√	√	√	√
SEMESTER 4										
17	INTERACTION DESIGN			√		√		√		
18	MATERIALS AND PROCESSES				√		√			√
19	DESIGN APPRECIATION	√		√		√			√	



NO	SUBJECT COURSE NAME	CPL								
		1	2	3	4	5	6	7	8	9
20	COMPUTER-AIDED ENGINEERING (CAE) AND RENDERING				√	√			√	√
21	DESIGN SYSTEM ENGINEERING	√		√	√	√	√		√	√
22	PRODUCT DESIGN STUDIO 2		√		√	√	√		√	√
SEMESTER 5										
23	DESIGN AND LIFESTYLE		√		√	√				
24	PRESENTATION TECHNIQUES	√		√	√				√	√
25	COMPUTER-AIDED MANUFACTURING (CAM)				√		√		√	
26	PRODUCT DESIGN STUDIO 3		√		√	√	√	√	√	√
27	APPAREL DESIGN (ELECTIVE COURSE)			√	√	√	√	√		
28	FURNITURE DESIGN (ELECTIVE COURSE)				√		√			√
29	CAR STYLING (ELECTIVE COURSE)			√	√	√			√	
30	JEWELRY DESIGN (ELECTIVE COURSE)				√	√	√		√	√
31	TOY DESIGN (ELECTIVE COURSE)				√				√	√
32	MEDICAL EQUIPMENT DESIGN (ELECTIVE COURSE)					√		√		√
SEMESTER 6										
33	BAHASA INDONESIA	√		√						
34	CIVICS	√		√						
35	TECHNOLOGY APPLICATIONS AND DIGITAL TRANSFORMATION	√		√					√	
36	ENRICHMENT - PRODUCT PLANNING			√		√		√		



NO	SUBJECT COURSE NAME	CPL								
		1	2	3	4	5	6	7	8	9
37	PRODUCT DESIGN STUDIO 4			√	√	√	√	√	√	√
38	USER EXPERIENCE DESIGN (ELECTIVE COURSE)			√	√	√		√		
39	DESIGN AND THE METAVERSE (ELECTIVE COURSE)			√	√	√		√		
40	MILITARY PRODUCT DESIGN (ELECTIVE COURSE)				√	√	√	√		
41	PRODUCT PHOTOGRAPHY (ELECTIVE COURSE)					√			√	√
42	MARKETING AND BUSINESS IN DESIGN (ELECTIVE COURSE)			√		√				√
43	DESIGN AND ETHNOGRAPHY (ELECTIVE COURSE)			√	√	√	√	√	√	√
SEMESTER 7										
44	RELIGION	√		√						
45	PANCASILA	√		√						
46	ENGLISH LANGUAGE	√		√						
47	TECHNOLOGY-BASED ENTREPRENEURSHIP	√		√	√					
48	DESIGN MANAGEMENT			√		√				√
49	PROFESSIONAL ETHICS	√		√		√	√			
50	INTERNSHIP		√	√	√	√				√
51	PRE-FINAL ASSIGNMENT				√	√		√		√
SEMESTER 8										
52	SEMINAR			√	√	√				√



NO	SUBJECT COURSE NAME	CPL								
		1	2	3	4	5	6	7	8	9
53	FINAL ASSIGNMENT	√	√	√	√	√	√	√	√	√



7. Organization of Study Program Courses

Table 7.1. Matrix of Study Program Courses Organization for Industrial Design

SEMESTER	SKS	AMOUNT OF MK	AMOUNT OF MANDATORY MK SKS	AMOUNT OF ELECTIVE MK SKS
(1)	(2)	(3)	(4)	(5)
VIII	10	2	10	0
VII	20	8	20	0
VI	34	11	16	18
V	34	10	16	18
IV	20	6	20	0
III	20	6	20	0
II	18	5	18	0
I	18	5	18	0
Total	174	53	138	36

Notes:

The total credit units (sks) of mandatory courses (MK) amount to 138 sks, with mandatory elective courses to be completed over 2 semesters, totaling 6 SKS. Therefore, the total mandatory SKS for the Bachelor of Industrial Design is 144 SKS.



Table 7.2. Organization of Elective Courses in Industrial Design Program Study

SEM	CHOICE	MK CODE	MK NAME	AMOUNT OF ELECTIVE MK SKS
(1)	(2)	(3)	(4)	(5)
V	Option 1 / Odd Semester	DP234525	APPAREL	3
	Option 1 / Odd Semester	DP234526	FURNITURE	3
	Option 1 / Odd Semester	DP234527	CAR STYLING	3
	Option 1 / Odd Semester	DP234528	JEWELRY	3
	Option 1 / Odd Semester	DP234529	TOYS	3
	Option 1 / Odd Semester	DP234530	MEDICAL DEVICE	3
VI	Option 2 / Even Semester	DP234633	USER EXPERIENCE DESIGN	3
	Option 2 / Even Semester	DP234634	DESIGN AND METAVERSE	3
	Option 2 / Even Semester	DP234635	MILITARY PRODUCTS	3
	Option 2 / Even Semester	DP234636	PRODUCT PHOTOGRAPHY	3
	Option 2 / Even Semester	DP234637	MARKETING AND BUSINESS DESIGN	3
	Option 2 / Even Semester	DP234638	DESIGN AND ETHNOGRAPHY	3
Total			12	36

Notes:

- Elective courses can be taken provided that the preparatory stages have been completed.
- Mandatory elective courses must be completed for a total of 6 sks over 2 semesters, making the total earned credits for a bachelor's degree 144 sks.



- Elective 1 is scheduled for the organization of the fifth semester but can be taken starting from the third semester and any odd-numbered semester beyond that.
- Elective 2 is scheduled for the organization of the sixth semester but can be taken starting from the fourth semester and any even-numbered semester beyond that



Table 7.3. Arrangement of CPL Mapping for Industrial Design

CPL	NAMA MATA KULIAH/ BLOK KULIAH/ SEMI BLOK KULIAH									
	TAHUN KE -1		TAHUN KE-2		TAHUN KE-3		TAHUN KE-4			
	SEMESTER 1	SEMESTER 2	SEMESTER 3	SEMESTER 4	SEMESTER 5	SEMESTER 6	SEMESTER 7	SEMESTER 8		
CPL-1	Kreativitas Produk 3 SKS	Penulisan Ilmiah 2 SKS	Studio Desain Produk 1 5 SKS		Teknik Presentasi 3 SKS					Tugas Akhir 8 SKS
	Sejarah Desain 3 SKS		Semantika Product 3 SKS	Rekayasa Sistem Desain 3 SKS			Etika Profesi 2 SKS			
				Apresiasi Desain 3 SKS						
		Matematika 3 SKS				Aplikasi Teknologi dan Transformasi Digital 3 SKS	Agama 2 SKS			
						Kewarganegaraan 2 SKS	Pancasila 2 SKS			
						Bahasa Indonesia 2 SKS	Bahasa Inggris 2 SKS			
							Teknopreneur 2 SKS			
CPL-2			Metode Desain 3 SKS	Studio Desain Produk 2 5 SKS	Studio Desain Produk 3 6 SKS		Magang 5 SKS			Tugas Akhir 8 SKS
				CAM 4 SKS						Seminar 2 SKS
					Desain dan Gaya Hidup 3 SKS					



CPL	NAMA MATA KULIAH/ BLOK KULIAH/ SEMI BLOK KULIAH									
	TAHUN KE -1		TAHUN KE-2		TAHUN KE-3		TAHUN KE-4			
	SEMESTER 1	SEMESTER 2	SEMESTER 3	SEMESTER 4	SEMESTER 5	SEMESTER 6	SEMESTER 7	SEMESTER 8		
CPL-3	Gambar Produk 1 5 SKS	Gambar Produk 2 5 SKS	Studio Desain Produk 1 5 SKS	Studio Desain Produk 2 5 SKS	Teknik Presentasi 3 SKS	Studio Desain Produk 4 7 SKS	Magang 5 SKS	Tugas Akhir 8 SKS		
		Penulisan Ilmiah 2 SKS	Metode Desain 3 SKS	Rekayasa Sistem Desain 3 SKS	Apparel - Mk Pilihan 3 SKS	Desain Pengalaman Pengguna - Mk Pilihan 3 SKS	Etika Profesi 2 SKS	Seminar 2 SKS		
			Semantika Product 3 SKS	Apresiasi Desain 3 SKS	CarStyling - Mk Pilihan 3 SKS	Desain dan Metaverse - Mk Pilihan 3 SKS	Manajemen Desain 3 SKS			
				Desain Interaksi 3 SKS		Pemasaran dan Bisnis Desain - Mk Pilihan 3 SKS	Agama 2 SKS			
						Desain dan Etnografi Mk - Pilihan 3 SKS	Pancasila 2 SKS			
						Product Planning - Pengayaan 3 SKS	Bahasa Inggris 2 SKS			
						Bahasa Indonesia 2 SKS	Teknopreneur 2 SKS			
						Kewarganegaraan 2 SKS				
						Aplikasi Teknologi dan Transformasi Digital 3 SKS				



CPL	NAMA MATA KULIAH/ BLOK KULIAH/ SEMI BLOK KULIAH															
	TAHUN KE -1				TAHUN KE-2		TAHUN KE-3		TAHUN KE-4							
	SEMESTER 1		SEMESTER 2		SEMESTER 3		SEMESTER 4		SEMESTER 5		SEMESTER 6		SEMESTER 7		SEMESTER 8	
CPL-4	Gambar Produk 1 5 SKS		Gambar Produk 2 5 SKS		Studio Desain Produk 1 5 SKS		Studio Desain Produk 2 5 SKS		Studio Desain Produk 3 6 SKS		Studio Desain Produk 4 7 SKS		Pra Tugas Akhir 2 SKS		Tugas Akhir 8 SKS	
	Kreativitas Produk 3 SKS		Dasar Desain 2 5 SKS		Metode Desain 3 SKS		Rekayasa Sistem Desain 3 SKS		Teknik Presentasi 3 SKS		Desain Pengalaman Pengguna - Mk Pilihan 3 SKS		Magang 5 SKS		Seminar 2 SKS	
	Design Thinking 2 SKS		Gambar teknik 3 SKS		CAD 3 SKS		CAE & Rendering 3 SKS		CAM 4 SKS		Desain dan Metaverse - Mk Pilihan 3 SKS		Teknopreneur 2 SKS			
			Penulisan Ilmiah 2 SKS		Prototipe & Model 3 SKS		Bahan & Proses 3 SKS		Desain dan Gaya Hidup 3 SKS		Militari Produk - Mk Pilihan 3 SKS					
					Semantika Product 3 SKS				Apparel - Mk Pilihan 3 SKS		Fotografi Produk - Mk Pilihan 3 SKS					
									Furniture - Mk Pilihan 3 SKS		Pemasaran dan Bisnis Desain - Mk Pilihan 3 SKS					
									CarStyling - Mk Pilihan 3 SKS		Desain dan Etnografi Mk - Pilihan 3 SKS					
									Perhiasan - Mk Pilihan 3 SKS							
									Toys- Mk Pilihan 3 SKS							



CPL	NAMA MATA KULIAH/ BLOK KULIAH/ SEMI BLOK KULIAH									
	TAHUN KE -1		TAHUN KE-2		TAHUN KE-3		TAHUN KE-4			
	SEMESTER 1	SEMESTER 2	SEMESTER 3	SEMESTER 4	SEMESTER 5	SEMESTER 6	SEMESTER 7	SEMESTER 8		
CPL-5	Dasar Desain 1 5 SKS		Studio Desain Produk 1 5 SKS	Studio Desain Produk 2 5 SKS	Studio Desain Produk 3 6 SKS	Studio Desain Produk 4 7 SKS	Pra Tugas Akhir 2 SKS	Tugas Akhir 8 SKS		
			Metode Desain 3 SKS	Rekayasa Sistem Desain 3 SKS	Desain dan Gaya Hidup 3 SKS	Desain Pengalaman Pengguna - Mk Pilihan 3 SKS	Magang 5 SKS	Seminar 2 SKS		
			Metode Desain 3 SKS	CAE & Rendering 3 SKS	Apparel - Mk Pilihan 3 SKS	Desain dan Metaverse - Mk Pilihan 3 SKS	Etika Profesi 2 SKS			
			Ergonomi 3 SKS	Apresiasi Desain 3 SKS	CarStyling - Mk Pilihan 3 SKS	Militari Produk - Mk Pilihan 3 SKS	Manajemen Desain 3 SKS			
				Desain Interaksi 3 SKS	Perhiasan - Mk Pilihan 3 SKS	Fotografi Produk - Mk Pilihan 3 SKS				
					Alat Kesehatan - Mk Pilihan 3 SKS	Pemasaran dan Bisnis Desain - Mk Pilihan 3 SKS				
						Desain dan Etnografi Mk - Pilihan 3 SKS				
						Product Planning - Pengayaan 3 SKS				



CPL	NAMA MATA KULIAH/ BLOK KULIAH/ SEMI BLOK KULIAH									
	TAHUN KE -1		TAHUN KE-2		TAHUN KE-3		TAHUN KE-4			
	SEMESTER 1	SEMESTER 2	SEMESTER 3	SEMESTER 4	SEMESTER 5	SEMESTER 6	SEMESTER 7	SEMESTER 8		
CPL-6	Design Thinking 2 SKS		Studio Desain Produk 1 5 SKS	Studio Desain Produk 2 5 SKS	Studio Desain Produk 3 6 SKS	Studio Desain Produk 4 7 SKS				
				Rekayasa Sistem Desain 3 SKS	CAM 4 SKS	Militari Produk - Mk Pilihan 3 SKS	Etika Profesi 2 SKS	Tugas Akhir 8 SKS		
				Bahan & Proses 3 SKS	Apparel - Mk Pilihan 3 SKS	Desain dan Etnografi Mk - Pilihan 3 SKS				
					Furniture - Mk Pilihan 3 SKS					
					Perhiasan - Mk Pilihan 3 SKS					
CPL-7	Kreativitas Produk 3 SKS		Studio Desain Produk 1 5 SKS	Desain Interaksi 3 SKS	Studio Desain Produk 3 6 SKS	Studio Desain Produk 4 7 SKS	Pra Tugas Akhir 2 SKS	Tugas Akhir 8 SKS		
	Sejarah Desain 3 SKS	Penulisan Ilmiah 2 SKS	Metode Desain 3 SKS		Apparel - Mk Pilihan 3 SKS	Desain Pengalaman Pengguna - Mk Pilihan 3 SKS				
	Design Thinking 2 SKS				Alat Kesehatan - Mk Pilihan 3 SKS	Desain dan Metaverse - Mk Pilihan 3 SKS				
						Militari Produk - Mk Pilihan 3 SKS				
						Desain dan Etnografi Mk - Pilihan 3 SKS				
						Product Planning - Pengayaan 3 SKS				



CPL	NAMA MATA KULIAH/ BLOK KULIAH/ SEMI BLOK KULIAH							
	TAHUN KE -1		TAHUN KE-2		TAHUN KE-3		TAHUN KE-4	
	SEMESTER 1	SEMESTER 2	SEMESTER 3	SEMESTER 4	SEMESTER 5	SEMESTER 6	SEMESTER 7	SEMESTER 8
CPL-8	Dasar Desain 1 5 SKS	Dasar Desain 2 5 SKS	Studio Desain Produk 1 5 SKS	Studio Desain Produk 2 5 SKS	Studio Desain Produk 3 6 SKS	Studio Desain Produk 4 7 SKS		Tugas Akhir 8 SKS
	Gambar Produk 1 5 SKS	Gambar Produk 2 5 SKS	CAD 3 SKS	CAE & Rendering 3 SKS	CAM 4 SKS	Aplikasi Teknologi dan Transformasi Digital 3 SKS		
		Gambar teknik 3 SKS	Prototipe & Model 3 SKS	Rekayasa Sistem Desain 3 SKS	Teknik Presentasi 3 SKS	Fotografi Produk - Mk Pilihan 3 SKS		
		Penulisan Ilmiah 2 SKS	Semantika Product 3 SKS	Apresiasi Desain 3 SKS	CarStyling - Mk Pilihan 3 SKS	Desain dan Etnografi Mk - Pilihan 3 SKS		
			Ergonomi 3 SKS		Perhiasan - Mk Pilihan 3 SKS			
					Toys- Mk Pilihan 3 SKS			
CPL-9	Dasar Desain 1 5 SKS	Dasar Desain 2 5 SKS	Studio Desain Produk 1 5 SKS	Studio Desain Produk 2 5 SKS	Studio Desain Produk 3 6 SKS	Studio Desain Produk 4 7 SKS	Pra Tugas Akhir 2 SKS	Tugas Akhir 8 SKS
	Kreativitas Produk 3 SKS	Gambar Produk 2 5 SKS	CAD 3 SKS	CAE & Rendering 3 SKS	Teknik Presentasi 3 SKS	Fotografi Produk - Mk Pilihan 3 SKS	Manajemen Desain 3 SKS	Seminar 2 SKS
	Gambar Produk 1 5 SKS		Prototipe & Model 3 SKS	Rekayasa Sistem Desain 3 SKS	Furniture - Mk Pilihan 3 SKS	Pemasaran dan Bisnis Desain - Mk Pilihan 3 SKS	Magang 5 SKS	
			Ergonomi 3 SKS	Bahan & Proses 3 SKS	Perhiasan - Mk Pilihan 3 SKS	Desain dan Etnografi Mk - Pilihan 3 SKS		
					Toys- Mk Pilihan 3 SKS			
					Alat Kesehatan - Mk Pilihan 3 SKS			
						Dokumen Kurikulum - 114		



SEMESTER	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
VIII	Tugas Akhir 8 SKS	Seminar 2 SKS									
VII	Pra Tugas Akhir 2 SKS	Magang 5 SKS	Etika Profesi 2 SKS	Manajemen Desain 3 SKS		Agama 2 SKS	Pancasila 2 SKS	Bahasa Inggris 2 SKS	Teknopreneur 2 SKS		
VI	Studio Desain Produk 4 7 SKS	Desain Pengalaman Pengguna - Mk Pilihan 3 SKS	Desain dan Metaverse - Mk Pilihan 3 SKS	Militari Produk - Mk Pilihan 3 SKS	Fotografi Produk - Mk Pilihan 3 SKS	Pemasaran dan Bisnis Desain - Mk Pilihan 3 SKS	Desain dan Etnografi Mk - Pilihan 3 SKS	Product Planning - Pengayaan 3 SKS	Bahasa Indonesia 2 SKS	Kewarganegaraan 2 SKS	Aplikasi Teknologi dan Transformasi Digital 3 SKS
V	Studio Desain Produk 3 6 SKS	CAM 4 SKS	Teknik Presentasi 3 SKS	Desain dan Gaya Hidup 3 SKS	Apparel - Mk Pilihan 3 SKS	Furniture - Mk Pilihan 3 SKS	CarStyling - Mk Pilihan 3 SKS	Perhiasan - Mk Pilihan 3 SKS	Toys - Mk Pilihan 3 SKS	Alat Kesehatan - Mk Pilihan 3 SKS	
IV	Studio Desain Produk 2 5 SKS	CAE & Rendering 3 SKS	Bahan & Proses 3 SKS	Apresiasi Desain 3 SKS	Rekayasa Sistem Desain 3 SKS	Desain Interaksi 3 SKS					
III	Studio Desain Produk 1 5 SKS	CAD 3 SKS	Prototipe & Model 3 SKS	Metode Desain 3 SKS	Semantika Product 3 SKS	Ergonomi 3 SKS					
II	Dasar Desain 2 5 SKS	Gambar teknik 3 SKS	Gambar Produk 2 5 SKS	Penulisan Ilmiah 2 SKS		Matematika 3 SKS					
I	Dasar Desain 1 5 SKS	Kreativitas Produk 3 SKS	Gambar Produk 1 5 SKS	Sejarah Desain 3 SKS		Design Thinking 2 SKS					
		Kuliah Departemen	Kuliah Pengayaan								
		Kuliah umum ITS	Kuliah Bersama Fakultas								



8. Distribution of Courses Every Semester and CPL Assessment Scheduling - Specifically for Programs Oriented towards IABEE Accreditation

Table 8.1. List of Courses for Semester 1

No	MK Code	Subject Course (MK)	Theoretical	Practical	sks amount	MK Prerequisite
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	DP234101	PRODUCT CREATIVITY	1	2	3	
2	DP234102	DESIGN HISTORY	2	1	3	
3	DW234101	DESIGN THINKING	1	1	2	
4	DP234103	PRODUCT DRAWING 1	1	4	5	
5	DP234104	BASIC DESIGN 1	1	4	5	
Total Study Load for Semester 1			6	12	18	

Table 8.2. List of Courses for Semester 2

No	MK Code	Subject Course (MK)	Theoretical	Practical	sks amount	MK Prerequisite
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	SM234151	MATHEMATICS	3	0	3	
2	DP234205	TECHNICAL DRAWING	1	2	3	
3	DP234206	ACADEMIC WRITING	1	1	2	
4	DP234207	PRODUCT DRAWING 2	1	4	5	
5	DP234208	BASIC DESIGN 2	1	4	5	
Total Study Load for Semester 2			7	11	18	



Table 8.3. List of Courses for Semester 3

No	MK Code	Subject Course (MK)	Theoretical	Practical	sks amount	MK Prerequisite
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	DP234309	DESIGN METHODS	2	1	3	
2	DP234310	ERGONOMICS	2	1	3	
3	DP234311	PRODUCT SEMANTICS	2	1	3	
4	DP234312	PROTOTYPES AND MODELS	1	2	3	
5	DP234313	COMPUTER-AIDED DESIGN (CAD)	1	2	3	
6	DP234314	PRODUCT DESIGN STUDIO 1	1	4	5	
		TRANSPORTATION				
		WORKSTATION AND FURNITURE				
		APPAREL AND FASHION				
		APPLIANCES				
Total Study Load for Semester 3			9	11	20	

Table 8.4. List of Courses for Semester 4

No	MK Code	Subject Course (MK)	Theoretical	Practical	sks amount	MK Prerequisite
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	DP234415	INTERACTION DESIGN	2	1	3	
2	DP234416	MATERIALS AND PROCESSES	2	1	3	
3	DP234417	DESIGN APPRECIATION	2	1	3	
4	DP234418	COMPUTER-AIDED ENGINEERING (CAE) AND RENDERING	1	2	3	
5	DP234419	DESIGN SYSTEM ENGINEERING	1	2	3	
6	DP234420	PRODUCT DESIGN STUDIO 2	1	4	5	
		TRANSPORTATION				
		WORKSTATION AND FURNITURE				



	APPAREL AND FASHION				
	APPLIANCES				
Total Study Load for Semester 4		9	11	20	

Table 8.5. List of Courses for Semester 5

No	MK Code	Subject Course (MK)	Theoretical	Practical	sks amount	MK Prerequisite
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	DP234521	DESIGN AND LIFESTYLE	2	1	3	
2	DP234522	PRESENTATION TECHNIQUES	1	2	3	
3	DP234523	COMPUTER-AIDED MANUFACTURING (CAM)	1	3	4	
4	DP234524	PRODUCT DESIGN STUDIO 3	2	4	6	
		TRANSPORTATION				
		WORKSTATION AND FURNITURE				
		APPAREL AND FASHION				
		APPLIANCES				
CHOICE 1						
5	DP234525	APPAREL	1	2	3	
6	DP234526	FURNITURE	1	2	3	
7	DP234527	CAR STYLING	1	2	3	
8	DP234528	JEWELRY	1	2	3	
9	DP234529	TOYS	1	2	3	
10	DP234530	MEDICAL EQUIPMENT	1	2	3	
Total Study Load for Semester 5			12	22	34	



Table 8.6. List of Courses for Semester 6

No	MK Code	Subject Course (MK)	Theoretical	Practical	sks amount	MK Prerequisite
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	UG234912	BAHASA INDONESIA	2	0	2	
2	UG234913	CIVICS	2	0	2	
3	UG234916	TECHNOLOGY APPLICATIONS AND DIGITAL TRANSFORMATION	3	0	3	
4	DP234631	ENRICHMENT - PRODUCT PLANNING	2	0	2	
5	DP234632	PRODUCT DESIGN STUDIO 4	1	6	7	
		TRANSPORTATION				
		WORKSTATION AND FURNITURE				
		APPAREL AND FASHION				
		APPLIANCES				
CHOICE 2						
6	DP234633	USER EXPERIENCE DESIGN	2	1	3	
7	DP234634	DESIGN AND THE METAVERSE	3	0	3	
8	DP234635	MILITARY PRODUCT DESIGN	1	2	3	
9	DP234636	PRODUCT PHOTOGRAPHY	1	2	3	
10	DP234637	MARKETING AND BUSINESS IN DESIGN	1	2	3	
11	DP234638	DESIGN AND ETHNOGRAPHY	2	1	3	
Total Study Load for Semester 6			20	14	34	



Table 8.7. List of Courses for Semester 7

No	MK Code	Subject Course (MK)	Theoretical	Practical	sks amount	MK Prerequisite
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	RELIGION		2	0	2	
	UG234901	BUDDHISM				
	UG234902	HINDUISM				
	UG234903	ISLAM				
	UG234904	CATHOLICISM				
	UG234905	CONFUCIANISM				
	UG234906	CHRISTIANITY				
2	UG234911	PANCASILA	2	0	2	
3	UG234914	ENGLISH LANGUAGE	2	0	2	
4	UG234915	TECHNOLOGY-BASED ENTREPRENEURSHIP	2	0	2	
5	DP234739	DESIGN MANAGEMENT	1	2	3	
6	DP234740	PROFESSIONAL ETHICS	1	1	2	
7	DP234741	INTERNSHIP	0	5	5	
8	DP234742	PRE-FINAL ASSIGNMENT	1	1	2	
Total Study Load for Semester 7			11	9	20	

Table 8.8. List of Courses for Semester 8

No	MK Code	Subject Course (MK)	Theoretical	Practical	sks amount	MK Prerequisite
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	DP234843	SEMINAR	1	1	2	
2	DP234844	FINAL ASSIGNMENT	0	8	8	
		TRANSPORTATION				
		WORKSTATION AND FURNITURE				
		APPAREL AND FASHION				
		APPLIANCES				
Total Study Load for Semester 8			1	9	10	



Table 8.9. Course Distribution Matrix with CPL

NO	MK CODE	MK NAME	CPL-1	CPL-2	CPL-3	CPL-4	CPL-5	CPL-6	CPL-7	CPL-8	CPL-9
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
SEMESTER 1											
1	DP234101	PRODUCT CREATIVITY	1			3			3		3
2	DP234102	DESIGN HISTORY	4						4		
3	DW234101	DESIGN THINKING				2		3	3		
4	DP234103	PRODUCT DRAWING 1			1	2				2	2
5	DP234104	BASIC DESIGN 1					5			5	2
SEMESTER 2											
6	SM234151	MATHEMATICS	1		2						
7	DP234205	TECHNICAL DRAWING				4				3	
8	DP234206	ACADEMIC WRITING	5	4		4			2	1	
9	DP234207	PRODUCT DRAWING 2			1	1				3	2
10	DP234208	BASIC DESIGN 2				5				5	2
SEMESTER 3											
11	DP234309	DESIGN METHODS		2	2	5	4		4		
12	DP234310	ERGONOMICS					2			4	2
13	DP234311	PRODUCT SEMANTICS	5		2	2	3			2	
14	DP234312	PROTOTYPES AND MODELS				1				4	3
15	DP234313	COMPUTER-AIDED DESIGN (CAD)				1				3	1
16	DP234314	PRODUCT DESIGN STUDIO 1	6		5	1	1	2	2	1	1
SEMESTER 4											
17	DP234415	INTERACTION DESIGN			5		5		2		
18	DP234416	MATERIALS AND PROCESSES				2		4			4
19	DP234417	DESIGN APPRECIATION	5		1		3			2	
20	DP234418	COMPUTER-AIDED ENGINEERING (CAE) AND RENDERING				4	2			4	
21	DP234419	DESIGN SYSTEM ENGINEERING	2		2	2	2			2	1
22	DP234420	PRODUCT DESIGN STUDIO 2		1		2	1	3		3	3
SEMESTER 5											
23	DP234521	DESIGN AND LIFESTYLE		4		4	2				
24	DP234522	PRESENTATION TECHNIQUES	5		4	2				1	2
25	DP234523	COMPUTER-AIDED MANUFACTURING (CAM)				1				1	2
26	DP234524	PRODUCT DESIGN STUDIO 3		1		2	1	3	1	3	3



NO	MK CODE	MK NAME	CPL-1	CPL-2	CPL-3	CPL-4	CPL-5	CPL-6	CPL-7	CPL-8	CPL-9
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
27	DP234525	APPAREL DESIGN (ELECTIVE COURSE)			4	3	2	1	2		
28	DP234526	FURNITURE DESIGN (ELECTIVE COURSE)				2		2			1
29	DP234527	CAR STYLING (ELECTIVE COURSE)			1	2	2			3	
30	DP234528	JEWELRY DESIGN (ELECTIVE COURSE)				3	2	3		3	3
31	DP234529	TOY DESIGN (ELECTIVE COURSE)				5				5	2
32	DP234530	MEDICAL EQUIPMENT DESIGN (ELECTIVE COURSE)					2		2		1
SEMESTER 6											
33	UG234912	BAHASA INDONESIA	1		1						
34	UG234913	CIVICS	1		1						
35	UG234916	TECHNOLOGY APPLICATIONS AND DIGITAL TRANSFORMATION	1		1					1	
36	DP234631	ENRICHMENT - PRODUCT PLANNING			5		5		2		
37	DP234632	PRODUCT DESIGN STUDIO 4			4	3	3	4	3	2	2
38	DP234633	USER EXPERIENCE DESIGN (ELECTIVE COURSE)			2	2	2	2			
39	DP234634	DESIGN AND THE METAVERSE (ELECTIVE COURSE)			3	3	3		3		
40	DP234635	MILITARY PRODUCT DESIGN (ELECTIVE COURSE)				1	1	1	1		
41	DP234636	PRODUCT PHOTOGRAPHY (ELECTIVE COURSE)					1			1	2
42	DP234637	MARKETING AND BUSINESS IN DESIGN (ELECTIVE COURSE)			2		5				4
43	DP234638	DESIGN AND ETHNOGRAPHY (ELECTIVE COURSE)			4	1	2	1		1	1
SEMESTER 7											
44	UG23490X	RELIGION	1		1						
45	UG234911	PANCASILA	1		1						
46	UG234914	ENGLISH LANGUAGE	1		1						
47	UG234915	TECHNOLOGY-BASED ENTREPRENEURSHIP	1		1	1					
48	DP234739	DESIGN MANAGEMENT			3		6				3
49	DP234740	PROFESSIONAL ETHICS	3		2		4	3			
50	DP234741	INTERNSHIP		2	4	1	2				3



NO	MK CODE	MK NAME	CPL-1	CPL-2	CPL-3	CPL-4	CPL-5	CPL-6	CPL-7	CPL-8	CPL-9
(1)	(2)	(3)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
51	DP234742	PRE-FINAL ASSIGNMENT				2	4		5		2
SEMESTER 8											
52	DP234843	SEMINAR			2	4	5				2
53	DP234844	FINAL ASSIGNMENT	1	1	1	3	3	4	2	3	2



Table 8.10. Distribution of Courses per Semester

Semester I				Semester II			
No	Kode	Mata Kuliah	Sks	No	Kode	Mata Kuliah	Sks
1	DP234101	Kreativitas Produk <i>Creativity of Product</i>	3	1	SM234151	Matematika <i>Mathematics</i>	3
2	DP234102	Sejarah Desain <i>Design History</i>	3	2	DP234205	Gambar teknik <i>Technical Drawing</i>	3
3	DW234101	Design Thinking <i>Design thinking</i>	2	3	DP234206	Penulisan Ilmiah <i>Scientific paper</i>	2
4	DP234103	Gambar Produk 1 <i>Drawing of Product 1</i>	5	4	DP234207	Gambar Produk 2 <i>drawing of Product 2</i>	5
5	DP234104	Dasar Desain 1 <i>Fundamental of Product Design 1</i>	5	5	DP234208	Dasar Desain 2 <i>Fundamental of Product Design 2</i>	5
TOTAL			18	TOTAL			18
Semester III				Semester IV			
No	Kode	Mata Kuliah	Sks	No	Kode	Mata Kuliah	Sks
1	DP234309	Metode Desain <i>Design Methods</i>	3	1	DP234415	Desain Interaksi <i>Interaction Design</i>	3
2	DP234310	Ergonomi <i>Ergonomic</i>	3	2	DP234416	Bahan & Proses <i>Material & Process</i>	3
3	DP234311	Semantika Product <i>Product Design Semantics</i>	3	3	DP234417	Apresiasi Desain <i>Design Appreciation</i>	3
4	DP234313	Prototipe & Model <i>Prototype & Model</i>	3	4	DP234418	CAE & Rendering <i>CAE & Rendering</i>	3
5	DP234313	CAD <i>CAD Drawing</i>	3	5	DP234419	Rekayasa Sistem Desain <i>Design System Engineering</i>	3
6	DP234314	Studio Desain Produk 1 <i>Product Design Studio 1</i>	5	6	DP234420	Studio Desain Produk 2 <i>Product Design Studio 2</i>	5
TOTAL			20	TOTAL			20
Semester V				Semester VI			
No	Kode	Mata Kuliah	Sks	No	Kode	Mata Kuliah	Sks
1	DP234521	Desain dan Gaya Hidup <i>Design and Lifestyle</i>	3	1	UG234912	Bahasa Indonesia <i>Indonesian</i>	2
2	DP234522	Teknik Presentasi <i>Presentation Techniques</i>	3	2	UG234913	Kewarganegaraan <i>Civics</i>	2
3	DP234523	CAM <i>CAM</i>	4	3	UG234916	Aplikasi Teknologi dan Transformasi Digital <i>Technology Applications and Digital Transformation</i>	3
4	DP234524	Studio Desain Produk 3 <i>Product Design Studio 3</i>	6	4	DP234631	Product Planning - Pengayaan <i>Product Planning - Pengayaan</i>	2
5	DP234525	Apparel - Mk Pilihan <i>Apparel</i>	3	5	DP234632	Studio Desain Produk 4 <i>Product Design Studio 4</i>	7
6	DP234526	Furniture - Mk Pilihan <i>Furniture</i>	3	6	DP234633	Desain Pengalaman Pengguna - Mk Pilihan <i>User Experience Design</i>	3
7	DP234527	CarStyling - Mk Pilihan <i>Carstyling</i>	3	7	DP234634	Desain dan Metaverse - Mk Pilihan <i>Design & Metaverse</i>	3
8	DP234528	Perhiasan - Mk Pilihan <i>Jewelry</i>	3	8	DP234635	Militari Produk - Mk Pilihan <i>Military Product</i>	3
9	DP234529	Toys- Mk Pilihan <i>Toys</i>	3	9	DP234636	Fotografi Produk - Mk Pilihan <i>Product Photography</i>	3
10	DP234530	Alat Kesehatan - Mk Pilihan <i>Medical equipments</i>	3	10	DP234637	Pemasaran dan Bisnis Desain - Mk Pilihan <i>Marketing and Design Business</i>	3
TOTAL			34	11	DP234638	Desain dan Etnografi - Mk Pilihan <i>Design and Ethnography</i>	3
TOTAL			34	TOTAL			34
Semester VII				Semester VIII			
No	Kode	Mata Kuliah	Sks	No	Kode	Mata Kuliah	Sks
1	UG23490X	Agama <i>Religion</i>	2	1	DP234843	Seminar <i>Seminar</i>	2
2	UG234911	Pancasila <i>Pancasila</i>	2	2	DP234844	Tugas Akhir <i>Final Project Industrial Design</i>	8
3	UG234914	Bahasa Inggris <i>English lessons</i>	2				
4	UG234915	Teknopreneur <i>Technopreneur</i>	2				
5	DP234739	Manajemen Desain <i>Design Management</i>	3				
6	DP234740	Etika Profesi <i>Professional Ethics</i>	2				
7	DP234741	Magang <i>Internships</i>	5				
8	DP234742	Pra Tugas Akhir <i>Pre- Final Project Industrial Design</i>	2				
TOTAL			20	TOTAL			10
TOTAL SKS			174	TOTAL SKS WAJIB TEMPUH			144
TOTAL MK			53				



9. Learning Through MBKM

MBKM learning in accordance with Rector's Regulation No. 21 of 2021.

Merdeka Belajar–Kampus Merdeka (MB–KM) is the program in which learning processes are held outside of students' study programs both within ITS or outside of ITS (other universities). The learning programs on MB-KM consist of:

1. Learning in other Study Programs within ITS
2. Learning in same Study Programs outside of ITS
3. Learning in other Study Programs outside of ITS
4. Learning in non-university institutions

The scope of MB–KM activities consists of 8 (eight) learning activities which include:

1. Internship/Work Practice
2. Village Development/Thematic Student Study Service (KKN)
3. Student exchange
4. Humanitarian Project
5. Research
6. Entrepreneurship
7. Independent Study/Project
8. Teaching Assistance in Education Units



9.1 MBKM Activity

The Independent Learning - Independent Campus (*Merdeka Belajar - Kampus Merdeka*) policy is expected to respond to these demands. Independent Campus represents a form of autonomous and flexible higher education that fosters an innovative learning culture, unrestricted and tailored to students' needs. Its primary programs include the ease of opening new study programs, changes to the higher education accreditation system, the ease with which state universities can obtain legal entity status, and the right to study for three semesters outside the study program. Students are granted the freedom to take credit hours outside their study program. The three semesters consist of one semester for taking courses outside the study program and two for conducting learning activities outside the university.

Various forms of learning activities outside the university include internships or work practice in industries or other workplaces, conducting community service projects in villages, teaching at educational institutions, participating in student exchange programs, conducting research, engaging in entrepreneurial activities, creating independent studies or projects, and participating in humanitarian programs. All of these activities must be conducted under the guidance of lecturers. Independent Campus is expected to provide contextual field experiences to enhance students' overall competencies, making them job-ready or creating new job opportunities.

The learning process in the Independent Campus is a significant embodiment of student-centered learning, which is essential. Independent Campus learning provides challenges and opportunities for developing innovation, creativity, capacity, personality, and students' needs. It fosters independence in searching for and discovering knowledge through real-world conditions and field dynamics, such as competency requirements, real problems, social interactions, collaboration, self-management, performance expectations, targets, and achievements. Students' hard and soft skills will be



significantly strengthened through well-designed and implemented independent learning programs.

The goal of the *Merdeka Belajar - Kampus Merdeka* policy, particularly the "right to study for three semesters outside the study program," is to enhance graduates' competencies, including both soft and hard skills, better to prepare them for the demands of the current era. This prepares graduates to become future national leaders with strong personalities who excel. Experiential learning programs with flexible pathways are expected to facilitate students in developing their potential in line with their passions and talents.

Merdeka Belajar - Kampus Merdeka is one of the policies introduced by the Minister of Education and Culture, Nadiem Makarim. One of the programs within the *Merdeka Belajar - Kampus Merdeka* policy is the "Right to Study for Three Semesters Outside the Study Program." This program aligns with various regulations and legal foundations in higher education aimed at improving the quality of learning and the quality of higher education graduates. The legal basis for the implementation of the "Right to Study for Three Semesters Outside the Study Program" program includes the following:

1. Law Number 20 of 2003 concerning the National Education System.
2. Law Number 12 of 2012 concerning Higher Education.
3. Law Number 6 of 2014 concerning Villages.
4. Government Regulation Number 4 of 2014 concerning Higher Education Implementation and University Management.
5. Presidential Regulation Number 8 of 2012 concerning the National Qualifications Framework (KKNI).
6. Minister of Village, Development of Disadvantaged Regions, and Transmigration Regulation Number 11 of 2019 concerning the Priority Use of Village Funds in 2020.



7. Minister of Village, Development of Disadvantaged Regions, and Transmigration Regulation Number 16 of 2019 concerning Village Deliberation.
8. Minister of Village, Development of Disadvantaged Regions, and Transmigration Regulation Number 17 of 2019 concerning General Guidelines for Village Development and Empowerment.
9. Minister of Village, Development of Disadvantaged Regions, and Transmigration Regulation Number 18 of 2019 concerning General Guidelines for Village Community Assistance.
10. Rector's Regulation of Institut Teknologi Sepuluh Nopember No. 21 of 2021.

The Industrial Design Program fully supports the implementation of Independent Learning - Independent Campus (*Merdeka Belajar - Kampus Merdeka*) for students. Students can participate in Independent Learning - Independent Campus activities organized by the Ministry of Education and Culture (KEMENDIKBUD), the institute, or the faculty. These activities will be adjusted to the Program's Student Learning Outcomes (CPL Study Program) and can include additional competencies or support the achievement of the Program's Educational Objectives. Some examples of Independent Learning - Independent Campus activities that can be carried out include:

Table 9.1 MBKM Activities Conducted

No	MBKM Activity
1	Internship/ Work Practice: Product Design Internship, MSIB (Certified Internship and Independent Study)
2	Community Development/ Thematic Community Work Lecture:



	Thematic Community Service at ITS, ITS Service Program for the Nation, etc.
3	Student Exchange: IISMA (Indonesian International Student Mobility Awards), ITS Student Exchange with International Partner Campuses, Independent Student Exchange under ITS MOUs, etc.
4	Humanitarian Projects: ITS Service Program for the Nation, etc.
5	Research: Kedaireka, ITS Community Service, ITS Research, FDKBD MBKM Program, etc.
6	Entrepreneurial Activities: Independent Entrepreneurship, PKM (Student Creativity Program), Self-employed Entrepreneurship/ Start-ups recognized by the Institute, ITS Business Incubator Program, etc.
7	Independent Study/ Projects: MSIB (Certified Internship and Independent Study)
8	eaching Assistance at Educational Units: Teaching at the Ministry of Education and Culture, Teaching at ITS, ITS Teaching Assistants, etc.

Learning through the MBKM program in ITS Industrial Design follows a standard procedure involving converting mapped courses based on the proximity of CPL and the program's policies. The MBKM learning process in ITS Industrial Design follows the following steps:

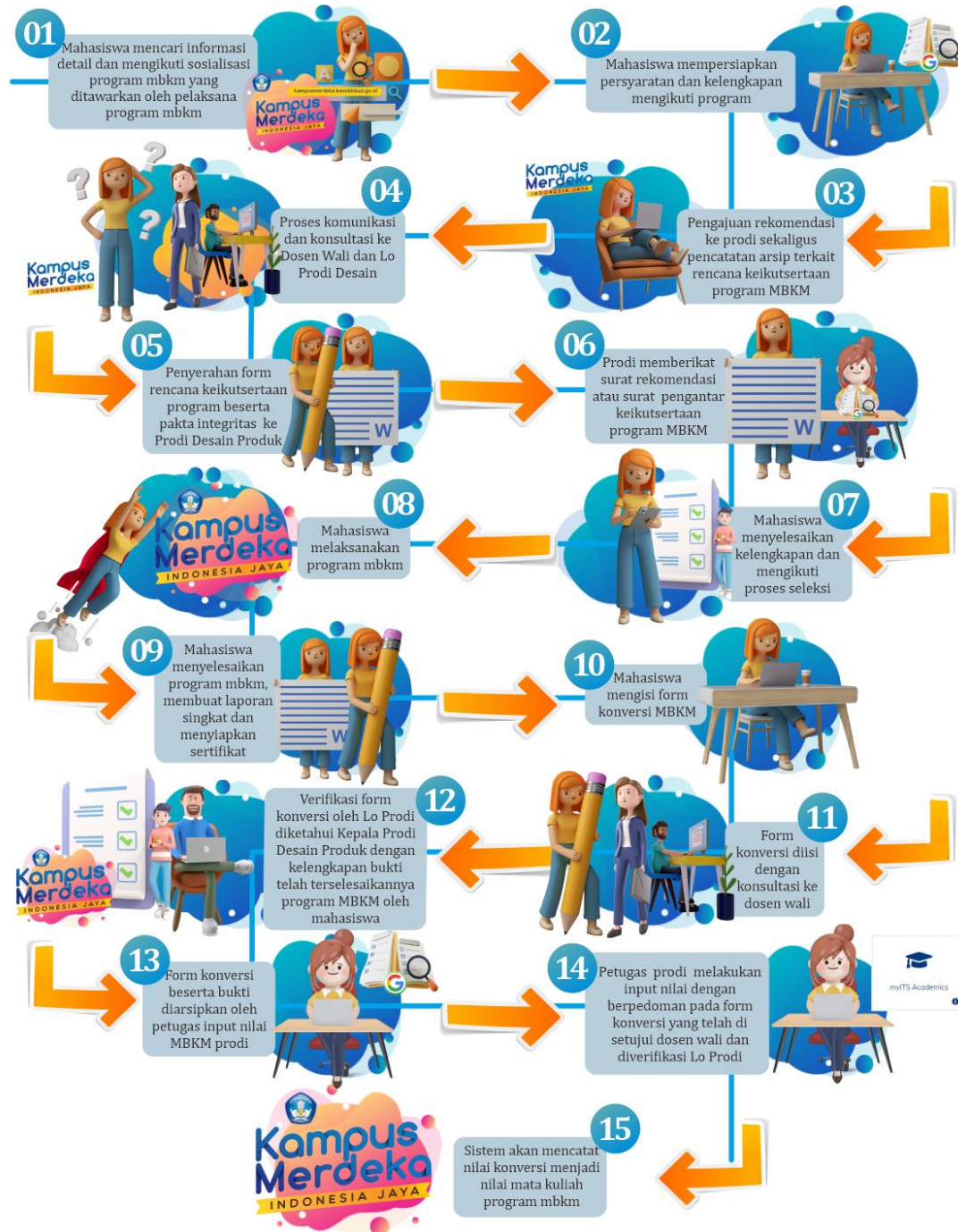


Figure 9.1. Flowchart of MBKM in ITS Industrial Design



1. Students search for detailed information and participate in socialization sessions for the MBKM program offered by the MBKM program implementers

As previously mentioned, the MBKM program is organized by various entities such as the Ministry of Education and Culture (KEMENDIKBUD), Institut Teknologi Sepuluh Nopember (ITS), and the Faculty of Creative Design and Digital Business. Therefore, students need to proactively seek detailed information regarding implementing programs that align with their interests, talents, and expertise. Various information can be accessed on the online platforms of Kampus Merdeka Kemendikbud, ITS, and the Faculty.

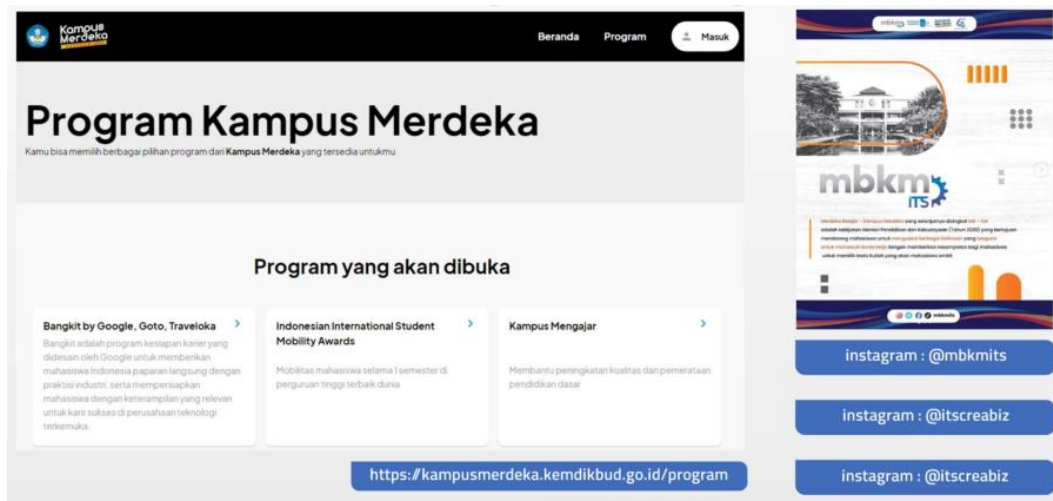


Figure 9.2. MBKM Information Access Page

2. Students prepare the requirements and necessary documents to participate in the program

Each MBKM program has its own regulations, requirements, and scope. Students are advised to understand the details of the activities and requirements provided or socialized by each MBKM program organizer.



3. Submission of recommendations to the study program as well as recording related archives regarding the participation plan in the MBKM program

In general, the MBKM program typically requires a letter of recommendation or a cover letter from the study program where the student is pursuing their studies. The Product Design Study Program at ITS has a policy that students obtain a letter of recommendation or a cover letter by accessing the following link: <https://linktr.ee/mhsdespro> and downloading the MBKM plan submission letter form. This form should be printed and discussed with the academic advisor before being submitted to the Product Design program staff.



Figure 9.3. Access Page for the MBKM Submission Form



Form Pendaftaran MBKM Dept. Desain Produk ITS

ariekrnm@gmail.com [Ganti akun](#)

Nama dan foto yang terkait dengan Akun Google Anda akan direkam saat Anda mengupload file dan mengirim formulir ini. Hanya alamat email yang Anda masukkan yang dapat menjadi bagian dari respons Anda.

* Wajib

Email *

Email Anda

Nama Lengkap Mahasiswa *

Jawaban Anda

NRP *

Jawaban Anda

PERHATIAN

Silakan download form di bawah ini, cetak dan ajukan ke TU Departemen Desain Produk untuk mendapatkan surat rekomendasi. Sebagai arsip silahkan di-upload kembali.

[Form Perencanaan MBKM](#)
[Pakta Integritas](#)
[Form Konversi Mata Kuliah MBKM](#)

Konversi Mata Kuliah dapat dilakukan saat kegiatan telah selesai dengan menyiapkan dokumen sertifikat, logbook dan laporan singkat. Sedangkan Skema/Peta konversi mata kuliah di Desain Produk dapat diakses [di sini](#)

Upload Form Perencanaan MBKM *

Tambahkan file

Upload Pakta Integritas *

Tambahkan file

Upload Form Konversi Mata Kuliah MBKM

Tambahkan file

Kirim

Kosongkan formulir

Figure 9.4. Access Page for MBKM Submission Archives

4. The process of communication and consultation with the Academic Advisor and the Head of the Industrial Design Study Program

Subsequently, students will initiate communication and consultation with their academic advisor regarding the MBKM program they intend to participate in. The academic advisor will grant approval on the MBKM form of the study program if it is deemed appropriate.

5. Submission of the program participation plan documents along with the integrity pact to the Industrial Design Department

The MBKM program participation plan form is then submitted to the department officer, along with the integrity pact, as a record and the student's commitment to completing the program if selected for the MBKM program they have chosen.





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DEPARTEMEN DESAIN PRODUK
Jalan Dago No. 1 Kampus ITS Sukolilo, Surabaya 60111
Telepon : + 6231 - 5931447, <http://www.dpspro.its.ac.id>, email: dpspro@its.ac.id

FORM PERENCANAAN MBKM

Form perencanaan MBKM Mahasiswa Desain Produk ITS Surabaya periode 20 ... / 20 ... pilih semester

Digunakan untuk mendapatkan rekomendasi dari Kepala Departemen Desain Produk sekaligus sebagai arsip departemen.

Nama Mahasiswa : klik atau tap di sini untuk menulis
NRP : klik atau tap di sini untuk menulis
Kontak (Whatsapp) : klik atau tap di sini untuk menulis
Nama Dosen Wali : pilih nama dosen wali
NIP Dosen Wali : pilih NIP di sini

Berencana mengikuti kegiatan MBKM:

Nama Kegiatan : klik atau tap di sini untuk menulis
Penyenggaraan Kegiatan : klik atau tap untuk masukkan tanggal
Uraian Deskripsi Kegiatan : klik atau tap di sini untuk menulis

Posisi dan Peran Mahasiswa dalam Kegiatan : klik atau tap di sini untuk menulis

Link Informasi Resmi Durasi Kegiatan : klik atau tap di sini untuk menulis jam^{*)}

Kategori Kegiatan : ☐ Pertukaran pelajar dengan Perguruan Tinggi Mitra ITS
☐ Magang industri bersertifikat
☐ Asistensi Mengajar (terkait dengan desain produk)
☐ KKN program nasional ke daerah
☐ Penelitian (bersama dosen, badan riset, Keldaireka, atau tugas akhir)
☐ Proyek Kemandirian atau Pengabdian Masyarakat
☐ Proyek independen
☐ Program Wirausaha dan Start-up Bisnis

Sifat Kegiatan : ☐ Tanpa Insentif
☐ Dengan Insentif
☐ Bersertifikat
☐ Berkelanjutan (setelah selesai kegiatan masih memberikan benefit kerjasama ke peserta)

Isian data terkait informasi yang tertera harus dapat dipertanggungjawabkan dan akan divalidasi oleh Liaison Officer (LO) MBKM Departemen Desain Produk.

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Telepon : + 6231 - 5931447, <http://www.dpspro.its.ac.id>, email: dpspro@its.ac.id

RENCANA KONVERSI MATA KULIAH

Konversi mata kuliah menjadi kebijakan departemen Desain Produk guna mendapatkan Capaian Pembelajaran Lulusan (CPL) sesuai dengan kurikulum departemen. Mahasiswa dapat melihat peta konversi mata kuliah sesuai dengan kategori mata kuliah konversi dan menyesuaikan dengan gambaran awal luaran kegiatan MBKM yang akan diikuti.

Luaran Kegiatan MBKM : klik atau tap di sini untuk menulis

Skill yang didapatkan : klik atau tap di sini untuk menulis

Mata kuliah yang diajukan untuk konversi :

Nama Mata Kuliah	SKS	Keterangan
klik atau tap di sini untuk menulis	angka sks	
klik atau tap di sini untuk menulis	angka sks	
klik atau tap di sini untuk menulis	angka sks	
klik atau tap di sini untuk menulis	angka sks	
klik atau tap di sini untuk menulis	angka sks	
Total SKS	0	

Kebijakan konversi menjadi keputusan departemen pada saat pengujian form konversi dengan mempertimbangkan bukti kegiatan berupa logbook, laporan singkat dan sertifikat.

Bersama ini dan lampiran pakta integritas, maka Form Perencanaan MBKM Departemen Desain Produk atas nama klik atau tap di sini untuk menulis untuk selanjutnya dapat digunakan sebagai syarat mengajukan rekomendasi ke kepala Departemen Desain Produk.

Surabaya, klik atau tap untuk masukkan tanggal
Mengetahui,
Menyetujui,
Dosen Wali Mahasiswa
Pilih nama dosen wali.

Mengetahui,
Liaison Officer MBKM Departemen
Arie Kurniawan, S.T., M.Ds.

^{*)} Lampirkan juga pakta integritas untuk mendapatkan rekomendasi

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Figure 9.5. MBKM Program Planning Form on the link <https://linktr.ee/mhsdespro>

6. The department issues a letter of recommendation or a participation endorsement letter for the MBKM program

The submission of the MBKM program participation plan form is a prerequisite for the department to issue a letter of recommendation or a participation endorsement letter for the MBKM program that the student is enrolled in.

7. The students complete the necessary requirements and participate in the selection process

Subsequently, the students prepare all the required documents for participation in the program, following the information and orientation provided for each MBKM program offered by the program's organizers.



8. The students engage in the MBKM program

If the students successfully pass the MBKM participant selection, it is expected that they will carry out the program effectively and to the best of their abilities. During the program's execution, students are encouraged to report their progress to their academic advisors, aiming to maximize the conversion of course credits. If it is deemed that the execution and outcomes of the MBKM program they are participating in do not fully meet the CPL required for course credit conversion, the academic advisor may assign additional tasks to approach the CPL of the courses to be converted.

9. The students complete the MBKM program, prepare a brief report, and generate certificate

Upon completion of the MBKM program, students are required to prepare a concise report and certificates that include the program's outcomes, the total hours of participation, and the grades achieved.

10. The students fill out the MBKM conversion form

If it is deemed that the documentation is complete, the students can then access the following link <https://linktr.ee/mhsdespro> to upload the MBKM conversion form. It is important to note that this link contains a course credit conversion guide for the students and academic advisors to use as a reference.





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Telepon: + 6231 - 5931147, <http://www.dagpro.its.ac.id>, email: dagpro@its.ac.id

FORM KONVERSI MATA KULIAH MBKM

Form konversi MBKM Mahasiswa Desain Produk ITS Surabaya periode 20 ... / 20 ... pilih semester

Digunakan untuk mendapatkan rekomendasi dari Kepala Departemen Desain Produk sekaligus sebagai arsip departemen.

Nama Mahasiswa : klik atau tap di sini untuk menulis
NRP : klik atau tap di sini untuk menulis
Kontak (Whatsapp) : klik atau tap di sini untuk menulis
Nama Dosen Wali : pilih nama dosen wali
NIP Dosen Wali : pilih NIP di sini

Berencana konversi kegiatan MBKM dengan mata kuliah

Nama Kegiatan : klik atau tap di sini untuk menulis
Penyelenggaraan Kegiatan : klik atau tap untuk masukkan tanggal
Uraian Deskripsi Kegiatan : klik atau tap di sini untuk menulis

Posisi dan Peran Mahasiswa dalam Kegiatan : klik atau tap di sini untuk menulis
Link Informasi Resmi :
Durasi Kegiatan : klik atau tap di sini untuk menulis jam^{*)}

Kategori Kegiatan : ☐ Pertukaran pelajar dengan Perguruan Tinggi Mitra ITS
☐ Magang industri bersertifikat
☐ Asistensi Mengajar (terkait dengan desain produk)
☐ KKN program nasional ke daerah
☐ Penelitian (bersama dosen, badan riset, Kodireka, atau tugas akhir)
☐ Proyek Kemurnasian atau Pengabdian Masyarakat
☐ Proyek Independen
☐ Program Wirausaha dan Start-up Bisnis

Sifat Kegiatan : ☐ Tanpa Insentif
☐ Dengan Insentif
☐ Bersertifikat
☐ Berkelanjutan (setelah selesai kegiatan masih memberikan benefit kerjasama ke peserta)

Isian data terkait informasi yang tertera harus dapat dipertanggungjawabkan dan akan divalidasi oleh Liaison Officer (LO) MBKM Departemen Desain Produk.

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RENCANA KONVERSI MATA KULIAH

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Luaran Kegiatan MBKM : klik atau tap di sini untuk menulis

Skill yang didapatkan : klik atau tap di sini untuk menulis

Mata kuliah yang diajukan untuk konversi :

Nama Mata Kuliah	SKS	Keterangan
klik atau tap di sini untuk menulis	angka sks	
klik atau tap di sini untuk menulis	angka sks	
klik atau tap di sini untuk menulis	angka sks	
klik atau tap di sini untuk menulis	angka sks	
klik atau tap di sini untuk menulis	angka sks	
Total SKS	0	

Kebijakan konversi menjadi keputusan departemen dengan mempertimbangkan bukti lampiran kegiatan berupa logbook, laporan singkat dan sertifikat.

Surabaya, klik atau tap untuk masukkan tanggal
Mengetahui,
Menyetujui,
Dosen Wali Mahasiswa
Liaison Officer MBKM Departemen

Pilih nama dosen wali. Arie Kurniawan, S.T., M.Ds.

*) Lampirkan logbook, laporan singkat, dan sertifikat sebagai syarat pengajuan konversi.

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Figure 9.5. MBKM Grade Conversion Form at the link <https://linktr.ee/mhsdespro>

11. The conversion form is filled out in consultation with the academic advisor

The conversion form is printed and completed with the academic advisor's approval. It is expected that the academic advisor will provide guidance on the course credit conversion in accordance with the Course Credit Conversion Map for Industrial Design at ITS.

12. Verification of the conversion form by the Study Program Lo, known by the Head of the Product Design Program, with the completion evidence of the student's MBKM program

The conversion form that has received the academic advisor's approval is then submitted to the department's staff and verified by the MBKM Study Program



Office, along with the attachment of the program report and certificates. The converted form is known and certified by the Head of the Product Design Program at ITS. For conversion of grades, the values stated on the certificate are used, subject to the approval of the academic advisor.

13. The conversion form, along with supporting evidence, is archived by the MBKM program's grade input officer

The approved conversion form, along with supporting evidence, becomes a part of the department's archives.

14. The program's staff input the grades based on the approved conversion form and after verification by the Study Program Lo

The program's staff enter the grades into the integrated ITS system, guided by the approved conversion form, which has passed the verification process by the academic advisor and the Study Program.

15. The system will record the converted grades as course grades

The grades will be converted into course grades in the student's academic records according to the values indicated on the conversion form.



9.2 MBKM Curriculum Structure

Table 9.1 MBKM Curriculum Structure

SEM												
8					FINAL ASSIGNMENT (8SKS)	SEMINAR (2SKS)						
7	RELIGION (2SKS)	PANCASILA (2SKS)	ENGLISH LANGUAGE (2SKS)	KEWIRAUSAHAAN BERBASIS TEKNOLOGI (2SKS)	PRA - FINAL ASSIGNMENT (2SKS)	DESIGN MANAGEMENT (3SKS)	PROFESSIONAL ETHICS (2SKS)	INTERNSHIP (5SKS)				
6		CIVICS (2SKS)	BAHASA INDONESIA (2SKS)	TECHNOLOGY APPLICATIONS AND DIGITAL TRANSFORMATION (3SKS)	PRODUCT DESIGN STUDIO 4 (7SKS)	ENRICHMENT (2SKS)	USER EXPERIENCE DESIGN (3SKS)	DESIGN AND THE METAVERSE (3SKS)	MILITARY PRODUCT (3SKS)	PRODUCT PHOTOGRAPHY (3SKS)	MARKETING AND BUSINESS IN DESIGN (3SKS)	DESIGN AND ETHNOGRAPHY (3SKS)
5			DESIGN AND LIFESTYLE (3SKS)	CAM (4SKS)	PRODUCT DESIGN STUDIO 3 (6SKS)	PRESENTATION TECHNIQUES (3SKS)	APPAREL (3SKS)	FURNITURE (3SKS)	CAR STYLING (3SKS)	JEWELRY DESIGN (3SKS)	TOYS DESIGN (3SKS)	MEDICAL EQUIPMENT DESIGN (3SKS)
4			DESIGN APPRECIATION (3SKS)	CAE & RENDERING (3SKS)	PRODUCT DESIGN STUDIO 2 (5SKS)	MATERIALS AND PROCESSES (3SKS)	INTERACTION DESIGN (3SKS)	DESIGN SYSTEM ENGINEERING (3SKS)				
3		PROTOTYPES AND MODELS (3SKS)	PRODUCT SEMANTICS (3SKS)	CAD (3SKS)	PRODUCT DESIGN STUDIO 1 (5SKS)	DESIGN METHODS (3SKS)	ERGONOMICS (3SKS)					
2		MATHEMATICS (3SKS)	ACADEMIC WRITING (2SKS)	TECHNICAL DRAWING (3SKS)	BASIC DESIGN 2 (5SKS)	PRODUCT DRAWING 2 (5SKS)						
1			DESIGN HISTORY (3SKS)	PRODUCT CREATIVITY (3SKS)	BASIC DESIGN 1 (5SKS)	PRODUCT DRAWING 1 (5SKS)	DESIGN THINKING (2SKS)					

Notes: One of the requirements for the MBKM program is that students must have completed the fifth (5th) semester, and only courses (MK) with a yellow color can be undertaken or converted through MBKM. Elective courses can only be converted if they have the same design subjects.



9.3 CPL MBKM

No (1)	Semester (2)	MK Code (3)	MK Name (4)	SKS (5)	CPL charged to MK (6)									Bentuk MBKM yang Ditetapkan (7)	Note (8)
					CPL- 1	CPL- 2	CPL- 3	CPL- 4	CPL- 5	CPL- 6	CPL- 7	CPL- 8	CPL- 9		
1	3	DP234309	DESIGN METHODS	3		1	1	1	1		1				
2	3	DP234310	ERGONOMICS	3					1			1	1		
3	3	DP234311	PRODUCT SEMANTICS	3	1		1	1	1			1			
4	3	DP234312	PROTOTYPES AND MODELS	3				1				1	1		
5	4	DP234415	INTERACTION DESIGN	3			1		1		1				
6	4	DP234416	MATERIALS AND PROCESSES	3				1		1			1		
7	4	DP234417	DESIGN APPRECIATION	3	1		1		1			1			
8	4	DP234419	DESIGN SYSTEM ENGINEERING	3	1		1	1	1	1		1	1		
9	5	DP234521	DESIGN AND LIFESTYLE	3		1		1	1						
10	5	DP234522	PRESENTATION TECHNIQUES	3	1		1	1				1	1		
11	5	DP234525	APPAREL DESIGN (ELECTIVE COURSE)	3			1	1	1	1	1				
12	5	DP234526	FURNITURE DESIGN (ELECTIVE COURSE)	3				1		1			1		
13	5	DP234527	CAR STYLING (ELECTIVE COURSE)	3			1	1	1			1			
14	5	DP234528	JEWELRY DESIGN (ELECTIVE COURSE)	3				1	1	1		1	1		
15	5	DP234529	TOY DESIGN (ELECTIVE COURSE)	3				1				1	1		
16	5	DP234530	MEDICAL EQUIPMENT DESIGN (ELECTIVE COURSE)	3					1		1		1		
17	6	UG234912	BAHASA INDONESIA	2	1	1	1								
18	6	UG234913	CIVICS	2	1	1	1								



No (1)	Semester (2)	MK Code (3)	MK Name (4)	SKS (5)	CPL charged to MK (6)									Bentuk MBKM yang Ditetapkan (7)	Note (8)
					CPL- 1	CPL- 2	CPL- 3	CPL- 4	CPL- 5	CPL- 6	CPL- 7	CPL- 8	CPL- 9		
19	6	UG234916	TECHNOLOGY APPLICATIONS AND DIGITAL TRANSFORMATION	3	1	1	1					1			
20	6	DP234633	USER EXPERIENCE DESIGN (ELECTIVE COURSE)	3	1		1	1	1		1				
21	6	DP234634	DESIGN AND THE METAVERSE (ELECTIVE COURSE)	3			1	1	1		1				
22	6	DP234635	MILITARY PRODUCT DESIGN (ELECTIVE COURSE)	3				1	1	1	1				
23	6	DP234636	PRODUCT PHOTOGRAPHY (ELECTIVE COURSE)	3					1			1	1		
24	6	DP234637	MARKETING AND BUSINESS IN DESIGN (ELECTIVE COURSE)	3			1		1				1		
25	6	DP234638	DESIGN AND ETHNOGRAPHY (ELECTIVE COURSE)	3	1		1		1		1	1			
26	7	UG23490X	RELIGION	2	1	1	1								
27	7	UG234911	PANCASILA	2	1	1	1								
28	7	UG234914	ENGLISH LANGUAGE	2	1	1	1								
29	7	UG234915	TECHNOLOGY-BASED ENTREPRENEURSHIP	2	1	1	1	1							
30	7	DP234739	DESIGN MANAGEMENT	3			1		1				1		
31	7	DP234740	PROFESSIONAL ETHICS	2	1		1		1	1					
32	7	DP234741	INTERNSHIP	5		1	1	1	1				1		
33	8	DP234843	SEMINAR	2			1	1	1						
Total sks				93											



10. Semester Learning Plan (RPS)

	INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code
SEMESTER LEARNING PLAN						
COURSE (MK)	CODE	MK CLUSTER	CREDIT (sks)		SEMESTER	Date of Compilation
PRODUCT CREATIVITY	DP234101	Design Management and Product Business	T=1	P=2	3	11 January 2023
AUTHORIZATION 	RPS Developer		RMK Coordinator		Head of Study Program	
	Ellya Zulaikha		Arie Kurniawan		Bambang Tristiono	
Learning Ourcomes (CP)	Study Program CPL charged to MK					
	CPL-4	Capable of comprehending and applying knowledge of theoretical concepts in product design, encompassing basic design principles and aesthetics, material characteristics, functionality, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.				
	CPL-7	Proficient in researching issues, formulating, and publishing design needs and solutions for the present or the future using relevant design and research methodologies.				
	CPL-9	Able to present design concept ideas through verbal communication, visual media, and prototypes (models/mock-ups/prototypes) using various relevant technologies.				
	Course Learning Outcomes (CPMK)					
	CPMK-1	Students are capable of applying various idea exploration techniques with divergent thinking to creatively and innovatively generate problem-solving ideas.				
	CPMK-2	Students are aware of various creative methods for gathering information as a source of design inspiration.				
	CPMK-3	Students can explore various creative ways to enhance the creative potential of each individual.				
	CPMK-4	Students can document and present the creative process both verbally (in writing and orally) and visually.				
		CPL Matrix – CPMK				



		CPMK	CPL-4	CPL-7	CPL - 9	
		CPMK-1	V	V	V	
		CPMK-2	V	V		
		CPMK-3	V	V	V	
		CPMK-4			V	
MK Description	The Creativity Course is a foundational course that includes effective techniques for accessing and utilizing information as a source of inspiration, divergent thinking, creative problem-solving in design, and strengthening aspects of aesthetic taste and sensitivity.					
Study Materials: Learning Materials	1. Self-awareness 2. Analogy 3. Empathy 4. Lateral thinking 5. Challenge Assumptions 6. Understanding the problem 7. Mind mapping 8. Brainstorming 9. SCAMPER & Morphological Chart 10. CHINDOGU 11. Random Input 12. Crazy Eight 13. Six thinking hats 14. Creative Portfolio					
References	Primary:					
	De Bono, E. (2015). <i>Serious creativity: How to be creative under pressure and turn ideas into action</i> . Random House					
	Secondary:					
	• De Bono, E. (2017). <i>Six thinking hats</i>. Penguin UK. • De Bono, E., & Zimbalist, E. (2010). <i>Lateral thinking</i>. Viking. • De Bono, E. (2008). <i>Creativity workout: 62 exercises to unlock your most creative ideas</i>. Ulysses Press. • Kahneman, D. (2011). <i>Thinking, fast and slow</i>. Macmillan.					
Assigned Lecturer	Ellya Zulaikha					



Required Courses		-					
Week of -	The final abilities of each learning stage (Sub-CPMK)	Evaluation		Learning Method, Teaching Method, Student Assignments (Time Estimation)		Learning Materials (References)	Weight (%)
		Indicator	Criteria and Form	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	The students are aware of the scope, regulations, and curriculum plan of the Product Creativity course. The students have the capacity to recognize themselves and their environment.	The students are mindful of the scope, regulations, and curriculum plan of the Product Creativity course. They recognize their own personalities and can effectively interact with their social environment.	Criteria: Precision Accuracy Proactive Form: Non-test	Form: Lecture SCL Duration: Theory 1 x 75" Responsi 1 x 75"		De Bono, E. (2015) De Bono, E. (2008) Kahneman, D. (2011).	6.25
2	The students are capable of applying Analogical techniques in the creative process.	The students are proficient in applying Analogical techniques in the creative process.	Criteria: Accuracy Creativity Form: Non-test Assignment	Form: Lecture Team Based Project Duration: Theory 1 x 75" Responsi 1 x 75"		De Bono, E. (2015) De Bono, E. (2008) Kahneman, D. (2011).	6.25
3	The students comprehend the theory of Empathy.	The students can aptly explain the theory of Empathy.	Criteria: Precision and insight Accuracy Form: Non-test	Form: Lecture Team Based Project Duration: Theory 1 x 50"		De Bono, E. (2015) De Bono, E. (2008) Kahneman, D. (2011).	6.25



			Assignment	Responsi 1 x 100"			
4	The students are able to apply idea exploration techniques, such as Lateral Thinking.	The students can accurately apply the idea exploration technique of Lateral Thinking.	Criteria: Quantity Creativity Innovation Form: Non-test Discussion Assignment	Form: Lecture Team Based Project Duration: Theory 1 x 50" Responsi 1 x 100"		De Bono, E. (2015) De Bono, E. (2008) Kahneman, D. (2011).	6.25
5	The students are able to apply idea exploration techniques, including Challenging Assumptions and Worst Possible Idea.	The students can correctly implement the idea exploration techniques of Challenging Assumptions and Worst Possible Idea.	Criteria: Quantity Creativity Innovation Form: Non-test Discussion Assignment	Form: Lecture Team Based Project Duration: Theory 1 x 75" Responsi 1 x 75"		De Bono, E. (2015) De Bono, E. (2008) Kahneman, D. (2011).	6.25
6	The students have the ability to identify issues within their environment. The students have the capability to discover alternative solutions to issues within their environment.	The students identify issues within their environment and are capable of finding alternative solutions to these issues based on their existing knowledge.	Criteria: Quantity Creativity Innovation Form: Non-test Discussion Assignment	Form: Lecture Team Based Project Duration: Theory 1 x 50" Responsi 1 x 100"		De Bono, E. (2015) De Bono, E. (2008) Kahneman, D. (2011).	6.25



7	The students are capable of applying the idea exploration technique of Mind Mapping.	The students can optimally apply the idea exploration technique of Mind Mapping.	Criteria: Quantity Accuracy Creativity Form: Non-test Discussion Assignment	Form: Lecture Team Based Project Duration: Theory 1 x 50" Responsi 1 x 100"		De Bono, E. (2015) De Bono, E. (2008) Kahneman, D. (2011).	6.25
8	The students have the ability to employ the idea exploration technique of Brainstorming.	The students can optimally apply the idea exploration technique of Mind Mapping.	Criteria: Quantity Accuracy Creativity Form: Non-test Discussion Assignment	Form: Lecture Team Based Project Duration: Theory 1 x 50" Responsi 1 x 100"		De Bono, E. (2015) De Bono, E. (2008) Kahneman, D. (2011).	6.25
9	The students can utilize the idea exploration techniques of SCAMPER and Morphological Chart.	The students can correctly apply the idea exploration technique of Mind Mapping.	Criteria: Quantity Creativity Innovation Form: Non-test Discussion Assignment	Form: Lecture Team Based Project Duration: Theory 1 x 50" Responsi 1 x 100"		De Bono, E. (2015) De Bono, E. (2008) Kahneman, D. (2011).	6.25
10	The students are proficient in applying the concept of	The students are capable of creating quick and proper	Criteria: Prototype Quality Creativity	Form: Lecture Team Based Project		De Bono, E. (2015) De Bono, E. (2008)	6.25



	Chindogu in a creative process.	prototyping of Chindogu projects.	Innovation Form: Non-test Discussion Assignment	Duration: Theory 1 x 50" Responsi 1 x 100"		Kahneman, D. (2011).	
11, 12, 13	The students are skilled in implementing the idea exploration technique of Random Input.	The students can optimally apply the idea exploration technique of Random Input.	Criteria: Accuracy Creativity Innovation Form: Non-test Discussion Assignment	Form: Lecture Team Based Project Duration: Theory 1 x 50" Responsi 1 x 100"		De Bono, E. (2015) De Bono, E. (2008) Kahneman, D. (2011).	18.75
14	The students have the competence to apply the idea exploration technique of Crazy Eight.	The students can optimally apply the idea exploration technique of Crazy Eight.	Criteria: Accuracy Creativity Innovation Form: Non-test Discussion Assignment	Form: Lecture Team Based Project Duration: Theory 1 x 50" Responsi 1 x 100"		De Bono, E. (2015) De Bono, E. (2008) Kahneman, D. (2011).	6.25
15	The students can use the decision-making technique of Six Thinking Hats.	The students can accurately apply the decision-making technique of Six Thinking Hats.	Criteria: Accuracy Creativity Precision Form:	Form: Lecture Team Based Project Duration: Theory 1 x 50"		De Bono, E. (2017).	6.25



			Non-test Discussion Assignment	Responsi 1 x 100"			
16	The students have the capability to compile a Creative Portfolio.	The students are proficient in compiling a well-structured and comprehensive Creative Portfolio.	Criteria: Adequacy Creativity Form: Non-test Assignment	Form: Lecture SCL Duration: Theory 1 x 50" Responsi 1 x 100"		De Bono, E. (2015) De Bono, E. (2008) Kahneman, D. (2011). De Bono, E. (2017).	6.25

**DP234102 SEJARAH DESAIN**

		INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM				Document Code
SEMESTER LEARNING PLAN						
COURSE (MK)	CODE	MK CLUSTER	CREDIT (sks)		SEMESTER	Date of Compilation
DESIGN HISTORY	DP234102	Design Studies and Human Factors	T=2	P=1	1 (Satu)	10 November 2022
AUTHORIZATION 	RPS Developer		RMK Coordinator		Head of Study Program	
	Audit Yulardi, S.T., M.Ds.		Arie Kurniawan, S.T., M.Ds.		Bambang Tristiyono, S.T., M.Si.	
Learning Ourcomes (CP)	Study Program CPL charged to MK					
	CPL-1	Capable of demonstrating an attitude and character that reflect: devotion to the One and Only God, ethics and integrity, noble virtues, sensitivity and concern for social and environmental issues, appreciation of cultural diversity and plurality, upholding the enforcement of the law, prioritizing the interests of the nation and the wider society through creativity and innovation, excellence, strong leadership, synergy, and other potentials possessed to achieve maximum results.				
	CPL-2	Capable of assessing and utilizing knowledge and technology in order to apply them in the field of Product Design, and capable of making accurate decisions from individual or group work in the form of final assignment reports or other learning activities with outputs equivalent to final assignments through logical, critical, systematic, and innovative thinking.				
	CPL-5	Capable of understanding and applying knowledge, insights, and expertise related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural aspects, economics and business, entrepreneurship, ethics, and intellectual property rights (HKI).				
	Course Learning Outcomes (CPMK)					
	CPMK-1	Students possess knowledge of the history of design development, influential figures, and the underlying factors from the Classical to the Post-Modern era.				



	CPMK-2	Students have knowledge of the evolution of product design in America, Europe, and Asia.			
	CPMK-3	Students are capable of comprehending and identifying the characteristics of design styles that emerged from the Classical to the Post-Modern period.			
	CPMK-4	Students can articulate both orally and in writing the history of product design within the context of evolving forms driven by technological and socio-cultural developments.			
		CPL Matrix – CPMK			
		CPMK	CPL-1	CPL-2	CPL-5
		CPMK-1	v	v	
		CPMK-2	v	v	
		CPMK-3	v	v	v
		CPMK-4	v	v	v
MK Description	This course addresses the history of design development from the classical era to the present day, with a specific focus on the evolution of product design in America, Europe, and Indonesia. Upon completion of this course, students will have the ability to identify the characteristics of design styles that emerged in each era and understand the factors that underlie the development of design.				
Study Materials: Learning Materials	Study Materials : 1. Background, development, figures, and characteristics of design styles from the Classical-Renaissance era. 2. Background, development, figures, and characteristics of design styles during the Industrial Revolution. 3. Background, development, figures, and characteristics of design styles during the Art & Craft Movement. 4. Background, development, figures, and characteristics of design styles in the Art Nouveau & Proto Modernism era. 5. Background, development, figures, and characteristics of design styles in the Art Deco era. 6. Background, development, figures, and characteristics of design styles in the Modern era. 7. Background, development, figures, and characteristics of design styles in the Post-Modern era. 8. European & Scandinavian design styles. 9. American design styles. 10. Asian design styles. 11. History of design development in Indonesia. 12. Development of apparel and jewelry design.				



		13. Development of furniture design. 14. Development of transportation design. 15. Development of appliance design.					
References		Primary:					
		1. Bürdek, B. E. (2005). <i>Design: History, theory and practice of product design</i> . Walter de Gruyter. 2. Widagdo. (2005). <i>Desain dan Kebudayaan</i> . ITB Press. 3. Fiell, C., & Fiell, P. (2016). <i>The Story of Design: From the Paleolithic to the Present</i> . The Monacelli Press, LLC. 4. Fiell, C., Fiell, P., & Zabalza, C. C. (2002). <i>Scandinavian design</i> . Köln: Taschen.					
		Secondary:					
		Morley, J. (1999). <i>Furniture: the western tradition; history, style, design</i> . Thames & Hudson. Sparke, P. (2002). <i>A century of car design</i> . Mitchell Beazley.					
Assigned Lecturer		Audit Yulardi, S.T., M.Ds.					
Required Courses		-					
Week of -	The final abilities of each learning stage (Sub-CPMK)	Evaluation		Learning Method, Teaching Method, Student Assignments (Time Estimation)		Learning Materials (References)	Weight (%)
		Indicator	Criteria and Form	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students possess knowledge of the background, development, influential figures, and characteristics of design styles from the Classical-Renaissance era.	Understand and be capable of identifying the characteristics of design and influential figures in the Classical-Renaissance era.	Capable of explaining design characteristics. Capable of explaining the factors underlying design development.	Discussion 150 menit	-	Bürdek, Bernhard E., <i>Design History, Theory and Practice of Product Design</i> , Birkhäuser, 2005	6,25



		Grasp the factors that underlie the development of design during the Classical-Renaissance era.					
2	Students are proficient in comprehensively explaining the background, development, influential figures, and characteristics of design styles during the Industrial Revolution.	Understand and be capable of identifying the characteristics of design and influential figures during the Industrial Revolution era. Grasp the factors that underlie the development of design during the Industrial Revolution era.	Capable of explaining design characteristics. Capable of explaining the factors underlying design development. Form: presentation or quiz.	Discussion Presentation Quiz 150 menit	-	Bürdek, Bernhard E., Design History, Theory and Practice of Product Design, Birkhäuser, 2005. Widagdo, Desain dan Kebudayaan, ITB Press, 2005.	6,25
3	Students are capable of providing a comprehensive explanation of the background, development, influential figures, and characteristics of design	Understand and be capable of identifying the characteristics of design and influential figures during the Art & Craft Movement era. Grasp the	Capable of explaining design characteristics. Capable of explaining the factors underlying design development.	Discussion Presentation Quiz 150 menit	-	Bürdek, Bernhard E., Design History, Theory and Practice of Product Design, Birkhäuser, 2005. Widagdo, Desain dan Kebudayaan, ITB Press, 2005.	6,25



	styles during the Art & Craft Movement.	factors that underlie the development of design during the Art & Craft Movement era.	Form: presentation or quiz.				
4	Students can comprehensively explain the background, development, influential figures, and characteristics of design styles in the Art Nouveau & Proto Modernism era.	Understand and be capable of identifying the characteristics of design and influential figures during the Art Nouveau era. Grasp the factors that underlie the development of design during the Art Nouveau era.	Capable of explaining design characteristics. Capable of explaining the factors underlying design development. Form: presentation or quiz.	Discussion Presentation Quiz 150 menit	-	Bürdek, Bernhard E., Design History, Theory and Practice of Product Design, Birkhäuser, 2005. Widagdo, Desain dan Kebudayaan, ITB Press, 2005.	6,25
5	Students can provide a comprehensive explanation of the background, development, influential figures, and characteristics of design styles in the Art Deco era.	Understand and be capable of identifying the characteristics of design and influential figures during the Art Deco era. Grasp the factors that underlie the development of	Capable of explaining design characteristics. Capable of explaining the factors underlying design development. Form: presentation or quiz.	Discussion Presentation Quiz 150 menit	-	Bürdek, Bernhard E., Design History, Theory and Practice of Product Design, Birkhäuser, 2005. Widagdo, Desain dan Kebudayaan, ITB Press, 2005.	6,25



		design during the Art Deco era.					
6	Students are proficient in comprehensively explaining the background, development, influential figures, and characteristics of design styles from Proto Modern to Modernism.	Understand and be capable of identifying the characteristics of design and influential figures during the Proto Modern - Modernism era. Grasp the factors that underlie the development of design during the Proto Modern - Modernism era.	Capable of explaining design characteristics. Capable of explaining the factors underlying design development. Form: presentation or quiz.	Discussion Presentation Quiz 150 menit	-	Bürdek, Bernhard E., Design History, Theory and Practice of Product Design, Birkhäuser, 2005. Widagdo, Desain dan Kebudayaan, ITB Press, 2005.	6,25
7	Students can comprehensively explain the background, development, influential figures, and characteristics of Post-Modernism design styles.	Understand and be capable of identifying the characteristics of design and influential figures during the Post Modernism era. Grasp the factors that underlie the development of design during the	Capable of explaining design characteristics. Capable of explaining the factors underlying design development. Form: presentation or quiz.	Discussion Presentation Quiz 150 menit	-	Bürdek, Bernhard E., Design History, Theory and Practice of Product Design, Birkhäuser, 2005. Widagdo, Desain dan Kebudayaan, ITB Press, 2005.	6,25



		Post Modernism era.					
8	Students are capable of providing a comprehensive explanation of the background, development, influential figures, and characteristics of design in America.	Understand and be capable of identifying the characteristics of design and design figures in America.	Capable of explaining design characteristics. Capable of explaining the factors underlying design development. Form: presentation or quiz.	Discussion Presentation Quiz 150 menit	-	Fiell, C., & Fiell, P. (2016). <i>The Story of Design: From the Paleolithic to the Present</i> . The Monacelli Press, LLC.	6,25
9	Students can comprehensively explain the background, influential figures, and development of design styles in Europe and Scandinavia.	Understand and be capable of identifying the characteristics of design and design figures in Europe and Scandinavia.	Capable of explaining design characteristics. Capable of explaining the factors underlying design development. Form: presentation or quiz.	Discussion Presentation Quiz 150 menit	-	Fiell, C., Fiell, P., & Zabalza, C. C. (2002). <i>Scandinavian design</i> . Köln: Taschen.	6,25
10	Students are proficient in providing a comprehensive explanation of the	Understand the development of design in Indonesia and grasp the	Capable of explaining design characteristics.	Discussion Presentation Quiz 150 menit	-	Fiell, C., & Fiell, P. (2016). <i>The Story of Design: From the Paleolithic to the</i>	6,25



	background and influential figures in the development of design in Indonesia.	factors that underlie the development of design.	Capable of explaining the factors underlying design development. Form: presentation or quiz.			<i>Present. The Monacelli Press, LLC.</i>	
11	Students can comprehensively explain the development of the forms of furniture products.	Understand the development of furniture design in the world.	Capable of explaining design characteristics. Capable of explaining the factors underlying design development. Form: presentation or quiz.	Discussion Presentation Quiz 150 menit	-	Fiell, C., & Fiell, P. (2016). <i>The Story of Design: From the Paleolithic to the Present</i> . The Monacelli Press, LLC. Morley, J. (1999). <i>Furniture: the western tradition; history, style, design</i> . Thames & Hudson.	6,25
12	Students can provide a comprehensive explanation of the development of the forms of accessory and apparel products.	Understand the development of apparel and accessory product design in the world.	Capable of explaining design characteristics. Capable of explaining the factors underlying design development.	Discussion Presentation Quiz 150 menit	-	Fiell, C., & Fiell, P. (2016). <i>The Story of Design: From the Paleolithic to the Present</i> . The Monacelli Press, LLC.	6,25



			Form: presentation or quiz.				
13	Students are capable of providing a comprehensive explanation of the development of the forms of footwear products.	Understand the development of footwear product design in the world.	Capable of explaining design characteristics. Capable of explaining the factors underlying design development. Form: presentation or quiz.	Discussion Presentation Quiz 150 menit	-	Fiell, C., & Fiell, P. (2016). <i>The Story of Design: From the Paleolithic to the Present</i> . The Monacelli Press, LLC.	6,25
14	Students can comprehensively explain the development of the forms of transportation product designs.	Understand the development of transportation product design in the world.	Capable of explaining design characteristics. Capable of explaining the factors underlying design development. Form: presentation or quiz.	Discussion Presentation Quiz 150 menit	-	Fiell, C., & Fiell, P. (2016). <i>The Story of Design: From the Paleolithic to the Present</i> . The Monacelli Press, LLC. Sparke, P. (2002). <i>A century of car design</i> . Mitchell Beazley.	6,25
15	Students are proficient in providing a comprehensive explanation of the development of the forms of household	Understand the development of household appliance product design in the world.	Capable of explaining design characteristics. Capable of explaining the factors	Discussion Presentation Quiz 150 menit	-	Fiell, C., & Fiell, P. (2016). <i>The Story of Design: From the Paleolithic to the Present</i> . The Monacelli Press, LLC.	6,25



	appliance products.		underlying design development. Form: presentation or quiz.				
16	Students can comprehensively explain the development of the forms of electronic product designs.	Understand the development of electronic equipment product design in the world.	Capable of explaining design characteristics. Capable of explaining the factors underlying design development. Form: presentation or quiz.	Discussion Presentation Quiz 150 menit	-	Fiell, C., & Fiell, P. (2016). <i>The Story of Design: From the Paleolithic to the Present</i> . The Monacelli Press, LLC.	6,25

**DW234101 DESIGN THINKING**

		INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code
SEMESTER LEARNING PLAN							
COURSE (MK)		CODE	MK CLUSTER	CREDIT (sks)		SEMESTER	Date of Compilation
DESIGN THINKING		DW234101	Design Studies and Human Factors	T=1	P=1	1	20 January 2023
AUTHORIZATION 		RPS Developer		RMK Coordinator		Head of Study Program	
		Ellya Zulaikha, ST, M.Sn, Ph.D		Arie Kurniawan, S.T, M.Ds		Bambang Tristiyono, ST., M.Si	
Learning Ourcomes (CP)	Study Program CPL charged to MK						
	CPL-4	Capable of comprehending and applying knowledge of theoretical product design concepts, including: fundamental design principles and aesthetics, material characteristics, functionality, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.					
	CPL-6	Able to design products and their systems, taking into consideration all influencing aspects, including: fundamental design principles and aesthetics, material characteristics, functionality, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.					
	CPL-7	Capable of researching issues, formulating and publishing design needs and their solutions for the present or future using relevant design and research methodologies.					
	Course Learning Outcomes (CPMK)						
	CPMK-1	Students possess the ability to empathize and comprehensively understand needs and issues from various perspectives as per the context.					
	CPMK-2	Students can clearly define the problems and objectives of customers/users, etc.					



	CPMK-3	Students can apply ideation techniques that aid in generating innovative solutions.			
	CPMK-4	Students can transform ideas into realistic solutions for implementation and test them to obtain feedback for improvement.			
		CPL Matrix – CPMK			
		CPMK	CPL-4	CPL-6	CPL-7
		CPMK-1	V	V	V
		CPMK-2			V
		CPMK-3		V	V
		CPMK-4	V	V	
MK Description	Design Thinking is a foundational-level course designed to assist students in comprehensively understanding issues through a non-linear, team-based thinking process to understand users, question assumptions, redefine problems, and create innovative solutions in the form of prototypes and their testing. This course utilizes the five stages of Design Thinking, namely Empathy, Problem Definition, Ideation, Prototyping, and Testing, to address unclear or complex problems.				
Study Materials: Learning Materials	1. Design Thinking Principles 2. Ethnographic Design Research 3. Stakeholder Analysis 4. Interview Techniques 5. Affinity Diagramming 6. Stakeholder Mapping 7. Lateral Thinking 8. Brainstorming 9. Idea Visualization 10. Prototyping 11. Testing				
References	Primary:				
	Brown, T. (2009). Change by design, how design thinking transforms organizations and inspires innovation. HarperCollins.				
	Liedtka, J., & Ogilvie, T. (2011). Designing for growth: A design thinking tool kit for managers. Columbia University Press.				



		Lewrick, M., Link, P., & Leifer, L. (2018). The design thinking playbook: Mindful digital transformation of teams, products, services, businesses and ecosystems. John Wiley & Sons. Secondary: Martin, R., & Martin, R. L. (2009). The design of business: Why design thinking is the next competitive advantage. Harvard Business Press. Stickdorn, M., Hormess, M. E., Lawrence, A., & Schneider, J. (2018). This is service design doing: applying service design thinking in the real world. " O'Reilly Media, Inc." Liedtka, J., Hold, K., & Eldridge, J. (2021). Experiencing design: The innovator's journey. Columbia University Press. Burnett, B., & Evans, D. (2016). Designing your life: How to build a well-lived, joyful life. knopf. Lewrick, M., Link, P., & Leifer, L. (2020). The design thinking toolbox: A guide to mastering the most popular and valuable innovation methods. John Wiley & Sons. Mootee, I. (2013). Design thinking for strategic innovation: What they can't teach you at business or design school. John Wiley & Sons. Dreyfuss, H. (2003). Designing for people. Skyhorse Publishing Inc. De Bono, E., & Zimbalist, E. (1970). Lateral thinking (pp. 1-32). London: Penguin. Rawlinson, J. G. (2017). Creative thinking and brainstorming. Routledge. Wilson, C. E. (2006). Brainstorming pitfalls and best practices. interactions, 13(5), 50-63. Heller, S., & Landers, R. (2014). Infographic designers' sketchbooks. New York: Princeton Architectural Press.					
Assigned Lecturer		Ellya Zulaikha, ST, M.Sn, Ph.D					
Required Courses		-					
Week of -	The final abilities of each learning stage (Sub-CPMK)	Evaluation		Learning Method, Teaching Method, Student Assignments (Time Estimation)		Learning Materials (References)	Weight (%)
		Indicator	Criteria and Form	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students are able to explain, provide examples, and elaborate on various fields of study within the Faculty of	Precision in explaining, providing examples, and elaborating on	Criteria: Precision Knowledge Form:	Form: Lecture Discussion Method:		Faculty Profile	



	Creative Design and Digital Business/DKBD (C2, A3, P2)	various fields of study within the Faculty of Creative Design and Digital Business.	Non-test Discussion	Student Centre Learning (SCL) – Class Discussion Assignment: Conveying opinions and summarizing discussions related to the field of study in the FDKBD Duration: 1x2x50 = 100 minutes			
2	Students can elaborate on the principles of Design Thinking. (C2, A3, P2)	Precision in delivering the principles of Design Thinking.	Criteria: Precision Mastery Form: Non-test Discussion	Form: Lecture Discussion Method: Student Centre Learning (SCL) – Class Discussion Assignment: Conveying opinions and summarizing discussions about the principles of Design Thinking. Duration: 1x2x50 = 100 minutes		Brown, T. (2009). <i>Change by design, how design thinking transforms organizations and inspires innovation</i>. HarperCollins. Martin, R., & Martin, R. L. (2009). <i>The design of business: Why design thinking is the next competitive advantage</i>. Harvard Business Press. Liedtka, J., & Ogilvie, T. (2011). <i>Designing for growth: A design thinking tool kit for</i>	



						managers. Columbia University Press.	
3	Students can explain empathetic techniques and identify relevant stakeholders. (C2, A3, P2)	Precision in conveying empathetic techniques and performing stakeholder identification.	Criteria: Precision Mastery Form: Non-test Discussion	Form: Lecture Discussion Method: Student Centre Learning (SCL) – Class Discussion Assignment: Conveying opinions and summarizing discussions about the principles of Design Thinking. Duration: 1x2x50 = 100 minutes		Stickdorn, M., Hormess, M. E., Lawrence, A., & Schneider, J. (2018). <i>This is service design doing: applying service design thinking in the real world.</i> "O'Reilly Media, Inc.".	
4	Students can explain empathetic techniques using Ethnographic Design, Cultural Probes, Personas, and User Mapping. (C2, A3, P2)	Precision in presenting empathetic techniques.	Criteria: Precision Mastery Form: Non-test Discussion	Form: Lecture Discussion Method: Student Centre Learning (SCL) – Class Discussion Assignment: Conveying opinions and summarizing discussions about empathetic techniques. Duration:		Liedtka, J., Hold, K., & Eldridge, J. (2021). <i>Experiencing design: The innovator's journey.</i> Columbia University Press. Burnett, B., & Evans, D. (2016). <i>Designing your life: How to build a well-lived, joyful life.</i> knopf.	



				1x2x50 = 100 minutes			
5	Students can use empathetic techniques with users and relevant stakeholders, analyze project stakeholders. (C3, A3, P3)	Clarity in elaborating the techniques used for empathy.	Criteria: Precision Mastery Form: Non-test Discussion	Form: Discussion Workshop Method: Team-Based Project Assignment: Presentation of relevant stakeholders in a chosen simple campus issue in group format. Duration: 1x2x50 = 100 minutes		Lewrick, M., Link, P., & Leifer, L. (2018). <i>The design thinking playbook: Mindful digital transformation of teams, products, services, businesses and ecosystems.</i> John Wiley & Sons.	10%
6	Students can formulate questions to cultivate empathy with users and relevant stakeholders and conduct interviews. (C3, A4, P3)	Accuracy and clarity in the questions for empathy cultivation.	Criteria: Precision Mastery Form: Non-test Discussion	Form: Lecture Discussion Workshop Method: Team-Based Project Penugasan : Interviewing relevant stakeholders in a chosen simple campus issue in a group setting. Duration: 1x2x50 = 100 minutes		Lewrick, M., Link, P., & Leifer, L. (2020). <i>The design thinking toolbox: A guide to mastering the most popular and valuable innovation methods.</i> John Wiley & Sons.	10%
7	Students can analyze interview results and	The depth of analysis in	Criteria: Precision	Form: Lecture		Mootee, I. (2013). <i>Design thinking</i>	10%



	formulate user and stakeholder issues and needs. (C4, A4, P4)	formulating user issues and needs.	Mastery Form: Non-test Discussion	Discussion Workshop Method: Team-Based Project Penugasan : Interviewing relevant stakeholders in a chosen simple campus issue in a group setting. Duration: 1x2x50 = 100 minutes		<i>for strategic innovation: What they can't teach you at business or design school. John Wiley & Sons.</i>	
8	Students can define/conclude user and stakeholder needs in the form of an Empathy Map, Stakeholder Map, PoV Madlib, and/or HMW Question. (C5, A5, P4)	The depth and precision in identifying user needs.	Criteria: Precision Mastery Form: Non-test Discussion	Form: Lecture Discussion Workshop Method: Team-Based Project Penugasan : User needs presentation. Duration: 1x2x50 = 100 minutes		Dreyfuss, H. (2003). Designing for people. Skyhorse Publishing Inc.	5%
9	Semester Mid Exam						
10	Students understand the principles of lateral thinking and various ideation techniques. (C2, A2, P3)	The precision of understanding lateral thinking principles.	Criteria: Precision Mastery Form: Non-test	Form: Lecture Discussion Workshop Method: Team-Based Project		De Bono, E., & Zimbalist, E. (1970). <i>Lateral thinking</i> (pp. 1-32). London: Penguin.	



			Discussion	Penugasan : Conveying opinions and summarizing discussions about Lateral Thinking and Various Ideation Techniques. Duration: 1x2x50 = 100 minutes			
11	Students can apply ideation techniques such as Brainstorming and Crazy Eight. (C6, A4, P5)	The precision of understanding ideation principles and the richness and novelty of the generated ideas.	Criteria: Precision Mastery Form: Non-test Discussion	Form: Lecture Discussion Workshop Method: Team-Based Project Penugasan : Conveying opinions and summarizing discussions about Lateral Thinking and Various Ideation Techniques. Duration: 1x2x50 = 100 minutes		Rawlinson, J. G. (2017). <i>Creative thinking and brainstorming</i> . Routledge. Wilson, C. E. (2006). Brainstorming pitfalls and best practices. <i>interactions</i> , 13(5), 50-63.	10%
12	Students can elaborate on ideas for realization. (C6, A5, P5)	Clarity in the realization of ideas.	Criteria: Precision Mastery Form: Non-test	Form: Lecture Discussion Workshop Method: Team-Based Project			10%



			Discussion	Penugasan : Sketch and Scenario of Idea Outcomes. Duration: 1x2x50 = 100 minutes			
13	Students can effectively communicate the generated ideas in a representative manner. (C6, A5, P5)	Clarity in communicating ideas.	Criteria: Precision Mastery Form: Non-test Discussion	Form: Lecture Discussion Workshop Method: Team-Based Project Penugasan : Idea presentation. Duration: 1x2x50 = 100 minutes		Heller, S., & Landers, R. (2014). Infographic designers' sketchbooks. New York: Princeton Architectural Press.	10%
14	Students can test the generated ideas using a Feedback Capture Grid. (C6, A5, P5)	Precision in using ideation testing techniques and depth and comprehensiveness in reviewing feedback.	Criteria: Precision Mastery Form: Non-test Discussion	Form: Lecture Discussion Workshop Method: Team-Based Project Penugasan : Presentation of User Feedback on Idea Outcomes. Duration: 1x2x50 = 100 minutes			10%
15-16	Semester Final Exam						



DP234103 GAMBAR PRODUK 1

		INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code	
SEMESTER LEARNING PLAN								
COURSE (MK)		CODE	MK CLUSTER		CREDIT (sks)		SEMESTER	Date of Compilation
PRODUCT DRAWING 1		DP234103	Design Studies and Human Factors		T=1	P=4	1	9 November 2022
AUTHORIZATION 		RPS Developer		RMK Coordinator		Head of Study Program		
		Alief Samboro, S.T., M.Ds.		Hertina Susandari, S.T., M.T.		Bambang Tristiyono, ST., M.Si		
Learning Ourcomes (CP)	Study Program CPL charged to MK							
	CPL-3	The ability to manage self-directed learning and develop as a lifelong learner in order to compete at the national and international levels, contributing effectively to problem-solving by implementing information and communication technology and considering sustainability principles, while understanding technology-based entrepreneurship.						
	CPL-4	The ability to comprehend and apply knowledge of theoretical product design concepts, including fundamental design principles and aesthetics, material characteristics, functionality, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, and market and business aspects.						
	CPL-8	The capability and skill to use design process aids, including manual or digital equipment in line with technological advancements.						
	CPL-9	The ability to present design concept ideas through verbal communication, visual media, and prototypes using various relevant technologies.						
	Course Learning Outcomes (CPMK)							
	CPMK-1	Students are capable of presenting an idea in visual media with accurate proportions and construction.						



	CPMK-2	Students understand the principles of geometry in the composition of basic structures, complex structures, and products.				
	CPMK-3	Students grasp the principles of spatial perspective in space and object rendering.				
	CPMK-4	Students have mastery of line techniques in product drawing.				
	CPMK-5	Students have mastery of hatching techniques in product drawing.				
	CPMK-6	Students can draw objects in proportion.				
	CPMK-7	Students can draw objects with proper shading based on the principles of light direction and shadow.				
		Matrik CPL – CPMK				
		CPMK	CPL-3	CPL-4	CPL-8	CPL-9
		CPMK-1	v			
		CPMK-2		v		
		CPMK-3		V		
		CPMK-4			v	
		CPMK-5			v	
		CPMK-6				v
		CPMK-7				v
MK Description	This course is a core and fundamental course that must be taken by first-semester students. In this course, students are taught drawing according to product design standards, especially with pencil as the medium. Emphasis will be placed on line work, object proportions, perspective space, and the basics of industrial product construction drawing.					
Study Materials: Learning Materials	Perspective theory Light direction and shadow theory Hatching technique Proportional drawing technique Constructive drawing technique					
References	Primary:	Pipes, Alan, “Drawing for Designer”, Laurence King Publishers, 2007 Erik Olofsson & Klara Sjöln, “Design Sketching”, KEEOS Design Books, Sweden, 2005 Eissen, Koos, & Steur, Roselien, “Sketching : Drawing Technique for Product Designer”, Bis Publisher, 2009 Powell, Dick, “Presentation Techniques: A Guide to Drawing and Presenting Design Ideas”, Little, Brown, 1990				



	Waluyohadi, "Gambar Bentuk dan Suasana", Butawarna Publishing, 2015 Figure Drawing For All It's Worth - Andrew Loomis Product Sketches: From Rough to Refined - Andres Parada Sketching: Drawing Techniques for Product Designers - Koos Eissen and Roselien Steur Sketching the Basics - Koos Eissen and Roselien Steur Drawing for Product Designers - Kevin Henry Perspective Made Easy - Ernest Ralph Norling How to Draw: Drawing and Sketching Objects and Environments - Scott Robertson and Thomas Bertlin						
	Secondary:						
Assigned Lecturer	Waluyohadi, Andhika Estiyono, MY Alief Samboro, Gunanda Tiara, Irna Arlianti, Ahmad Rieskha Harseno						
Required Courses	-						
Week of -	The final abilities of each learning stage (Sub-CPMK)	Evaluation	Learning Method, Teaching Method, Student Assignments (Time Estimation)		Learning Materials (References)		Weight (%)
		Indicator	Criteria and Form	Offline			
(1)	(2)	(3)	(4)	(5)		(7)	(8)
1	Portfolio drawing of imaginative atmosphere	Students can identify proportions, perspective, and depth in drawings.	Object proportions, perspective, angles, hatching.	Form: Lecture, quizzes, discussions Method: Case-based learning Assignments: Drawing practice		Waluyohadi, "Gambar Bentuk dan Suasana", Butawarna Publishing, 2015	2



				Time estimate: 150 minutes		Erik Olofsson & Klara Sjöln, "Design Sketching", KEEOS Design Books, Sweden, 2005	
2	Hatching drawing of a simple structure	Students can create hatching lines according to product drawing standards.	Neatness and consistency of hatching.	Form: Lecture, quizzes, discussions Method: Case-based learning Assignments: Drawing practice Time estimate: 150 minutes		Erik Olofsson & Klara Sjöln, "Design Sketching", KEEOS Design Books, Sweden, 2005	2
3	Perspective drawing of a simple structure	Students can draw with the correct perspective.	Non-distorted perspective.	Form: Lecture, quizzes, discussions Method: Case-based learning Assignments: Drawing practice		Erik Olofsson & Klara Sjöln, "Design Sketching", KEEOS Design Books,	3



				Time estimate: 150 minutes		Sweden, 2005	
4	Drawing of a structure with the application of light and shadow	Students can draw objects with shadow hatching according to the direction of light.	Hatching appropriate to the direction of light.	Form: Lecture, quizzes, discussions Method: Case-based learning Assignments: Drawing practice Time estimate: 150 minutes		Erik Olofsson & Klara Sjöln, "Design Sketching", KEEOS Design Books, Sweden, 2005	5
5	Drawing of a complex object sequence with modifiers	Students can create modifier structures.	Initial construction of the modifier structure.	Form: Lecture, quizzes, discussions Method: Case-based learning Assignments: Drawing practice Time estimate: 150 minutes		Erik Olofsson & Klara Sjöln, "Design Sketching", KEEOS Design Books, Sweden, 2005	2
6	Drawing of a sequence of basic and complex structures	Students can create a sequence of modifier structures.	Construction of the modifier structure.	Form: Lecture, quizzes, discussions Method: Case-based learning		Erik Olofsson & Klara Sjöln, "Design Sketching",	3



				Assignments: Drawing practice Time estimate: 150 minutes		KEEOS Design Books, Sweden, 2005	
7	Drawing of a sequence of modified cylinder structures	Students can create modifiers for cylindrical objects.	Non-distorted and consistent cylinders.	Form: Lecture, quizzes, discussions Method: Case-based learning Assignments: Drawing practice Time estimate: 150 minutes		Erik Olofsson & Klara Sjöln, "Design Sketching", KEEOS Design Books, Sweden, 2005	2
8	Semester Mid Examination						7
9	Product construction drawing	Students can create product construction drawings.	Correct product proportions.	Form: Lecture, quizzes, discussions Method: Case-based learning Assignments: Drawing practice Time estimate: 150 minutes		Erik Olofsson & Klara Sjöln, "Design Sketching", KEEOS Design Books, Sweden, 2005	7



10	Organic product construction drawing	Students can create organic product construction drawings.	Product proportions.	Form: Lecture, quizzes, discussions Method: Case-based learning Assignments: Drawing practice Time estimate: 150 minutes	Erik Olofsson & Klara Sjöln, "Design Sketching", KEEOS Design Books, Sweden, 2005	8
11	Furniture product breakdown drawing	Students can create detailed drawings of furniture products.	Decomposition principles, connection directions, component layers.	Form: Lecture, quizzes, discussions Method: Case-based learning Assignments: Drawing practice Time estimate: 150 minutes	Erik Olofsson & Klara Sjöln, "Design Sketching", KEEOS Design Books, Sweden, 2005	6
12	Appliance product breakdown drawing	Students can create detailed drawings of appliance products.	Decomposition principles, connection directions, component layers.	Form: Lecture, quizzes, discussions Method: Case-based learning Assignments: Drawing practice	Erik Olofsson & Klara Sjöln, "Design Sketching", KEEOS Design Books,	6



				Time estimate: 150 minutes		Sweden, 2005	
13	Still life object drawing	Students can draw various products.	Proportions between products.	Form: Lecture, quizzes, discussions Method: Case-based learning Assignments: Drawing practice Time estimate: 150 minutes		Erik Olofsson & Klara Sjöln, "Design Sketching", KEEOS Design Books, Sweden, 2005	7
14	Object drawing in an interior space	Students can draw products found indoors.	Proportions between products, perspective, hatching, line quality.	Form: Lecture, quizzes, discussions Method: Case-based learning Assignments: Drawing practice Time estimate: 150 minutes		Erik Olofsson & Klara Sjöln, "Design Sketching", KEEOS Design Books, Sweden, 2005	10
15	Exterior object drawing	Students can draw products located outdoors.	Proportions between products, perspective, hatching, line quality.	Form: Lecture, quizzes, discussions Method: Case-based learning		Erik Olofsson & Klara Sjöln, "Design Sketching",	10



				Assignments: Drawing practice Time estimate: 150 minutes		KEEOS Design Books, Sweden, 2005	
16	Semester Final Examination						20

**DP234104 DESIGN BASICS 1**

	INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code
SEMESTER LEARNING PLAN						
COURSE (MK)	CODE	MK CLUSTER	CREDIT (sks)		SEMESTER	Date of Compilation
DESIGN BASICS 1	DP234104	Design and Human Factors Study	T=1	P=4	1	10 November 2022
AUTHORIZATION 	RPS Developer		RMK Coordinator		Head of Study Program	
	Primaditya		Hertina Susandari, ST, MT.		Bambang Tristiyono, ST., M.Si	
Learning Ourcomes (LO)	Study Program LO charged to MK					
	LO-5	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.				
	LO-8	Able and skilled in using design process aids that include: manual or digital equipment according to technology and the times.				
	LO-9	Able to present ideation design concepts through verbal communication, visual media, and prototypes (Models / mock-ups / prototypes) using various relevant technologies.				
	Course Learning Outcomes (CLO)					
	CLO-1	Students are able to understand the theoretical concepts of normative aesthetics, history and the product design profession in general.				
	CLO-2	Students are able to apply the basic elements of dwi-matra & tri-matra design in the form of dwi-matra & tri-matra nirmana compositions in depth.				



	CLO-3	Students are able to apply the basic principles of design in the form of nirmana dwi-matra & tri-matra compositions in depth.			
	CLO-4	Students are able and skilled in using manual or digital equipment when making nirmana dwimatra and trimatra works.			
	CLO-5	Students have oral, written and visual presentation skills when communicating the work of nirmana dwimatra and trimatra.			
		Matrik LO – CLO			
		CLO	LO-5	LO-8	LO-9
		CLO-1	V	V	
		CLO-2	V	V	V
		CLO-3	V	V	V
		CLO-4	V	V	
		CLO-5	V	V	
MK Description	Integration of formal aesthetic theory and application as well as dual-matra and tri-matra nirmana design training				
Study Materials: Learning Materials	· History, development, profession and figures² of product design in general · Normative aesthetic theories · Dual visual design elements: line, size, plane, shape, color, texture · Tri-matra visual design elements: shadow, volume, mass, depth · Basic principles of design: repeatability, variety, balance, barrel, proportion · Gestalt theories · Exercises and tasks of dual-dimensional nirmana composition · Exercises and tasks of tri-matra nirmana composition · Basic design logbook 1 · Basic design portfolio 1 ·				
References	Primary:				



		- Burdek, Bernhard E., Design: The History, Theory and Practice of Product Design, Boston, Birkhauser-Publishers for Architecture, 2005 - Bielefeld, Basic Design Ideas, Boston, Springer, 2007 - Ching, F. D., Architecture: Form, space, and order. John Wiley & Sons. 2014 - Irawan, Bambang & Priscilla T., Design Basics. Jakarta: Griya Kreasi, 2013 - Masri, Andry., Visual Strategy-Playing with Formalistic and Semiotic to Produce Visual Quality in Design. Yogyakarta : Jalasutra, 2012 - Wong, Wucius, some asaa designed dwimatra. Bandung: ITB Publishers, 1986					
		Secondary: Primaditya, Arie K., Ari DK., Composition Two Dimensional of Patra As Taste the Sensitivity on Basic Design, 2017					
Assigned Lecturer		Primaditya					
Required Courses		None					
Week of -	The final abilities of each learning stage (Sub-CLO)	Evaluation		Learning Method, Teaching Method, Student Assignments (Time Estimation)		Learning Materials (References)	Weight (%)
		Indicator	Criteria and Form	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students get to know the scope, rules and plans of Basic Course Design 1	Students remember the scope, rules and basic course plan of Design 1	Students can mention the scope, rules and basic course plan Design 1	Lectures, responses and discussions.150 minutes		Burd, 2005 Bielefeld, 2007	0
2	Students know the history, development,	Students can remember the history and development as well as	Students can rewrite a summary of the history	Lectures, responses and discussions.150 minutes		Burd, 2005 Bielefeld, 2007	5



	figures of Product Design in general	the figures of Product Design	and development of Product Design				
3	Students are familiar with the theory of Normative Aesthetics; Basic Design elements and principles	Students remember the basic elements and principles of Design	Students can mention the basic elements and principles of Design	Lectures, responses and discussions.150 minutes		Ching, 2014 Irawan, 2013 Masri, 2012 Wong, 1986	5
4	Students are able to make bi-matra nirmana compositions of lines and planes	Students can apply line and plane elements to the composition of the dual-matra nirmana	Students are able to make bi-matra lineand plane compositions, neatly and in accordance with the provisions	Lectures, responses, discussions. Practice making nirmana dwimatra composition.150 minutes		Ching, 2014 Irawan, 2013 Masri, 2012 Wong, 1986	5
5	Students are able to create bi-matra compositions of lines, planes, colors	Students can apply elements of line, plane and color to bi-matra nirmana compositions	Students are able to make compositions without the dimensions of lines, planes and colors neatly and in accordance with the provisions	Lectures, responses, discussions. Practice making nirmana dwimatra composition.150 minutes		Ching, 2014 Irawan, 2013 Masri, 2012 Wong, 1986	5
6	Students are able to create bi-matra nirmana compositions of lines, planes, colors, textures	Students can apply elements of line, plane, color and texture to bi-matra nirmana compositions	Students are able to make bi-dimensional compositions of lines, planes, colors and textures neatly and in accordance with the provisions	Lectures, responses, discussions. Practice making nirmana dwimatra composition.150 minutes		Ching, 2014 Irawan, 2013 Masri, 2012 Wong, 1986	5



7	Students are able to make bi-matra nirmana patra compositions	Students can apply the basic elements and principles of design to the composition of nirmana patra dwi-matra	Students are able to make bi-matra nirmana patra compositions neatly and in accordance with the provisions	Lectures, responses, discussions. Practice making nirmana dwimatra composition.150 minutes		Ching, 2014 Irawan, 2013 Masri, 2012 Wong, 1986	5
8	Semester Mid Exam						8
9	Students are able to make tri-matra compositions by exploring paper materials	Students can explore paper materials applying the basic principles of design to the composition of the tri-matra nirmana	Students are able to make tri-matra nirmana compositions using paper materials neatly and in accordance with the provisions	Lectures, responses, discussions. Conduct material exploration and practice making nirmana trimatra compositions.150 minutes		Bielefeld, 2007 Ching, 2014 Irawan, 2013 Masri, 2012 Wong, 1986	7
10	Students are able to make tri-matra compositions by exploring paper materials	Students can explore paper materials applying the basic principles of design to the composition of the tri-matra nirmana	Students are able to make tri-matra nirmana compositions using paper materials neatly and in accordance with the provisions	Lectures, responses, discussions. Conduct material exploration and practice making nirmana trimatra compositions.150 minutes		Bielefeld, 2007 Ching, 2014 Irawan, 2013 Masri, 2012 Wong, 1986	7
11	Students are able to make tri-matra compositions by exploring Tali material	Students can explore rope materials applying the basic principles of design to the	Students are able to make tri-matra nirmana compositions using rope material neatly and in	Lectures, responses, discussions. Conduct material exploration and practice		Bielefeld, 2007 Ching, 2014 Irawan, 2013 Masri, 2012	8



		composition of tri-matra nirmana	accordance with the provisions	making nirmana trimatra compositions.150 minutes		Wong, 1986	
12	Students are able to make tri-matra compositions by exploring Tali material	Students can explore rope materials applying the basic principles of design to the composition of tri-matra nirmana	Students are able to make tri-matra nirmana compositions using rope material neatly and in accordance with the provisions	Lectures, responses, discussions. Conduct material exploration and practice making nirmana trimatra compositions.150 minutes		Bielefeld, 2007 Ching, 2014 Irawan, 2013 Masri, 2012 Wong, 1986	8
13	Students are able to make tri-matra compositions by exploring rod materials	Students can explore rod materials applying the basic principles of design to the composition of the tri-matra nirmana	Students are able to make tri-matra nirmana compositions using rod material neatly and in accordance with the provisions	Lectures, responses, discussions. Conduct material exploration and practice making nirmana trimatra compositions.150 minutes		Bielefeld, 2007 Ching, 2014 Irawan, 2013 Masri, 2012 Wong, 1986	8
14	Students are able to make tri-matra compositions by exploring rod materials	Students can explore rod materials applying the basic principles of design to the composition of the tri-matra nirmana	Students are able to make tri-matra nirmana compositions using rod material neatly and in accordance with the provisions	Lectures, responses, discussions. Conduct material exploration and practice making nirmana trimatra		Bielefeld, 2007 Ching, 2014 Irawan, 2013 Masri, 2012 Wong, 1986	8



				compositions.150 minutes			
15	Students are able to make tri-matra compositions by exploring rod materials	Students can explore rod materials applying the basic principles of design to the composition of the tri-matra nirmana	Students are able to make tri-matra nirmana compositions using rod material neatly and in accordance with the provisions	Lectures, responses, discussions. Conduct material exploration and practice making nirmana trimatra compositions.150 minutes		Bielefeld, 2007 Ching, 2014 Irawan, 2013 Masri, 2012 Wong, 1986	8
16	Semester Final Exam						8

**SM234151 MATHEMATICS**

	INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF SCIENCE AND DATA ANALYTICS DEPARTMENT OF MATHEMATICS					Docu ment Code
SEMESTER LESSON PLAN						
COURSE (MK)	CODE	MK CLUSTER	CREDIT (sks)		SEMESTER	Date of Compilation
MATHEMATICS	SM234151	SKPB	3	0	2	28 October 2022
AUTHORIZATION 	RPS Developer		RMK Coordinator		Head of Study Program	
	Dr. Tahiyatul Asfihani, S.Si, M.Si				Bambang Tristiyono, ST., M.Si	
Learning Outcomes (LO)	Study Program LO charged to MK					
	LO 1	Students are able to identify and explain foundations of mathematics that include pure, applied, and the basic of computing.				
	LO 2	Students are able to solve simple and practical problems by applying basic mathematical statements, methods and computations.				
	Course Learning Outcomes (CLO)					
	CLO 1	Students are able to apply matrix concepts to solve a linear equation system and determine the eigen value .				
	CLO 2	Students are able to apply equations or inequalities and also absolute value.				



		Students are able to define sinus, cosinus, tangent, and apply trigonometric equation in simplifying /solving trigonometric equation.
	CLO 5	Students are able to differentiate explicit functions, apply chain rule, derivative implicit functions, and able to determine maximum/minimum value of the polynomial function.
	CLO 6	Students are able to solve integral using fundamental calculus theorem and basic integration equation.
	CLO 7	Students are able to calculate the area between curves and the volume of area revolution.
	CLO 8	Students are able to understand geometry.

	LO 1	LO 2
<i>CLO 1</i>	√	√
<i>CLO 2</i>	√	√
<i>CLO 3</i>	√	√
<i>CLO 4</i>	√	√
<i>CLO 5</i>	√	√
<i>CLO 6</i>	√	√
<i>CLO 7</i>	√	√
<i>CLO 8</i>	√	√



Short Description of Course	In this course, students will be given matrix concept, determinant and linear equation system, Mathematicssal thinking conception in order to solve manipulated problems, modeling, etc. in technique that relate to differential application. The course will be focusing on the technique to solve real problems that can be formulated to one independent variable function. In this course, student will learn: matrix and determinant, linear equation system, Eigen value and Eigen vector, real number system (real number order), functions and graph, derivative and its application, integral and its application the area between curves and the volume of area revolution and geometry.
Course Materials:	1. Matrix: The basic concept of matrix algebra, calculating determinants, inverse matrices with adjoint matrices or elementary line operations, and solving systems of linear equations, determining eigenvalues and eigenvectors. 2. Real Number System: Understanding the real number system, arithmetic, power, equality and inequalities. 3. Functions & Graphs: Domain, range, basic functions Polynomial, Transcendent: exponential, logarithmic along with graph sketches. 4. Trigonometry: Definition of Sine, cosine, tangent and graph of trigonometric functions, trigonometric equations, set of solving equations in trigonometric collisions. 5. Differential/derivative: Definition of derivative, the derivative with respect to x, chain rule, max/min application to polynomial functions. 6. Integral: Definition, the nature of the indefinite integral, the basic formulas of the indefinite int, the integral by substitution, the partial integral, the definite integral with the Fundamental Theorem Calculus_1. 7. Integral Application: The area between curve, the volume of the volume of area revolution. 8. Geometry: Two-dimensional coordinate system, parallel or perpendicular lines, scale, midpoint between 2 points, pythagorean, two- point distance, scale, conic alignment, reflection, projection and angle.



References	Primary:
	1. Lecturer Team - ITS Mathematics, Mathematics Textbook I FADP, 1st Edition of the ITS Mathematics Department, 2018 2. Anton, H. dkk, Calculus, 10th edition, John Wiley & Sons, New York, 2012.
	Secondary:
	1. Kreyzig, E, Advanced Engineering Mathematicss, 10-th edition, John Wiley & Sons, Singapore, 2011. 2. Purcell, J, E., Rigdon, S., E., Calculus, 9th edition, Prentice-Hall, New Jersey, 2006. 3. James Stewart, Calculus, ed.7, Brooks/cole-Cengage Learning, Canada, 2012.
Lecturers:	



Week of -	The final abilities of each learning stage (Sub-CLO)	Indicator	Criteria and Form	Learning Method, Teaching Method, Student Assignments (Time Estimation)		Learning Materials (References)-	Weight (%)
(1)	(2)	(3)	(4)	Offline (5)	Online (6)	(7)	(8)
1, 2	Introduction of Learning	Learning motivation, delivering learning plan, lectures rules and assessment systems such as evaluation and percentage of each evaluation, textbooks / library sources					
	CLO 1: Students are able to apply matrix concepts to solve a linear equation system and determine the eigen value .	- The accuracy to understand matrix properties, determinant, and solve determinant value. - The accuracy to solve SoLE	Assignment-1 Construct a rubric that relate to matrix and determinant problems. Assingment-2	Tutorial activities, exercises and provide assignment . [FF : 3 x2x 50"] [SA: 3 x 2x60"] [SS: 3 x 2x 60"]	Tutorial activities, exercises and provide assignment via synchronous / asynchronous in MyITS Classroom.	Matrix and determinan t, solving linear equation system. Reference:	



		• The accuracy of determining eigen value and eigen vector.	Solving assignments in essay about matrix and determinant. Quiz 1 Solving the essay test: determinant, SoLE, and inverse matrix.			[1] Lecturer team of ITS Mathematics	
	1st Assistance Practice- Exercises [FF : 2 x 50"]						



3, 4	<i>CLO 2: Students are able to apply equations or inequalities and also absolute value.</i>	• <i>The accuracy of solving equations and inequalities in the real number system</i> • <i>The accuracy of solving equations and inequalities in absolute value</i>	Assignment-3 <i>Complete the assignment of equations and inequalities essay problems.</i>	<i>Tutorial activities, exercises and provide assignment . [FF : 3 x2x 50"] [SA: 3 x 2x60"] [SS: 3 x 2x 60"]</i>	<i>Tutorial activities, exercises and provide assignment via synchronous / asynchronous in MyITS Classroom.</i>	<i>Real Number System, logarithms, absolute value, Inequalities, the coordinates</i>	5



						planes, line equation. Referenc e: Lecturer team of ITS Mathemat ics [2] Anton, H	
	2nd Assistance Practice- Exercises [FF : 2 x 50"]						



5	CLO 3: Students are able to draw graphs of polynomial functions and transcendental functions.	- The accuracy of graphing polynomial functions and transcendental functions - Accuracy in determining the inverse of the function.	Quiz-2 Essay on absolute value, inverse functions, and graph functions.	Tutorial activities, exercises and provide assignment . [FF : 2 x2x 50"] [SA: 2 x 2x60"] [SS: 2 x 2x 60"]	Tutorial activities, exercises and provide assignment via synchronous / asynchronous in MyITS Classroom.	Property and operation functions, polynomial functions, inverse functions, transcendental and trigonometry functions, graph functions. Reference: Lecturer team of ITS Mathematics [2] Anton, H Purcell	10



6,7	CLO 4: Students are able to define sinus, cosinus, tangent, and apply it to trigonometric equation in simplifying/solving trigonometry equation.	<i>The accuracy of defining sinus, cosinus, tangent, and apply it to trigonometric equation in simplifying/ solving trigonometry equation.</i>	Assignment-5 <i>Sum up material, making a rubric.</i>	<i>Tutorial activities, exercises and provide assignment . [FF : 3 x2x 50"] [SA: 3 x 2x60"] [SS: 3 x 2x 60"]</i>	<i>Tutorial activities, exercises and provide assignment via synchronous / asynchronous in MyITS Classroom.</i>	Sinus, cosines, Sinus, cosinus, tangent, cotangent, secan, cosecan, trigonometry equation. Reference: [1] Lecturer team of ITS Mathematic s [2] Anton, H	5
	3th Assistance <i>Practice- Exercises [FF : 2 x 50"]</i>						
8	MID TERM EXAM						25



	4th Assistance <i>Practice- Exercises [FF : 2 x 50"]</i>						
11	CLO 6: students are able to solve integral using fundamental calculus theorem and basic integration formula.	• The accuracy of understanding anti-derivative, improper integral, improper integral and basic formulas of improper integral. • The sharpness of formulating integration calculation with fundamental calculus formula.	Assignment-7: sum up material, completing essay.	Tutorial activities, exercises and provide assignment . [FF : 2 x2x 50"] [SA: 2 x 2x60"] [SS: 2 x 2x 60"]	Tutorial activities, exercises and provide assignment via synchronous / asynchronous in MyITS Classroom.	<i>Improper integral, integration with substitution, partial integration of rational functions, trigonometric functions integration, other integration tehcnique.</i> Reference: [1] Lecturer team of ITS Mathematic s [2] Anton, H James Stewart	10



12, 13	CLO 7: Students are able to calculate the area between curve and the volume of area revolution.	• The accuracy of calculating The area between curve. • The accuracy of calculating the volume of area revolution.	Assignment-8: Completing essay Quiz 3: Essay test about The area between curve and the volume of area revolution.	Tutorial activities, exercises and provide assignment . [FF : 3 x2x 50"] [SA: 3 x 2x60"] [SS: 3 x 2x 60"]	Tutorial activities, exercises, and assignments via Synchronou s/ asynchronous at MyITS Classroom	Application of Integral: The area between curve and the volume of area revolution Reference: [1] Lecturer team of ITS Mathematics [2] Anton, H James Stewart	5



5th Assistance
Practice- Exercises [FF : 2 x 50"]

14	CLO7 : Student are able to calculate the length of a curve in the plane and the surface area of a rotating object	• Accuracy in calculating the length of a curve • Accuracy in calculating the surface area of rotating objects	Assignment-9: completing essay.	Tutorial activities, exercises and provide assignment . [FF : 1 x2x 50"] [SA: 1 x 2x60"] [SS: 1 x 2x 60"]	Tutorial activities, exercises, and assignments via Synchronou s/asynchronous at MyITS Classroom	Application of Integral: The length of a curve and the surface area of rotating objects Reference: [1] Lecturer team of ITS Mathematics [2] Anton, H James Stewart	



6th Assistance <i>Practice- Exercises [FF : 2 x 50"]</i>							
15	CLO 8 : student are able to understand geometry.	• The accuracy of understanding cone slice • The accuracy of mirroring, shifting, projection, and angles.	Assignment-10: completing essay.	Tutorial activities, exercises and provide assignment . [FF : 2 x2x 50"] [SA: 2 x 2x60"] [SS: 2 x 2x 60"]	Tutorial activities, exercises, and assignments via Synchronou s/ asynchronous at MyITS Classroom	Cone slice, mirroring, shifting, projection. Reference: Lecturer team of ITS Mathematics [2] Anton, H James Stewart	5
16	FINAL EXAM						25

**DP234205 TECHNICAL DRAWINGS**

	INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code
SEMESTER LEARNING PLAN						
COURSE (MK)	CODE	MK CLUSTER	CREDIT (sks)		SEMESTER	Date of Compilation
TECHNICAL DRAWING	DP234205	Design Studies and Human Factors	T=1	P=2	2	17 November 2022
AUTHORIZATION 	RPS Developer		RMK Coordinator		Head of Study Program	
	Hertina Susandari, S.T., M.T.		Hertina Susandari, S.T., M.T.		Bambang Tristiyono, ST., M.Si	
Learning Ourcomes (LO)	Study Program LO charged to MK					
	LO-4	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.				
	LO-8	Able and skilled in using design process aids that include: manual or digital equipment according to technology and the times.				
	Course Learning Outcomes (CLO)					
	CLO-1	Students understand the integration of technical drawings in a design process				
	CLO-2	Students are able to visualize product objects in two dimensions and three dimensions with fast sketch techniques				
	CLO-3	Students are able and skilled in using manual equipment to make technical drawings				
	CLO-4	Students are able to make simple product technical drawings and notations in accordance with ISO/ANSI standards				
		LO Matrix – CPMK				
	CLO	LO-4	LO-8			
	CLO-1	V				



		CLO-2	V	V	
		CLO-3	V	V	
		CLO-4	V	V	
MK Description	Basic courses that aim to hone students' spatial skills, read and make technical drawings manually and provide insight into the integration of technical drawings in a design process.				
Study Materials: Learning Materials	· Proyeksi majemuk · Single view projection · Piece · Detail Image · Dimension and shading notation · Parse Image · Component Images · Material Description · Additional Views				
References	Primary:				
	• Bertoline, Gary R, 2002, <i>Introduction to Graphic Communications for Engineers</i>, Edisi ke-2, Mc Graw Hill, New York • Simmons, C, Maguire, Dennis, Phelps, Neil, 2012, <i>The Manual of Engineering Drawing: A Guide to ISO and ASME Standards</i>, Elsevier				
	Secondary:				
	• Giesecke, Frederick E, 2001, <i>Technical Drawing</i> (Volume 1), Erlangga Publishers, Jakarta • Giesecke, Frederick E, 2001, <i>Technical Drawing</i> (Volume 2), Erlangga Publishers, Jakarta • Madsen, David A dan Madsen, David P, 2012, <i>Engineering Drawing & Design</i>, 5th Edition, Delmar Cengage Learning				
Assigned Lecturer	Hertina Susandari, S.T., M.T.				
Required Courses	None				



Week of -	The final abilities of each learning stage (Sub-CLO)	Evaluation		Learning Method, Teaching Method, Student Assignments (Time Estimation)		Learning Materials (References)	Weight (%)
		Indicator	Criteria and Form	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	- Students get to know the scope, rules and plans of Technical Drawing Lectures - Students know the types and functions of manual drawing equipment - Students know the International System (SI) and American Unit (ANSI) units of measure used	- Students remember the scope, rules and plans of the Engineering Drawing course - Students can remember the types and functions of manual drawing equipment. - Students can remember the SI and Standard	- Students can mention the scope, rules and plans of the Technical Drawing course - Students can mention the types and functions of manual drawing equipment - Students can mention the difference between SI and American Standard units of measure in Technical Drawings	Lecture and pretest.150 minutes		Bertoline, 2002 Simmons et al, 2012	0



	in Technical Drawing	American units of measure used in Technical Drawing correctly					
2	- Students understand the types and uses of lines - Students are able to draw lines of a certain size and angle using drawing instruments	- Students can explain the types and uses of lines - Students can draw lines of a certain size and angle using drawing instruments properly and correctly	- Students can explain the type and use of lines correctly - Students can draw lines of a certain size and angle using drawing instruments neatly, accurately and according to the provisions. Shape: Discussion Non test Assignment	Lectures and discussions.50 minutes Response and Practice.100 minutes		Giesecke, 2001	5
3	Students know the types of	Students can remember	Students can name the type of	Lectures and discussions.		Bertoline, 2002 Madsen, 2012	5



	architect scales, engineer scales and metric scales Students are able to sketch two- or three-dimensional object techniques using projection theory	the types of architect scales, engineer scales and metric scales Students are able to sketch two- or three-dimensional object techniques using projection theory properly and correctly	architect scale, engineer scale and metric scale Students are able to sketch two- or three-dimensional object techniques using projection theory neatly, accurately and according to the provisions Shape: Discussion Non test Assignment	50 minutes Response and Practice 100 minutes		Simmons et al, 2012 Giesecke, 2001	
4,5,6	Students understand the concept of compound projection according to ISO / ANSI standards	Students can explain the concept of compound projection according to ISO / ANSI standards	Students can explain the concept of compound projection according to ISO / ANSI standards comprehensively	Lectures and discussions. 50 minutes		Bertoline, 2002 Madsen, 2012 Simmons et al, 2012 Giesecke, 2001	15



	Students can apply the concept of compound projection into the form of images	Students can draw compound projections according to ISO/ANSI standards correctly	Students can draw compound projections according to ISO/ANSI standards neatly, accurately and correctly Shape: Discussion Non test Assignment	Response and Practice 100 minutes			
7,8,10	- Students understand the concept of cutout drawings and notation - Students can apply the concept of cut drawings and notation into	- Students are able to explain the concept of cutout drawings and notation - Students can make cut drawings and notations properly	- Students are able to explain the concept of cut images and notation comprehensively - Students can make cutout drawings and notations neatly, accurately and	Lectures and discussions. 50 minutes Response and Practice 100 minutes		Bertoline, 2002 Madsen, 2012 Simmons et al, 2012 Giesecke, 2001	15



	the form of pictures	and correctly	according to the provisions				
			Shape: Discussion Non test Assignment				
9	Semester Mid Exam						20
11, 12	- Students understand the concept of single-view images - Students can apply the concept of a single view image into the form of a picture	- Students can explain the concept of single-view images - Students can make single view images properly and correctly	- Students can explain the concept of single-view images comprehensively - Students can create single-view images neatly, accurately and according to the provisions	Lectures and discussions. 50 minutes Response and Practice 100 minutes		Bertoline, 2002 Madsen, 2012 Simmons et al, 2012 Giesecke, 2001, 2001, 2001	10
13,14	Students know the application of technical drawings to simple products using ISO / ANSI standards	Students can reproduce technical drawings on simple products well and correctly	Students can reproduce technical drawings on simple products neatly, accurately and	Response and Practice 150 minutes	Response and Practice	Bertoline, 2002 Madsen, 2012 Simmons et al, 2012 Giesecke, 2001	10



			according to the provisions Shape: Discussion Non test Assignment		150 minutes		
15, 16	Students can apply technical drawing rules with <i>reverse engineering methods</i> from simple products according to ISO / ANSI standards	Students can make technical drawings with <i>reverse engineering methods</i> from simple products	Students can make technical drawings from simple products neatly, accurately and according to the provisions Shape: Discussion Non test Big Tasks	Response and Practice 150 minutes	Response and Practice 150 minutes	Bertoline, 2002 Madsen, 2012 Simmons et al, 2012 Giesecke, 2001	20

**DP234206 SCIENTIFIC WRITING**

		SEPULUH NOPEMBER INSTITUTE OF TECHNOLOGY SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM				Document Code
SEMESTER LEARNING PLAN						
COURSE (MK)	CODE	MK CLUSTER	CREDIT (credit)		SEMESTER	Date of Compilation
SCIENTIFIC WRITING	DP234206	Product Design and Business Management	T=1	P=1	2	Nov 08, 2022
AUTHORIZATION	RPS Developer	RMK Coordinator	Head of Study Program			
	Irna Arlianti, S.T., M.Ds.	Arie Kurniawan, S.T, M.Ds	Bambang Tristiyono, S.T., M.Si			
Learning Ourcomes (CP)	Study Program CPL charged to MK					
	CPL-1	Able to show attitudes and characters that reflect: piety to God Almighty, ethics and integrity, noble ethics, sensitivity and care for social and environmental problems, respect cultural differences and pluralism, uphold law enforcement prioritizing the interests of the nation and the wider community, through creativity and innovation, excellence, strong leadership, synergy, and other potentials possessed to achieve maximum results.				
	CPL-3	Able to manage self-learning, and develop themselves as lifelong learners to compete at national, and international levels, in order to make a real contribution to solving problems by implementing information and communication technology and paying attention to sustainability principles and understanding technology-based entrepreneurship.				
	CPL-4	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.				
	CPL-7	Able to research problems, formulate and publish design needs and solutions for the present or future using relevant design and research methodologies.				



	CPL-8	Able and skilled in using design process aids that include: manual or digital equipment according to technology and the times.																																							
	Course Learning Outcomes (CPMK)																																								
	CPMK-1	Students are able to understand the theory of preparing scientific papers, (C2, A2, P2)																																							
	CPMK-2	Students are able to identify the components of scientific writing (C2, A3, P3)																																							
	CPMK-3	Students are able to apply library editing techniques with relevant technology in accordance with scientific ethics (C3, A4, P3)																																							
	CPMK-4	Students are able to explain ethics and standardization of scientific writing (C2, A2, P2)																																							
	CPMK-5	Students are able to compile scientific paper proposals in the context of design (C4, P4, A4)																																							
		CPL Matrix – CPMK <table><tr><td>CPMK</td><td>CPL-1</td><td>CPL-3</td><td>CPL-4</td><td>CPL-7</td><td>CPL-8</td></tr><tr><td>CPMK-1</td><td>V</td><td></td><td>V</td><td></td><td></td></tr><tr><td>CPMK-2</td><td>V</td><td>V</td><td>V</td><td>V</td><td></td></tr><tr><td>CPMK-3</td><td>V</td><td>V</td><td></td><td></td><td>V</td></tr><tr><td>CPMK-4</td><td>V</td><td>V</td><td>V</td><td></td><td></td></tr><tr><td>CPMK-5</td><td>V</td><td>V</td><td>V</td><td>V</td><td></td></tr></table>					CPMK	CPL-1	CPL-3	CPL-4	CPL-7	CPL-8	CPMK-1	V		V			CPMK-2	V	V	V	V		CPMK-3	V	V			V	CPMK-4	V	V	V			CPMK-5	V	V	V	V
CPMK	CPL-1	CPL-3	CPL-4	CPL-7	CPL-8																																				
CPMK-1	V		V																																						
CPMK-2	V	V	V	V																																					
CPMK-3	V	V			V																																				
CPMK-4	V	V	V																																						
CPMK-5	V	V	V	V																																					
MK Description	Techniques for conveying ideas, problems and needs in the world of product design in writing according to scientific principles so that students have the ability to think systematically and are able to compile design-based scientific papers																																								
Study Materials: Learning Materials	1. Simple Scientific Article Writing 2. Browse Libraries and Citations 3. Ethics of Scientific Writing 4. Proposal Preparation																																								
References	Primary:																																								
	1. Dj, O.S. (2021). <i>Skills and Strategies for Academic Writing</i> . Bandung: Yrama Widya. 2. Gani, E. (2013). <i>Components of scientific paper</i> . Bandung: Pustaka Reka Cipta.																																								
	Secondary:																																								



	1. Creswell, J. W., & Creswell, J. D. (2017). <i>Research design: Qualitative, quantitative, and mixed methods approaches</i> . Sage publications.
Assigned Lecturer	
Required Courses	-

Week of -	The final abilities of each learning stage (Sub-CPMK)	Evaluation		Learning Method, Teaching Method, Student Assignments (Time Estimation)		Learning Materials (References)	Weight (%)
		Indicator	Criteria and Form	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students are able to understand the theory of preparing scientific papers, (C2, A2, P2)	Accuracy in identifying differences in writing structure, character, way of presenting information in papers, articles, final project reports	Criterion: Accuracy and mastery Shape: Non test	Shape: Lecture Discussion Method: Self-directed learning Assignment: Identify different types of papers in the scope of product design (papers, articles, final project reports) – (Task 1) Estimated time : 1x2x50'	Explanation of the organizational components of scientific papers (papers, articles, final project reports)	Simple Scientific Article Writing - "Introduction to Types of Scientific Papers" Book: Gani, E. (2013). <i>Components of scientific paper</i> . Bandung: Pustaka Reka Cipta.	5



2, 3	Students are able to identify the components of scientific writing (C2, A3, P3)	Accuracy of written submission: background, urgency of the problem, identification of problems and limitations systematically scientifically	Criterion: Accuracy, mastery, systematic Technique : non test	Shape: Lecture Workshop Method: Case based learning Assignment: Make an introduction from the title of the design lecture (Task 2) Estimated time : 1x2x50'	• Explanation of the structure of background writing, problem identification, and problem limitations • Students compile an introduction to scientific papers	Simple Scientific Article Writing – "Preliminary Writing of Design-Based Scientific Papers" Book: 1.Dj, O.S. (2021). <i>Skills and Strategies for Academic Writing</i> . Bandung: Yrama Widya. 2.Gani, E. (2013). <i>Components of scientific paper</i> . Bandung: Pustaka Reka Cipta.	10
4, 5	Students are able to apply library editing techniques with relevant technology in accordance with scientific ethics (C3, A4, P3)	Authentication of paraphrasing sentences, accuracy of writing citations and bibliography according to scientific writing rules	Criterion: Accuracy, mastery, sentence structure, neatness Shape: Non test	Shape: Tutorial Method: Case based learning Assignment: Create a literature review of product design-themed articles (Task 3) Estimated time : 2x2x50'	• Students practice paraphrasing literature • Students practice writing citations and automatic bibliography as well as library inventory	Browse Literature and Citations - "Paraphrasing Techniques, Citation Writing and Bibliography" Book: 1. Dj, O.S. (2021). <i>Skills and Strategies for Academic Writing</i> . Bandung: Yrama Widya. 2.Gani, E. (2013). <i>Components of scientific paper</i> . Bandung: Pustaka Reka Cipta.	10



6	Students are able to identify the components of scientific writing (C2, A3, P3)	Accuracy of written delivery: Hierarchy of theory subtitles, paraphrasing sentence authentication and citation writing + bibliography	Criterion: Accuracy, mastery, authentication Shape: Non test	Shape: Tutorial Workshop Method: Case based learning Assignment: Create a theoretical framework from the title of the design lecture (Task 4) Estimated time : 1x2x50'	• Explanation of the structure of the theoretical framework of scientific papers • Students develop a theoretical framework based on the title of design	Browse Literature and Citations - "Writing a Theoretical Framework for Design-Based Scientific Papers" Book: Gani, E. (2013). <i>Components of scientific paper</i> . Bandung: Pustaka Reka Cipta.	10
7	Students are able to explain ethics and standardization of scientific writing (C2, A2, P2)	Depth of review / criticism of cases of violation of scientific writing ethics	Criterion: Accuracy, mastery, critical Shape: Non test	Shape: Lecture Discussion Method: Case based learning Assignment: present the results of the discussion, examples of cases of violations of scientific writing ethics (Task 5); Estimated time :	Case study discussion, examples of ethics in writing scientific articles	Ethics of Scientific Writing – "Introduction to the Ethics of Scientific Writing" Book: Dj, O.S. (2021). <i>Skills and Strategies for Academic Writing</i> . Bandung: Yrama Widya.	5



				1x2x50'			
8	Students are able to identify the components of scientific writing (C2, A3, P3)	Accuracy of presentation of design-based research methodology information	Criterion: Accuracy, mastery, systematic Shape: Non test	Shape: Lecture Workshop Method: Case based learning Assignment: create a research methodology from the title of the design lecture (Task 6) Estimated time : 1x2x50'	- Explanation of research methodology chart - Students compile research methodology based on the title of design	Simple Scientific Article Writing – "Design-Based Research Methodology Writing" Book: 1. Gani, E. (2013). <i>Components of scientific paper</i> . Bandung: Pustaka Reka Cipta. 2. Creswell, J. W., & Creswell, J. D. (2017). <i>Research design: Qualitative, quantitative, and mixed methods approaches</i> . Sage publications.	10
9	Semester Mid Exam						
10	Students are able to identify the components of scientific writing (C2, A3, P3)	Accuracy in compiling informative, systematic and scientific abstracts	Criterion: Accuracy, mastery, systematic Shape: Non test	Shape: Lecture Workshop Method: Case based learning Assignment: create an abstract of the design content (Task 7)	Explanation of the structure of abstract writing as a component of the article	Simple Scientific Article Writing – "Assembling Abstracts on Product Design Articles" Book: 1. Gani, E. (2013). <i>Components of scientific paper</i> . Bandung: Pustaka Reka Cipta.	10



				Estimated time : 1x2x50'		2. Creswell, J. W., & Creswell, J. D. (2017). <i>Research design: Qualitative, quantitative, and mixed methods approaches</i> . Sage publications.	
11	Students are able to compile scientific paper proposals in the context of design (C4, P4, A4)	Innovation of PKM proposal writing ideas	Criterion: Precision, mastery, creativity Shape: Non test	Shape: Response Method: Group project Assignment: make ideation of alternative PKM proposal titles in the form of a mindmap (Task 8) Estimated time : 1x2x50'		Proposal Preparation – "Brief and Ideation of PKM Proposal Writing" Book: Dj, O.S. (2021). <i>Skills and Strategies for Academic Writing</i> . Bandung: Yrama Widya.	5
12	Students are able to identify the components of scientific writing (C2, A3, P3)	Accuracy in understanding the design process / flow linearly	Criterion: Accuracy and mastery Shape: Non test	Shape: Lecture Discussion Method: Case based learning Estimated time :	Explanation of the design flow in product design	Proposal Preparation – "Identify the Design Flow in the Product Design Lecture Project" Book: Creswell, J. W., & Creswell, J. D. (2017). <i>Research</i>	5



				1x2x50'		<i>design: Qualitative, quantitative, and mixed methods approaches. Sage publications.</i>	
13-15	Students are able to compile scientific paper proposals in the context of design (C4, P4, A4)	The accuracy of preparing proposals according to scientific principles; Submission of informative proposal proposals	Criterion: Precision, mastery, creativity Shape: Non test	Shape: Response Seminar Method: Group project Assignment: create a PKM proposal themed on product design (Task 9) Estimated time : 3x2x50'	Assistance, assessment and review of design-based PKM proposal preparation	Proposal Preparation – "Product Design-based PKM Proposal Writing" Book: 1. Dj, O.S. (2021). <i>Skills and Strategies for Academic Writing</i> . Bandung: Yrama Widya. 2. Gani, E. (2013). <i>Components of scientific paper</i> . Bandung: Pustaka Reka Cipta. 3. Creswell, J. W., & Creswell, J. D. (2017). <i>Research design: Qualitative, quantitative, and mixed methods approaches</i> . Sage publications. 4. PKM Guide (2022)	30
16	Semester Final Exam						100



DP234207 PRODUCT DRAWING 2

	SEPULUH NOPEMBER INSTITUTE OF TECHNOLOGY SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code
SEMESTER LEARNING PLAN						
COURSE (MK)	CODE	MK CLUSTER		CREDIT (credit)		SEMESTER Date of Compilation
PRODUCT DRAWING 2	DP234207	Design and Human Factors Study		T=1	P=4	1 November 9, 2022
AUTHORIZATION 	RPS Developer		RMK Coordinator			Head of Study Program
	Alief Samboro, S.T., M.Ds.		Hertina Susandari, S.T., M.T.			Bambang Tristiyono, ST., M.Si
Learning Outcomes (CP)	CPL-PRODI charged to MK					
	CPL-3	Able to manage self-learning, and develop themselves as lifelong learners to compete at national, and international levels, in order to make a real contribution to solving problems by implementing information and communication technology and paying attention to sustainability principles and understanding technology-based entrepreneurship.				
	CPL-4	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.				
	CPL-8	Able and skilled in using design process aids that include: manual or digital equipment according to technology and the times.				
	CPL-9	Able to present ideation design concepts through verbal communication, visual media, and prototypes (Models / mock-ups / prototypes) using various relevant technologies.				
	Course Learning Outcomes (CPMK)					
	CPMK-1	Students are able to process design ideas using sketch and drawing media				
CPMK-2	Students are able to draw the proportions of the human body correctly					



	CPMK-3	Students are able to master product rendering techniques using color																																												
	CPMK-4	Students are able to master manual product sketching techniques quickly																																												
	CPMK-5	Students are able to explore the use of various media in drawing product sketches																																												
	CPMK-6	Students are able to draw objects according to the visualization of the material																																												
	CPMK-7	Students are able to convey a design idea in presentation image media																																												
		CPL matrix – CPMK <table><tr><td>CPMK</td><td>CPL-3</td><td>CPL-4</td><td>CPL-8</td><td>CPL-9</td></tr><tr><td>CPMK-1</td><td>v</td><td></td><td></td><td></td></tr><tr><td>CPMK-2</td><td></td><td>v</td><td></td><td></td></tr><tr><td>CPMK-3</td><td></td><td></td><td>v</td><td></td></tr><tr><td>CPMK-4</td><td></td><td></td><td>v</td><td></td></tr><tr><td>CPMK-5</td><td></td><td></td><td>v</td><td></td></tr><tr><td>CPMK-6</td><td></td><td></td><td></td><td>v</td></tr><tr><td>CPMK-7</td><td></td><td></td><td></td><td>v</td></tr></table>					CPMK	CPL-3	CPL-4	CPL-8	CPL-9	CPMK-1	v				CPMK-2		v			CPMK-3			v		CPMK-4			v		CPMK-5			v		CPMK-6				v	CPMK-7				v
CPMK	CPL-3	CPL-4	CPL-8	CPL-9																																										
CPMK-1	v																																													
CPMK-2		v																																												
CPMK-3			v																																											
CPMK-4			v																																											
CPMK-5			v																																											
CPMK-6				v																																										
CPMK-7				v																																										
Brief Description MK	This course is a core and basic course that must be followed by 2nd semester students. In this lecture, students are taught to draw according to product design standards, especially with pen media and colored illustrators to get color visualizations and product textures. The objects drawn start from human anatomy as a product user and product design in the form of a final portfolio.																																													
Study Material: Learning Material	Product rendering images with chrome reflective materials Wood product rendering image Product rendering images with textile materials Product texture rendering image Figure of human proportions Product operational drawings Image media exploration Product posters																																													
Book	Main:																																													
	Pipes, Alan, "Drawing for Designers", Laurence King Publishers, 2007																																													



Erik Olofsson & Klara Sjöln, "Design Sketching", KEEOS Design Books, Sweden, 2005 Eissen, Koos, & Steur, Roselien, "Sketching : Drawing Technique for Product Designer", Bis Publisher, 2009 Powell, Dick, "Presentation Techniques: A Guide to Drawing and Presenting Design Ideas", Little, Brown, 1990 Waluyohadi, "Picture Form and Atmosphere", Butawarna Publishing, 2015 Figure Drawing For All It's Worth - Andrew Loomis Product Sketches: From Rough to Refined - Andres Parada Sketching: Drawing Techniques for Product Designers - Koos Eissen and Roselien Steur Sketching the Basics - Koos Eissen and Roselien Steur Drawing for Product Designers - Kevin Henry Perspective Made Easy - Ernest Ralph Norling How to Draw: Drawing and Sketching Objects and Environments - Scott Robertson and Thomas Bertling Supporter:							
Lecturer	Waluyohadi, Andhika Estiyono, MY Alief Samboro, Gunanda Tiara, Irna Arlianti, Ahmad Rieskha Harseno						
Subject requirements	-						
Mg To-	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assessment Weight (%)
		Indicators	Criteria & Forms	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Illustrator media introduction, basic build, material effects	Students can identify drawing tools and basic coloring	Image speed	Shape: Lectures, responses, discussions Method: Case based learning		Figure Drawing For All It's Worth - Andrew Loomis Product Sketches: From Rough to	2



				Assignment: Practice drawing Estimated time : 150 minutes		Refined - Andres Parada	
2	Human anatomy standing, male, female, adult, child, front view, side	Students are able to draw humans proportionally	Accuracy of human proportions	Shape: Lectures, responses, discussions Method: Case based learning Assignment: Practice drawing Estimated time : 150 minutes		Figure Drawing For All It's Worth - Andrew Loomis Product Sketches: From Rough to Refined - Andres Parada	2
3	Human anatomy goes	Humans are capable of drawing moving humans	Accuracy of proportions and basic human skeleton	Shape: Lectures, responses, discussions Method: Case based learning Assignment: Practice drawing Estimated time : 150 minutes		Figure Drawing For All It's Worth - Andrew Loomis Product Sketches: From Rough to Refined - Andres Parada	3



4	Human anatomy pushes and pulls	Students are able to draw humans in action	Accuracy of human body gestures	Shape: Lectures, responses, discussions Method: Case based learning Assignment: Practice drawing Estimated time : 150 minutes		Figure Drawing For All It's Worth - Andrew Loomis Product Sketches: From Rough to Refined - Andres Parada	5
5	Seated human anatomy	Humans are able to draw humans sitting	Accuracy of human body gestures	Shape: Lectures, responses, discussions Method: Case based learning Assignment: Practice drawing Estimated time : 150 minutes		Figure Drawing For All It's Worth - Andrew Loomis Product Sketches: From Rough to Refined - Andres Parada	2
6	Fashion illustration	Humans are able to draw humans in certain clothes	Accuracy of drawing human proportions	Shape: Lectures, responses, discussions Method: Case based learning		Erik Olofsson & Klara Sjöln, "Design Sketching", KEEOS Design Books, Sweden, 2005	3



				Assignment: Practice drawing Estimated time : 150 minutes		Eissen, Koos, & Steur, Roselien, "Sketching : Drawing Technique for Product Designer", Bis Publisher, 2009	
7	Recognition of colored illustrators, shoe objects	Students can draw shoes with material visualization	Precision rendering of textile products	Shape: Lectures, responses, discussions Method: Case based learning Assignment: Practice drawing Estimated time : 150 minutes		Eissen, Koos, & Steur, Roselien, "Sketching : Drawing Technique for Product Designer", Bis Publisher, 2009	2
8	Midterm Evaluation / Midterm Exam						7
9	Rendering ironing product designs	Students can draw renderings of colored ironing products	Accurate rendering of plastic products	Shape: Lectures, responses, discussions Method: Case based learning Assignment: Practice drawing		Eissen, Koos, & Steur, Roselien, "Sketching : Drawing Technique for Product Designer", Bis Publisher, 2009	7



				Estimated time : 150 minutes			
10	Rendering hairdryer product design	Students can draw colored hairdryer product renders	Precision rendering of glossy material products	Shape: Lectures, responses, discussions Method: Case based learning Assignment: Practice drawing Estimated time : 150 minutes		Eissen, Koos, & Steur, Roselien, "Sketching : Drawing Technique for Product Designer", Bis Publisher, 2009	8
11	Rendering furniture product designs	Students are able to draw a rendering of chair products	Precise rendering of wood material products	Shape: Lectures, responses, discussions Method: Case based learning Assignment: Practice drawing Estimated time : 150 minutes		Eissen, Koos, & Steur, Roselien, "Sketching : Drawing Technique for Product Designer", Bis Publisher, 2009	6
12	Rendering motorcycle product designs	Students can render motorcycle automotive products	Accuracy of proportions, color, material	Shape: Lectures, responses, discussions Method:		Eissen, Koos, & Steur, Roselien, "Sketching : Drawing Technique for Product	6



				Case based learning Assignment: Practice drawing Estimated time : 150 minutes		Designer", Bis Publisher, 2009	
13	Rendering car product designs	Students are able to draw large automotive products	Accuracy of proportions, color, material	Shape: Lectures, responses, discussions Method: Case based learning Assignment: Practice drawing Estimated time : 150 minutes		Eissen, Koos, & Steur, Roselien, "Sketching : Drawing Technique for Product Designer", Bis Publisher, 2009	7
14	Porto folio product design: ideation and image view	Students are able to do product ideation	Image speed, orthographic mindset	Shape: Lectures, responses, discussions Method: Case based learning Assignment: Practice drawing Estimated time : 150 minutes		Powell, Dick, "Presentation Techniques: A Guide to Drawing and Presenting Design Ideas", Little, Brown, 1990	10



15	Product design portfolio : perspective image and parse image	Students can determine concept ideas through drawings	Final design selection capabilities	Shape: Lectures, responses, discussions Method: Case based learning Assignment: Practice drawing Estimated time : 150 minutes		Powell, Dick, "Presentation Techniques: A Guide to Drawing and Presenting Design Ideas", Little, Brown, 1990	10
16	End of Semester Evaluation / End of Semester Exam						20



DP234208 DESIGN BASICS 2

SEPULUH NOPEMBER INSTITUTE OF TECHNOLOGY SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM

Document Code

SEMESTER LEARNING PLAN

COURSE (MK)		CODE	MK CLUSTER	CREDIT (credit)		SEMESTER	Date of Compilation
DESIGN BASIS 2		DP234208	Design and Human Factors Study	T=1	P=4	2	November 10, 2022
AUTHORIZATION 		RPS Developer	RMK Coordinator			Head of Study Program	
		Primaditya	Hertina Susandari, S.T., M.T.			Bambang Tristiyono, ST., M.Si	
Learning Outcomes (CP)	CPL-PRODI charged to MK						
	CPL-4	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.					
	CPL-8	Able and skilled in using design process aids that include: manual or digital equipment according to technology and the times.					
	CPL-9	Able to present ideation design concepts through verbal communication, visual media, and prototypes (Models / mock-ups / prototypes) using various relevant technologies.					
	Course Learning Outcomes (CPMK)						
	CPMK-1	Students are able to understand material character, design process, function concept					
	CPMK-2	Students are able to apply the basic elements of dwi-matra & tri-matra design in the form of dwi-matra & tri-matra nirmana compositions in depth.					
	CPMK-3	Students are able to apply the basic principles of design in the form of nirmana dwi-matra & tri-matra compositions in depth.					
	CPMK-4	Students are able and skilled in using manual or digital equipment when making nirmana dwimatra and trimatra works.					
	CPMK-5	Students have oral, written and visual presentation skills when communicating the work of nirmana dwimatra and trimatra.					
		CPL matrix – CPMK					



		CPMK	CPL-4	CPL-8	CPL-9	
		CPMK-1	V	V		
		CPMK-2	V	V	V	
		CPMK-3	V	V	V	
		CPMK-4	V	V		
		CPMK-5	V	V		
Brief Description MK	Integration of theory & training of aesthetic applications, tri-matra design as well as introduction to product object planning with simple functional aspects.					
Study Material: Learning Material	- Visual design elements: line, size, plane, shape, color, texture, shadow, volume, mass, depth - Basic principles of design: repeatability, variety, balance, barrel, proportion - Exploration of material character in accordance with predetermined aspects of function - General introduction of material characters - The design process and functional aspects of product objects in general - Exercises and tasks of tri-matra nirmana composition - Exercises and tasks of designing simple product objects - Basic design logbook 2 - Basic design portfolio 2 .					
Book	Main:	- Burdek, Bernhard E., Design: The History, Theory and Practice of Product Design, Boston, Birkhauser-Publishers for Architecture, 2005 - Bielefeld, Basic Design Ideas, Boston, Springer, 2007 - Lidwell, William, Universal Principles of Design, USA: Rockport Publishers, 2003 - Lawson, Bryan, How Designers Think, London, The Architectural Press Ltd - Williams, Christopher, Origin Form, New York, Architectural Book Publishing Company, 1981 - Masri, Andry., Visual Strategy-Playing with Formalistic and Semiotic to Produce Visual Quality in Design. Yogyakarta : Jalasutra, 2012 - Wong, Wucius, some asaa designed the triimatra. Bandung: ITB Publishers, 1986				
	Supporter:	-				



Lecturer		Primaditya					
Subject requirements		None					
Mg To-	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assessment Weight (%)
		Indicators	Criteria & Forms	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students get to know the scope, rules and plans of Basic Course Design 2	Students remember the scope, rules and basic course plan of Design 2	Students can mention the scope, rules and basic course plans of Design 2	Lectures, responses and discussions.150 minutes		Burdek, 2005 Bielefeld, 2007	0
2	Students know the types, characters and properties of materials as well as aspects of functions and product design processes in general	Students can remember the types, characters and properties of materials as well as aspects of functions and product design processes in general	Students can rewrite a summary of types, characters and properties of materials as well as aspects of functions and product design processes in general	Lectures, responses and discussions.150 minutes		Burdek, 2005 Bielefeld, 2007	5
3	Students are able to make tri-matra compositions by exploring composite materials	Students can explore composite materials applying the basic principles of design to the composition of the tri-matra nirmana	Students are able to make tri-matra nirmana compositions using composite materials neatly and in accordance with the provisions	Lectures, responses, discussions. Conduct material exploration and practice making nirmana trimatra compositions.150 minutes		Ching, 2014 Irawan, 2013 Masri, 2012 Wong, 1986	5
4	Students are able to make tri-matra	Students can explore composite materials	Students are able to make tri-matra nirmana	Lectures, responses, discussions.		Ching, 2014 Irawan, 2013	5



	compositions by exploring composite materials	applying the basic principles of design to the composition of the tri-matra nirmana	compositions using composite materials neatly and in accordance with the provisions	Conduct material exploration and practice making nirmana trimatra compositions.150 minutes		Masri, 2012 Wong, 1986	
5	Students are able to make tri-matra compositions by exploring mixed materials	Students can explore mixed materials applying the basic principles of design to the composition of the tri-matra nirmana	Students are able to make tri-matra nirmana compositions using mixed materials neatly and in accordance with the provisions	Lectures, responses, discussions. Conduct material exploration and practice making nirmana trimatra compositions.150 minutes		Ching, 2014 Irawan, 2013 Masri, 2012 Wong, 1986	5
6	Students are able to make tri-matra compositions by exploring mixed materials	Students can explore mixed materials applying the basic principles of design to the composition of the tri-matra nirmana	Students are able to make tri-matra nirmana compositions using mixed materials neatly and in accordance with the provisions	Lectures, responses, discussions. Conduct material exploration and practice making nirmana trimatra compositions.150 minutes		Ching, 2014 Irawan, 2013 Masri, 2012 Wong, 1986	5
7	Students are able to design product objects with simple functional aspects using rope material	Students can design product objects with simple functional aspects using rope material	Students are able to design product objects with simple functional aspects using rope material properly and in accordance with the provisions	Lectures, responses, discussions. Conduct material exploration and practice making simple product objects150 minutes		Ching, 2014 Irawan, 2013 Masri, 2012 Wong, 1986	5
8	Students are able to design product objects	Students can design product objects with	Students are able to design product objects with simple	Lectures, responses, discussions.		Bielefeld, 2007 Ching, 2014	7



	with simple functional aspects using rope material	simple functional aspects using rope material	functional aspects using rope material properly and in accordance with the provisions	Conduct material exploration and practice making simple product objects150 minutes		Irawan, 2013 Masri, 2012 Wong, 1986	
9	Midterm Evaluation / Midterm Exam						8
10	Students are able to design product objects with simple functional aspects using rod material	Students can design product objects with simple functional aspects using rod material	Students are able to design product objects with simple functional aspects using rod material properly and in accordance with the provisions	Lectures, responses, discussions. Conduct material exploration and practice making simple product objects150 minutes		Bielefeld, 2007 Ching, 2014 Irawan, 2013 Masri, 2012 Wong, 1986	7
11	Students are able to design product objects with simple functional aspects using rod material	Students can design product objects with simple functional aspects using rod material	Students are able to design product objects with simple functional aspects using rod material properly and in accordance with the provisions	Lectures, responses, discussions. Conduct material exploration and practice making simple product objects150 minutes		Bielefeld, 2007 Ching, 2014 Irawan, 2013 Masri, 2012 Wong, 1986	7
12	Students are able to design product objects with simple functional aspects using composite materials	Students can design product objects with simple functional aspects using composite materials	Students are able to design product objects with simple functional aspects using composite materials properly and in accordance with the provisions	Lectures, responses, discussions. Conduct material exploration and practice making simple product objects150 minutes		Bielefeld, 2007 Ching, 2014 Irawan, 2013 Masri, 2012 Wong, 1986	8
13	Students are able to design product objects with simple functional aspects using composite materials	Students can design product objects with simple functional aspects using composite materials	Students are able to design product objects with simple functional aspects using composite materials properly and in accordance with the provisions	Lectures, responses, discussions. Conduct material exploration and practice making simple product objects150 minutes		Bielefeld, 2007 Ching, 2014 Irawan, 2013 Masri, 2012 Wong, 1986	8



14	Students are able to design product objects with simple functional aspects using mixed materials	Students can design product objects with simple functional aspects using mixed materials	Students are able to design product objects with simple functional aspects using mixed materials well and in accordance with the provisions	Lectures, responses, discussions. Conduct material exploration and practice making simple product objects 150 minutes		Bielefeld, 2007 Ching, 2014 Irawan, 2013 Masri, 2012 Wong, 1986	8
15	Students are able to make tri-matra compositions by exploring mixed materials	Students can explore mixed materials applying the basic principles of design to the composition of the tri-matra nirmana	Students are able to make tri-matra nirmana compositions using mixed materials neatly and in accordance with the provisions	Lectures, responses, discussions. Conduct material exploration and practice making nirmana trimatra compositions. 150 minutes		Bielefeld, 2007 Ching, 2014 Irawan, 2013 Masri, 2012 Wong, 1986	8
16	End of Semester Evaluation / End of Semester Exam						8

**DP234309 DESIGN METHODS**

	SEPULUH NOPEMBER INSTITUTE OF TECHNOLOGY SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code
SEMESTER LEARNING PLAN						
COURSE (MK)	CODE	MK CLUSTER	CREDI T (credit)		SEMESTER	Date of Compilation
DESIGN METHODS			T = ?	P= ?	3	January 24, 2023
AUTHORIZATION	RPS Developer	RMK Coordinato r	Head of Study Program			
	● Ellya Zulaikha, S.T., M.Sn., Ph.D		Bambang Tristiyono, S.T., M.Si			
Learning Outcomes (CP)	CPL-PRODI charged to MK					
	CPL-2	Able to study and utilize science and technology in order to apply it to the field of Product Design, and able to make appropriate decisions from the results of their own work or group work in the form of final project reports or other forms of learning activities whose output is equivalent to the final project through logical, critical, systematic and innovative thinking.				
	CPL-3	Able to manage self-learning, and develop themselves as lifelong learners to compete at national, and international levels, in order to make a real contribution to solving problems by implementing information and communication technology and paying attention to sustainability principles and understanding technology-based entrepreneurship.				



	CPL-4	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.																																														
	CPL-5	Able to understand and apply knowledge, insight and science related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural, economic and business, entrepreneurship, code of ethics and IPR.																																														
	CPL-7	Able to research problems, formulate and publish design needs and solutions for the present or future using relevant design and research methodologies.																																														
	Course Learning Outcomes (CPMK)																																															
	CPMK-1	Students understand the steps to develop a design concept																																														
	CPMK-2	Students understand the steps of communicating design concepts and specifications																																														
	CPMK-3	Students understand the steps to collaborate in a multi-disciplinary field of work by utilizing their knowledge and design skills.																																														
	CPMK-4	Students understand the theoretical concepts of design																																														
	CPMK-5	Students understand the principles of design methodology																																														
	CPMK-6	Students understand the concept of user centered design																																														
		CPL matrix – CPMK <table><tr><td>CPMK</td><td>CPL-2</td><td>CPL-3</td><td>CPL-4</td><td>CPL-5</td><td>CPL-7</td></tr><tr><td>CPMK-1</td><td>V</td><td>V</td><td>V</td><td>V</td><td>V</td></tr><tr><td>CPMK-2</td><td></td><td></td><td>V</td><td></td><td>V</td></tr><tr><td>CPMK-3</td><td>V</td><td>V</td><td>V</td><td>V</td><td></td></tr><tr><td>CPMK-4</td><td></td><td></td><td>V</td><td>V</td><td>V</td></tr><tr><td>CPMK-5</td><td></td><td></td><td></td><td></td><td>V</td></tr><tr><td>CPMK-6</td><td></td><td></td><td>V</td><td>V</td><td></td></tr></table>					CPMK	CPL-2	CPL-3	CPL-4	CPL-5	CPL-7	CPMK-1	V	V	V	V	V	CPMK-2			V		V	CPMK-3	V	V	V	V		CPMK-4			V	V	V	CPMK-5					V	CPMK-6			V	V	
	CPMK	CPL-2	CPL-3	CPL-4	CPL-5	CPL-7																																										
	CPMK-1	V	V	V	V	V																																										
	CPMK-2			V		V																																										
CPMK-3	V	V	V	V																																												
CPMK-4			V	V	V																																											
CPMK-5					V																																											
CPMK-6			V	V																																												
Brief Description MK	The Design Method course is a supporting course for the design course so that students understand the design process and know the various techniques that need to be taken in product design, ranging from conceptualization, solving design problems, Design Thinking:																																															



	starting from the ideation phase (to find as many ideas as possible) and the implementation phase (including in making design decisions) and factors that affect design.				
Study Material: Learning Material	1. Definition of Product Design and its position in the scientific family and its development from time to time 2. Challenges in the design process 3. Appreciation and identification of product concepts 4. Troubleshooting methods 5. Design thinking 6. Identify the problem 7. Brainstorming and random input 8. Method Analysis in Ideation 9. Analysis of Emotional Design and Four Pleasures 10. User Testing and Prototyping 11. Presentation and communication skills				
Book	<table border="1"> <tr> <td>Main:</td><td> 1. Cross, N. (2021). <i>Engineering design methods: strategies for product design</i>. John Wiley & Sons. 2. Uebernickel, F., Jiang, L., Brenner, W., Pukall, B., Naef, T., & Schindlholzer, B. (2020). <i>Design thinking: The handbook</i>. World Scientific. 3. Meinel, C., Leifer, L. (2022). <i>Design Thinking Research: Achieving Real Innovation</i>. Springer </td></tr> <tr> <td>Supporter:</td><td> 1. Hoffmann, A. R. (2019). <i>Sketching as Design Thinking</i>. Routledge. 2. Kamrani, A. K., Azimi, M., & Al-Ahmari, A. M. (Eds.). (2013). <i>Methods in Product Design: New Strategies in Reengineering</i>. CRC Press. 3. Rizzi, C., Andrisano, A. O., Leali, F., Gherardini, F., Pini, F., & Vergnano, A. (2019). Design tools and methods in industrial engineering. In <i>Conference proceedings ADM</i> (p. 107). </td></tr> </table>	Main:	1. Cross, N. (2021). <i>Engineering design methods: strategies for product design</i>. John Wiley & Sons. 2. Uebernickel, F., Jiang, L., Brenner, W., Pukall, B., Naef, T., & Schindlholzer, B. (2020). <i>Design thinking: The handbook</i>. World Scientific. 3. Meinel, C., Leifer, L. (2022). <i>Design Thinking Research: Achieving Real Innovation</i>. Springer	Supporter:	1. Hoffmann, A. R. (2019). <i>Sketching as Design Thinking</i>. Routledge. 2. Kamrani, A. K., Azimi, M., & Al-Ahmari, A. M. (Eds.). (2013). <i>Methods in Product Design: New Strategies in Reengineering</i>. CRC Press. 3. Rizzi, C., Andrisano, A. O., Leali, F., Gherardini, F., Pini, F., & Vergnano, A. (2019). Design tools and methods in industrial engineering. In <i>Conference proceedings ADM</i> (p. 107).
Main:	1. Cross, N. (2021). <i>Engineering design methods: strategies for product design</i>. John Wiley & Sons. 2. Uebernickel, F., Jiang, L., Brenner, W., Pukall, B., Naef, T., & Schindlholzer, B. (2020). <i>Design thinking: The handbook</i>. World Scientific. 3. Meinel, C., Leifer, L. (2022). <i>Design Thinking Research: Achieving Real Innovation</i>. Springer				
Supporter:	1. Hoffmann, A. R. (2019). <i>Sketching as Design Thinking</i>. Routledge. 2. Kamrani, A. K., Azimi, M., & Al-Ahmari, A. M. (Eds.). (2013). <i>Methods in Product Design: New Strategies in Reengineering</i>. CRC Press. 3. Rizzi, C., Andrisano, A. O., Leali, F., Gherardini, F., Pini, F., & Vergnano, A. (2019). Design tools and methods in industrial engineering. In <i>Conference proceedings ADM</i> (p. 107).				
Lecturer	Ellya Zulaikha, S.T., M.Sn., Ph.D				
Subject requirements	-				



Mg To-	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assesment Weight (%)
		Indicators	Criteria & Forms	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students are able to identify the source of the problem in a case study of existing events and/or products	Students are able to describe the details of the steps to find problems using mind mapping in detail and comprehensively in accordance with the insights and data obtained	Criterion: Accuracy and insight Shape: Non test	Shape: Lecture Discussion Self-task Method: Discussion Secondary information and data search Assignment: Product identification Estimated time : 1x2x50'	-	Book: 1. Cross, N. (2021). <i>Engineering design methods: strategies for product design</i> . John Wiley & Sons. 2. Kamrani, A. K., Azimi, M., & Al-Ahmari, A. M. (Eds.). (2013). <i>Methods in Product Design: New Strategies in Reengineering</i> . CRC Press. 3. Rizzi, C., Andrisano, A. O., Leali, F., Gherardini, F., Pini, F., & Vergnano, A. (2019). <i>Design tools and methods in industrial</i>	2.5



						engineering. In <i>Conference proceedings ADM</i> (p. 107).	
2	Students are able to analyze aesthetic aspects, comfort and user safety on a product	Students recognize and know based on the data obtained to assess and categorize the types / types, functions, characteristics and users of case study products	Criterion: Accuracy and insight Shape: Non test	Shape: Lecture Discussion Self-task Method: Discussion Secondary information and data search Estimated time : 1x2x50'	-	Book: 1. Cross, N. (2021). <i>Engineering design methods: strategies for product design.</i> John Wiley & Sons. 2. Kamrani, A. K., Azimi, M., & Al- Ahmari, A. M. (Eds.). (2013). <i>Methods in Product Design: New Strategies in Reengineering.</i> CRC Press. 3. Rizzi, C., Andrisano, A. O., Leali, F., Gherardini, F., Pini, F., & Vergnano, A. (2019). Design tools and methods in industrial engineering. In <i>Conference</i>	2.5



						<i>proceedings ADM (p. 107).</i>	
3	Students are able to synthesize needs from the results of the analysis	Students get points from the analysis in the form of Design Requirements & Objectives	Criterion: Sensitivity and mastery Shape: Assignment	Shape: Lecture Discussion Self-task Method: Discovery learning Assignment: Compilation of analysis results (DRnO) Estimated time : 1x2x50'	-	Book: 1. Cross, N. (2021). <i>Engineering design methods: strategies for product design</i> . John Wiley & Sons. 2. Kamrani, A. K., Azimi, M., & Al-Ahmari, A. M. (Eds.). (2013). <i>Methods in Product Design: New Strategies in Reengineering</i> . CRC Press. 3. Rizzi, C., Andrisano, A. O., Leali, F., Gherardini, F., Pini, F., & Vergnano, A. (2019). Design tools and methods in industrial engineering. In <i>Conference proceedings ADM (p. 107)</i> .	5



4	Students are able to present designs orally, in writing, and multimedia in the form of abstractions and visuals, in detail their functions	Students are able to present the results of analysis, synthesis and temporary problem solving proposals	Criterion: Accuracy and sensitivity Shape: Non test	Shape: Oral/written presentation Method: Case based learning Assignment: Design presentation Estimated time : 1x2x50'	-	Book: 1. Cross, N. (2021). <i>Engineering design methods: strategies for product design</i> . John Wiley & Sons. 2. Uebernickel, F., Jiang, L., Brenner, W., Pukall, B., Naef, T., & Schindlholzer, B. (2020). <i>Design thinking: The handbook</i> . World Scientific. 3. Meinel, C., Leifer, L. (2022). <i>Design Thinking Research: Achieving Real Innovation</i> . Springer	5
5	Students are able to apply technology and equipment related to multi-dimensional design representation (2D and 3D), in design development.	Students apply problem-solving proposals while using representative media that is able to communicate	Criterion: Accuracy, representative Shape: Non test	Shape: Studio practice Method: Case based learning Assignment: Provide design examples/Create design alternatives	-	Book: 1. Cross, N. (2021). <i>Engineering design methods: strategies for product design</i> . John Wiley & Sons. 2. Uebernickel, F., Jiang, L., Brenner, W., Pukall, B., Naef, T., &	5



		problem-solving ideas		Estimated time : 1x2x50'		Schindlholzer, B. (2020). <i>Design thinking: The handbook</i>. World Scientific. 3. Meinel.C, Leifer.L. (2022). <i>Design Thinking Research: Achieving Real Innovation</i>. Springer	
6	Students are able to present alternative initial design ideas for problem solving	Students present several alternative problem solving with details and variations in aesthetic aspects, function, comfort and product safety	Criterion: Accuracy, mastery, sensitivity Shape: Non test	Shape: Studio practice Method: Case based learning Assignment: Provide design examples/Create design alternatives Estimated time : 1x2x50'	-	Book: 1. Cross, N. (2021). <i>Engineering design methods: strategies for product design</i>. John Wiley & Sons. 2. Uebernickel, F., Jiang, L., Brenner, W., Pukall, B., Naef, T., & Schindlholzer, B. (2020). <i>Design thinking: The handbook</i>. World Scientific. 3. Meinel.C, Leifer.L. (2022). <i>Design Thinking Research:</i>	10



						<i>Achieving Real Innovation. Springer</i>	
7	Students are able to carry out the ideation process	Students are able to determine the best problem solving from the various alternatives that have been offered the most ideal	Criterion: Accuracy, mastery, sensitivity of form, fulfillment of aspects of form, function, comfort and safety Shape: Non test	Shape: Studio practice Method: Case based learning Assignment: Provide design examples/Create design alternatives Estimated time : 2x2x50'	-	Book: 1. Cross, N. (2021). <i>Engineering design methods: strategies for product design</i> . John Wiley & Sons. 2. Uebernickel, F., Jiang, L., Brenner, W., Pukall, B., Naef, T., & Schindlholzer, B. (2020). <i>Design thinking: The handbook</i> . World Scientific. 3. Meinel.C, Leifer.L. (2022). <i>Design Thinking Research: Achieving Real Innovation</i> . Springer	10
8	Students know the methods of developing product design ideas according to case studies	Students are able to determine product development methods according to case studies	Criterion: Accuracy, mastery, sensitivity Shape: Non test	Shape: Lecture Discussion Self-task Method: Case based learning	-	Book: 1. Cross, N. (2021). <i>Engineering design methods: strategies for product design</i> . John Wiley & Sons.	



		that will be used as an evaluation of the results of receiving input from users		Assignment: Development processing practices using one of the methods Estimated time : 2x2x50'		2. Kamrani, A. K., Azimi, M., & Al-Ahmari, A. M. (Eds.). (2013). <i>Methods in Product Design: New Strategies in Reengineering</i> . CRC Press. 3. Rizzi, C., Andrisano, A. O., Leali, F., Gherardini, F., Pini, F., & Vergnano, A. (2019). Design tools and methods in industrial engineering. In <i>Conference proceedings ADM</i> (p. 107).	
9	Students are able to understand users by using empathy maps, personas, and user mapping journeys	Students obtain results using the selected method that is most relevant according to the case study	Criterion: Accuracy, mastery, sensitivity Shape: Non test	Shape: Lecture Discussion Self-task Method: Case based learning Assignment :	-	Book: 1. Uebernickel, F., Jiang, L., Brenner, W., Pukall, B., Naef, T., & Schindlholzer, B. (2020). <i>Design thinking: The handbook</i> . World Scientific.	5



				Create empathy, persona and CJM maps Estimated time : 1x2x50'		2. Meinel.C, Leifer.L. (2022). <i>Design Thinking Research: Achieving Real Innovation</i> . Springer	
10	Students understand the Design Thinking process through value propositions, card sorting, drawing boards, affinity diagrams, and needs identification	Students apply one method to design thinking and are used to evaluate the results of temporary problem solving	Criterion: Accuracy, mastery, sensitivity Shape: Non test	Shape: Lecture Discussion Self-task Method: Case based learning Assignment: Create maps according to the Design Thinking process Estimated time : 1x2x50'	-	Book: 1. Uebernickel, F., Jiang, L., Brenner, W., Pukall, B., Naef, T., & Schindlholzer, B. (2020). <i>Design thinking: The handbook</i> . World Scientific. 2. Meinel.C, Leifer.L. (2022). <i>Design Thinking Research: Achieving Real Innovation</i> . Springer	10
11	Students are able to ideate and select designs as an application of Design Thinking	Students get new design alternatives from the results of applying the design thinking method	Criterion: Accuracy, mastery, sensitivity Shape: Non test	Shape: Lecture Discussion Self-task Method: Case based learning Assignment:	-	Book: 1. Uebernickel, F., Jiang, L., Brenner, W., Pukall, B., Naef, T., & Schindlholzer, B. (2020). <i>Design thinking: The</i>	5



				Image ideation and selection process Estimated time : 1x2x50'		<i>handbook. World Scientific.</i> 2. Meinel.C, Leifer.L. (2022). <i>Design Thinking Research: Achieving Real Innovation.</i> Springer 3. Hoffmann, A. R. (2019). <i>Sketching as Design Thinking.</i> Routledge.	
12	Students are able to apply the implementation of Design Thinking in the form of prototyping	Students get a new form that is selected as a result of the evaluation	Criterion: Accuracy, mastery, sensitivity Shape: Non test	Shape: Studio practice Method: Case based learning Assignment: Simulated 3D drawing Estimated time : 1x2x50'	-	Book: 1. Uebernickel, F., Jiang, L., Brenner, W., Pukall, B., Naef, T., & Schindlholzer, B. (2020). <i>Design thinking: The handbook.</i> World Scientific. 2. Meinel.C, Leifer.L. (2022). <i>Design Thinking Research: Achieving Real Innovation.</i> Springer 3. Hoffmann, A. R. (2019). <i>Sketching as</i>	5



						<i>Design Thinking.</i> Routledge.	
13	Students are able to conduct user testing with capture feedback	Students get input from users who will be used as product refinement	Criterion: Accuracy, sensitivity, mastery Shape: Non test	Shape: Lecture Discussion Self-task Method: Case based learning Assignment: Results of interviews and deepening of users Estimated time : 1x2x50'	-	Book: 1. Uebernickel, F., Jiang, L., Brenner, W., Pukall, B., Naef, T., & Schindlholzer, B. (2020). <i>Design thinking: The handbook.</i> World Scientific. 2. Meinel.C, Leifer.L. (2022). <i>Design Thinking Research: Achieving Real Innovation.</i> Springer	5
14	Students are able to conduct user feedback and develop products based on recommendations	Students get input on more detailed improvements to product components that are still problematic	Criterion: Precision, mastery, form sensitivity, aesthetics and empathetic ability Shape: Non test	Shape: Lecture Discussion Self-task Method: Case based learning Assignment: Interviews and usability testing	-	Book: 1. Uebernickel, F., Jiang, L., Brenner, W., Pukall, B., Naef, T., & Schindlholzer, B. (2020). <i>Design thinking: The handbook.</i> World Scientific. 2. Meinel.C, Leifer.L. (2022). <i>Design Thinking Research:</i>	15



				Estimated time : 1x2x50'		<i>Achieving Real Innovation. Springer</i>	
15	Students are able to analyze the results of user testing using Six Thinking Hats	Students get testing data using the Six Thinking Hats method as a result of different evaluation methods	Criterion: Precision, mastery, form sensitivity and aesthetics Shape: Non test	Shape: Lecture Discussion Self-task Method: Case based learning Assignment: Six Thinking Hats Mapping Estimated time : 1x2x50'	-	Book: 1. Uebernickel, F., Jiang, L., Brenner, W., Pukall, B., Naef, T., & Schindlholzer, B. (2020). <i>Design thinking: The handbook.</i> World Scientific. 2. Meinel.C, Leifer.L. (2022). <i>Design Thinking Research: Achieving Real Innovation.</i> Springer	15
16	End of Semester Evaluation / End of Semester Exam: Students are able to compile a Design Method Portfolio						100



DP234310 ERGONOMICS

	INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code
SEMESTER LEARNING PLAN						
COURSE (MK)	CODE	MK CLUSTER	CREDIT (credit)		SEMESTER	Date of Compilation
ERGONOMICS	DP234310	Design Studies and Human Factors	T=2	P=1	3	January 8, 2023
AUTHORIZATION	RPS Developer		RMK Coordinator		Head of Study Program	
	Hertina Susandari, S.T., M.T.		Hertina Susandari, S.T., M.T.		Bambang Tristiyono, ST., M.Si	
Learning Outcomes (CP)	CPL-PRODI charged to MK					
	CPL-5-	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.				
	CPL-8-	Able and skilled in using design process aids that include: manual or digital equipment according to technology and the times.				
	CPL-9	Able to present ideation design concepts through verbal communication, visual media, and prototypes (Models / mock-ups / prototypes) using various relevant technologies.				
	Course Learning Outcomes (CPMK)					
	CPMK-1-	Students are able to implement aspects of physical ergonomics in designing complex physical environment designs: <i>workstations, cabins</i> , etc.				
	CPMK-2-	Students are able to carry out ergonomic experiments in design research				



	CPMK-3	Students are able to implement aspects of cognitive ergonomics in designing interface designs, both in tangible and intangible products																							
	CPMK-4	Students are able to use practicum equipment / applications to support ergonomic experiments																							
		CPL matrix – CPMK <table><tr><td>CPMK</td><td>CPL-5</td><td>CPL-8</td><td>CPL - 9</td></tr><tr><td>CPMK-1</td><td>V</td><td>V</td><td></td></tr><tr><td>CPMK-2</td><td></td><td>V</td><td>V</td></tr><tr><td>CPMK-3</td><td>V</td><td>V</td><td></td></tr><tr><td>CPMK-4</td><td></td><td>V</td><td>V</td></tr></table>				CPMK	CPL-5	CPL-8	CPL - 9	CPMK-1	V	V		CPMK-2		V	V	CPMK-3	V	V		CPMK-4		V	V
CPMK	CPL-5	CPL-8	CPL - 9																						
CPMK-1	V	V																							
CPMK-2		V	V																						
CPMK-3	V	V																							
CPMK-4		V	V																						
Brief Description MK	A scientific discipline that studies the understanding of interactions between humans and other elements of a system and profession, which applies theories, principles, data and methods to design with the aim of optimizing human capabilities and overall system performance. Ergonomics develops a holistic approach by considering and taking into account physical, cognitive, social, organizational environmental factors and other relevant factors																								
Study Material: Learning Material	Scope of ergonomics: Physical ergonomics: human anatomy and posture, anthropometry, biomechanics, and human physical character. Cognitive ergo: perception, memory, visual, thinking, human-machine interaction, reliability, burnout, and <i>usability testing</i> . Elements of ergonomics: Characteristics of human perception (touch, sight, taste, smell, hearing) and their application to the design of the work environment Anthropometry and its application to design subjects (design of workstations, public facilities, etc.) Biomechanics and its application to the subject of design (design of hand work tools, bags / carrying aids, etc.)																								
Book	Main:																								
		• Lee, John D et al, <i>Designing for People – An Introduction to Human Factors Engineering</i> , 2017																							
	Supporter:																								



	• Pheasant, Stephen and Haslegrave, Christine M, <i>Bodyspace – Anthropometry, Ergonomics and the Design of Works</i>, 3rd edition, • Saffer, Dan, 2006, <i>Designing for Interaction</i> • Norman, Don, <i>The Design of Everyday Things</i> • Widyanti, Ari and Pratama, Gradiyan Budi, 2022, <i>Cognitive Ergonomics</i>,						
Lecturer	Hertina Susandari						
Subject requirements	None						
Mg To-	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assessment Weight (%)
		Indicators	Criteria & Forms	Offline)	Online)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	• Students are familiar with the scope, rules and plans of Ergonomics Lectures • Students understand the basic concepts of Ergonomics.	• Students remember the scope, rules and plans of Ergonomics courses • Students can explain the basic concepts of Ergonomics	Criterion: Accuracy Shape: Non test	Shape: Lecture Discussion Time: 150 minutes		Lee, John D et al, 2017	0



2,3,4	- Students understand the concept of Anthropometry, including: statistical data, static dimensions, dynamic dimensions and percentiles. - Students can take body measurements using anthropometric chairs/anthropometers.	- Students can explain the concept of Anthropometry, including: statistical data, static dimensions, dynamic dimensions and percentiles. - Students can use body measurement equipment properly and correctly	Criterion: Accuracy Shape: Non test Assignment	Shape: Lecture Discussion Response Time: 2 x 100" theory 2 x 50" Response Shape: Practicum Time: Practicum 1 x 150"		Lee, John D et al, 2017 Pheasant, Stephen and Haslegrave, Christine M,	10
5,6	- Students understand the concept of environmental ergonomics, including: noise, air conditioning and lighting - Students can take measurements of	Students can explain the concept of environmental ergonomics, including: noise, air conditioning and lighting properly and correctly	Criterion: Accuracy Shape: Non test Assignment Criterion:	Shape: Lecture Discussion Response Time: 1 x 100" theory 1 x 100" Response		Lee, John D et al, 2017 Pheasant, Stephen and Haslegrave, Christine M,	10



	environmental ergonomics	Students can use equipment / take measurements of environmental ergonomics (including: lux meters, sound level meters, etc.) properly and correctly	Accuracy Shape: Non test	Shape: Practicum Time: Practicum 1 x 100"			
7,8	- Students can implement aspects of physical ergonomics in designing complex physical environment designs, such as: work stations, cabins, etc. - Students are able to carry out physical ergonomics experiments using the latest applications (ergo fellow, Human CAD, etc.)	- Students can apply aspects of physical ergonomics in designing complex physical environment designs properly and correctly - Students can simulate physical ergonomics digitally precisely.	Criterion: Accuracy Study acumen Shape: Non test Discussion Assignment	Shape: Lecture Discussion Response Time: 1 x 50" theory 1 x 100" Response Shape: Practicum Time: Practicum 1 x 150"		Lee, John D et al, 2017 Pheasant, Stephen and Haslegrave, Christine M,	30



9	MIDTERM EVALUATION						20
10	Students understand the concept of cognitive ergonomics: <i>human-computer interaction</i> and its application to design subjects	Students can explain the concept of cognitive ergonomics: <i>human-computer interaction</i> comprehensively	Criterion: Accuracy Shape: Non test Discussion	Shape: Lecture Discussion Time: 1 x 75" theory 1 x 75" Response		Lee, John D et al, 2017 Widyanti, Ari and Pratama, Gradiyan Budi, 2022 Saffer, Dan, 2006	0
12, 13	Students understand the concept of <i>Visual Ergonomics</i> and its application to the subject of design Students can use the latest visual ergonomics applications (eye tracking, etc.)	Students can explain the concept of Visual Ergonomics comprehensively Students can use the latest visual ergonomics applications properly and correctly	Criterion: Accuracy Shape: Non test Discussion Criterion: Accuracy Shape: Non test Assignment	Shape: Lecture Discussion Time: 1 x 50" theory 1 x 100" Response	Shape: Practicum Time: Practicum 1x150"	Lee, John D et al, 2017 Widyanti, Ari and Pratama, Gradiyan Budi, 2022 Saffer, Dan, 2006	10

[illegible]



DP234311 PRODUCT SEMANTICS

	INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code	
SEMESTER LEARNING PLAN							
COURSE (MK)	CODE	MK CLUSTER		CREDIT (credit)		SEMESTER	Date of Compilation
PRODUCT SEMANTICS	DP234311	Design and Human Factors Study		T=2	P=1	3 (Three)	November 17, 2022
AUTHORIZATION	RPS Developer		RMK Coordinator			Head of Study Program	
	Arie Kurniawan, S.T, M.Ds		Hertina Susandari, S.T., M.T.			Bambang Tristiyono, S.T., M.Si	
Learning Outcomes (CP)	CPL-PRODI charged to MK						
	CPL-1-	Able to show attitudes and characters that reflect: piety to God Almighty, ethics and integrity, noble ethics, sensitivity and care for social and environmental problems, respect cultural differences and pluralism, uphold law enforcement prioritizing the interests of the nation and the wider community, through creativity and innovation, excellence, strong leadership, synergy, and other potentials possessed to achieve maximum results.					
	CPL-3	Able to manage self-learning, and develop themselves as lifelong learners to compete at national, and international levels, in order to make a real contribution to solving problems by implementing information and communication technology and paying attention to sustainability principles and understanding technology-based entrepreneurship.					
	CPL-4	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.					



	CPL-5	Able to understand and apply knowledge, insight and science related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural, economic and business, entrepreneurship, code of ethics and IPR.																																								
	CPL-8	Able and skilled in using design process aids that include: manual or digital equipment according to technology and the times.																																								
	Course Learning Outcomes (CPMK)																																									
	CPMK-1-	Students understand product design appreciation, which is fully aware so that they are able to properly assess the existence of product design, especially in sign language																																								
	CPMK-2-	Students understand the theoretical concepts of product design: (1) function, (2) aesthetics, (3) economic, (4) social, and (5) technology in general in product development																																								
	CPMK-3	Students are able to describe the values contained in the design product and identify the structure and context of the design																																								
	CPMK-4	Students are able to do creative exploration, form search and interpret related sign systems																																								
	CPMK-5	Students master the ability of product appreciation, feel the marks on the product structure and read the meaning of signs on the unity of the product form																																								
		CPL matrix – CPMK <table><tr><td>CPMK</td><td>CPL-1</td><td>CPL-3</td><td>CPL-4</td><td>CPL-5</td><td>CPL-8</td></tr><tr><td>CPMK-1</td><td>v</td><td>v</td><td>v</td><td>v</td><td>v</td></tr><tr><td>CPMK-2</td><td>v</td><td></td><td></td><td>v</td><td></td></tr><tr><td>CPMK-3</td><td>v</td><td></td><td></td><td>v</td><td></td></tr><tr><td>CPMK-4</td><td>v</td><td></td><td>v</td><td></td><td></td></tr><tr><td>CPMK-5</td><td>v</td><td>v</td><td></td><td></td><td>v</td></tr></table>					CPMK	CPL-1	CPL-3	CPL-4	CPL-5	CPL-8	CPMK-1	v	v	v	v	v	CPMK-2	v			v		CPMK-3	v			v		CPMK-4	v		v			CPMK-5	v	v			v
CPMK	CPL-1	CPL-3	CPL-4	CPL-5	CPL-8																																					
CPMK-1	v	v	v	v	v																																					
CPMK-2	v			v																																						
CPMK-3	v			v																																						
CPMK-4	v		v																																							
CPMK-5	v	v			v																																					
Brief Description MK	A course that studies signs, especially the presence of marks in product design as part of product aesthetics and value. Product semantics itself is part of the branch of semiotics that seeks to interpret and implement the meaning of signs on products.																																									



Study Material: Learning Material	Study Material : 1. The theoretical basis of Semiotics and semiotic figures in product design 2. Sintactic, Semantic and Pracmatic 3. Product structure 4. Ferdinan de Saussure Dichotomy 5. Charles Sanders Pierce's Triadic 6. Product semantic dimensions 7. Emotional Semantics 8. Empirical Semantics 9. Cognate Semantics 10. Contextual Semantics 11. Functional Semantics 12. Evaluative Semantics 13. Cultural Semantics 14. Semantics Differential and Product Development	
Book	Main:	
	1. Kurniawan, Arie. 2018. Peek & Seek: System Design. Surabaya : Despro ITS 2. Kurniawan, Arie. 2022. Design Produced Appreciation . Surabaya: Despro ITS 3. Martin, Bella and Bruce Hanington. 2010. Universal Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions. Massachusetts: Rockport Publishers 4. Martin, Bella and Bruce Hanington. 2010. Universal Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions. Massachusetts: Rockport Publishers 5. Vihma, Susan (ed). 2003 Semantic and Aesthetic Functions in Design. Report of workshop and three papers of the 2nd Nordcode Seminar, Finland:UIAH Helsinki.	
	Supporter:	
	1. Lawson, Bryan.2012. How Designers Think, London: The Architectural Press Ltd 2. Norman, Donald A. , Emotional Design, Basic Books, 2004	
Lecturer	Arie Kurniawan, S.T, M.Ds.	



Subject requirements		-					
Mg To-	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assessment Weight (%)
		Indicators	Criteria & Forms	Offline)	Online)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students know the basis of semantic theory and semiotic figures in product design (C1, A1, P1)	Accuracy in delivering descriptions of semantics and semiotic figures in product design	Criterion: Accuracy insight Shape: Non test Discussion	Shape: Lecture Response Discussion Method: Student Centre Learning (SCL) – Class discussion Assignment: Convey opinions and resumes of lecture discussions related to semiotic theory Estimated Time : 1x3x50 = 150 minutes	-	Material: 'Semiotics – Product Design' Book: Kurniawan, Arie. 2018. Peek &; Seek: System Design. Surabaya : Despro ITS	5
2	Students are able to explain sign theory	Clarity in the delivery of	Criterion:	Shape: Lecture	-	Material:	5



	related to syntactic, semantic and pragmatic (C2, A1, P1)	descriptions and examples of syntactic, semantic and pragmatic studies	Accuracy, mastery Shape: Non test Discussion	Response Discussion Method: Non SCL- Theory lectures Assignment: Submit opinions and resume lecture discussions Estimated Time : 1x3x50 = 150 minutes		The Basic - Syntac, semantic, pragmatic Book: Kurniawan, Arie. 2018. Peek & Seek: System Design. Surabaya : Despro ITS	
3	Students are able to interpret product structures on the basis of their respective sensitivities (C2, A2, P1)	Syntactic depth and product structure	Criterion: Accuracy, mastery Shape: Non test Discussion	Shape: Lecture Response Discussion Method: Case methods Assignment: Submit opinions and resume lecture discussions Estimated Time : 1x3x50 = 150 minutes	-	Material: Product Structure and its development Book: Kurniawan, Arie. 2018. Peek & Seek: System Design. Surabaya : Despro ITS	5
4	Students are able to explain their understanding of Ferdinand de Saussure's	Clarity in the delivery of the basic theory of semiotics based on the	Criterion: Accuracy, mastery Shape: Non test Discussion	Shape: Lecture Response Discussion Method:	-	Material: Ferdinand de Saussure dichotomy Book:	5



	dichotomy theory (C2, A2, P1)	understanding of the dichotomy of Ferdinand de Saussure		Student Centre Learning (SCL) – Class discussion Assignment: Submit opinions and resume lecture discussions Estimated Time : 1x3x50 = 150 minutes		Kurniawan, Arie. 2018. Peek & Seek: System Design. Surabaya : Despro ITS	
5	Students are able to explain their understanding of Charles Sanders Pierce's triadic theory (C2, A2, P1)	Clarity in the delivery of the basic theory of semiotics based on Charles Sanders Pierce's triadic understanding	Criterion: Accuracy, mastery Shape: Non test Discussion	Shape: Lecture Response Discussion Method: Student Centre Learning (SCL) – Class discussion Assignment: Submit opinions and resume lecture discussions Estimated Time : 1x3x50 = 150 minutes	-	Material: Triadic pierce Book: Kurniawan, Arie. 2018. Peek & Seek: System Design. Surabaya : Despro ITS	5
6	Students are able to give examples of product development and product semantic imence (C2, A2, P1)	Depth of product development reviews according to	Criterion: Accuracy, mastery Shape: Non test Discussion	Shape: Lecture Response Discussion Method:	-	Material: Semantic dimension Book:	5



		semantic dimensions		Student Centre Learning (SCL) – Class discussion Assignment: Submit opinions and resume lecture discussions Estimated Time : 1x3x50 = 150 minutes		Kurniawan, Arie. 2018. Peek & Seek: System Design. Surabaya : Despro ITS	
7	Students are able to detect emotional semantics in products (C4, A2, P2)	Depth and sensitivity in product development with emotional semantics approach	Criterion: Accuracy, mastery Shape: Non test Discussion	Shape: Lecture Response Discussion Method: Case methods Assignment: Product sketches with an emotional semantics approach Estimated Time : 1x3x50 = 150 minutes	-	Material: Emotional semantic & product developments Book: Kurniawan, Arie. 2018. Peek & Seek: System Design. Surabaya : Despro ITS	5
8	Midterm Evaluation / Midterm Exam = quiz test						10
9	Students are able to detect empirical semantics in products (C4, A2, P2)	Depth and sensitivity in product development with empirical	Criterion: Accuracy, mastery Shape: Non test Discussion	Shape: Lecture Response Discussion Method: Case methods	-	Material: Empirical semantic & product developments Book:	5



		semantics approach		Assignment: Product sketch with empirical semantics approach Estimated Time : 1x3x50 = 150 minutes		Kurniawan, Arie. 2018. Peek & Seek: System Design. Surabaya : Despro ITS	
10	Students are able to detect cognate semantics in products (C4, A2, P2)	Depth and sensitivity in product development with a cognate semantics approach	Criterion: Accuracy, mastery Shape: Non test Discussion	Shape: Lecture Response Discussion Method: Case methods Assignment: Product sketch with cognate semantics approach Estimated Time : 1x3x50 = 150 minutes	-	Material: Cognate semantic & product developments - morphology Book: Kurniawan, Arie. 2018. Peek & Seek: System Design. Surabaya : Despro ITS	5
11	Students are able to detect contextual semantics in products (C4, A2, P2)	Depth and sensitivity in product development with a contextual semantics approach	Criterion: Accuracy, mastery Shape: Non test Discussion	Shape: Lecture Response Discussion Method: Case methods Assignment: Product sketch with contextual semantics approach	-	Material: Contextual semantic & product developments Book: Kurniawan, Arie. 2018. Peek & Seek: System	5



				Estimated Time : 1x3x50 = 150 minutes		Design. Surabaya : Despro ITS	
12	Students are able to detect functional semantics in products (C4, A2, P2)	Depth and sensitivity in product development with functional semantics approach	Criterion: Accuracy, mastery Shape: Non test Discussion	Shape: Lecture Response Discussion Method: Case methods Assignment: Product sketch with functional semantics approach Estimated Time : 1x3x50 = 150 minutes	-	Material: Functional semantic & product developments Book: Kurniawan, Arie. 2018. Peek & Seek: System Design. Surabaya : Despro ITS	5
13	Students are able to detect evaluative semantics in products (C4, A2, P2)	Depth and sensitivity in product development with an evaluative semantics approach	Criterion: Accuracy, mastery Shape: Non test Discussion	Shape: Lecture Response Discussion Method: Case methods Assignment: Product sketch with evaluative semantics approach Estimated Time : 1x3x50 = 150 minutes	-	Material: Evaluative semantic & product developments Book: Kurniawan, Arie. 2018. Peek & Seek: System Design. Surabaya : Despro ITS	5



14	Students are able to detect cultural semantics in products (C4, A2, P2)	Depth and sensitivity in product development with cultural semantics approach	Criterion: Accuracy, mastery Shape: Non test Discussion	Shape: Lecture Response Discussion Method: Case methods Assignment: Product sketch with cultural semantics approach Estimated Time : 1x3x50 = 150 minutes	-	Material: Cultural s semantic &; product developments Book: Kurniawan, Arie. 2018. Peek &; Seek: System Design. Surabaya : Despro ITS	5
15	Students are able to compile differential semantics and make product development (C4, A4, P3)	Accuracy in understanding the product development process with differential semantic analysis	Criterion: Accuracy Mastery methodical Shape: Test case study	Shape: Lecture Response Discussion Workshop Method: Team based project Assignment: Differential semantics presentation and product development Estimated Time : 3x3x50 = 450 minutes	-	Material: Case study – semantics differential Book: Kurniawan, Arie. 2018. Peek &; Seek: System Design. Surabaya : Despro ITS	10
16	End of Semester Evaluation / Final Semester Exam: Document Archive of lecture results						15



DP234312 PROTOTYPES AND MODELS

INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM

Document Code

SEMESTER LEARNING PLAN

COURSE (MK)		CODE	MK CLUSTER	CREDIT (credit)		SEMESTER	Date of Compilation
PROTOTYPES AND MODELS		DP234312	PRODUCT DESIGN	T=1	P=2	6 (six)	November 10, 2022
AUTHORIZATION		RPS Developer		RMK Coordinator		Head of Study Program	
		Audit Yulardi, S.T, M.Ds		Ari Dwi Krisbianto, S.T., M.Ds.		Bambang Tristiyono, S.T., M.Si	
Learning Outcomes (CP)	CPL-PRODI charged to MK						
	CPL-4-	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, <u>environmental and socio-cultural factors</u> , market and business aspects.					
	CPL-8-	Able and skilled in using design process aids that include: manual or digital equipment according to technology and the times.					
	CPL-9	Able to present ideation design concepts through verbal communication, visual media, and prototypes (Models / mock-ups / prototypes) using various relevant technologies.					
	Course Learning Outcomes (CPMK)						
	CPMK-1-	Understand and understand the differences between models, mockups and prototypes and each function in the product design process					
	CPMK-2-	Able to use manual equipment to make models, mockups and prototypes by implementing K3 in the work environment.					
	CPMK-3	Mastering low fidelity model manufacturing techniques					



	CPMK-4	Mastering high fidelity model manufacturing techniques																										
	CPMK-5	Mastering prototype manufacturing techniques																										
		CPL matrix – CPMK <table><tr><td>CPMK</td><td>CPL-4</td><td>CPL-8</td><td>CPL-9</td></tr><tr><td>CPMK-1</td><td>V</td><td></td><td></td></tr><tr><td>CPMK-2</td><td></td><td>V</td><td></td></tr><tr><td>CPMK-3</td><td></td><td>V</td><td>V</td></tr><tr><td>CPMK-4</td><td></td><td>V</td><td>V</td></tr><tr><td>CPMK-5</td><td></td><td>V</td><td>V</td></tr></table>			CPMK	CPL-4	CPL-8	CPL-9	CPMK-1	V			CPMK-2		V		CPMK-3		V	V	CPMK-4		V	V	CPMK-5		V	V
CPMK	CPL-4	CPL-8	CPL-9																									
CPMK-1	V																											
CPMK-2		V																										
CPMK-3		V	V																									
CPMK-4		V	V																									
CPMK-5		V	V																									
Brief Description MK	This course provides knowledge to students regarding the understanding and function of making models, mockups and prototypes in the design process. As well as equipping skills to make models and prototypes of product objects both <i>low</i> fidelity and <i>high fidelity</i> according to case studies. After completing this course, students have the ability to make models and prototypes according to their needs in the product design process.																											
Study Material: Learning Material	Study Material : 1. Basic theory of model and prototype creation 2. Introduction to workshop work 3. Use of material processing tools and machinery 4. Low fidelity model creation 5. High fidelity model creation 6. Prototyping																											
Book	Main:																											
	1. Hallgrimsson, Bjarki. (2019). <i>Prototyping and Model Making for Product Design: Second Edition</i> . Paperback 2. TautonPress. (2014). <i>Woodworking: Wisdom & Know-How</i> . Paperback.																											
	Supporter:																											



	-						
Lecturer	Audit Yulardi, S.T., M.Ds.						
Subject requirements	-						
Mg To-	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assessment Weight (%)
		Indicators	Criteria & Forms	Offline)	Online)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Know the lesson plan of the lecture Recognize manual equipment Knowing the implementation of K3 in the work environment Understand the understanding and function of models, mockups and	Students remember lesson plans. Considering the types of manual types of equipment Considering the implementation of K3 in the work environment Students are able to explain correctly the understanding and function of models,	Proper explanation.	Lecture Discussion 150 minutes	-	Hallgrimsson, Bjarki, 2019. Prototyping and Model Making for Product Design: Second Edition. Paperback	



	prototypes in the product design process.	mockups and prototypes.					
2	Create a scalable low fidelity model	Students are able to plan the creation of low fidelity models to meet the needs of the testing function according to case studies.	Good planning and appropriate case studies.	Practice Discussion 150 minutes	-	Hallgrimsson, Bjarki, 2019. Prototyping and Model Making for Product Design: Second Edition. Paperback	4
3	Create a scalable low fidelity model	Create low fidelity models as per test needs.	The resulting low fidelity model works well for testing as per case studies.	Practice Discussion 150 minutes	-	Hallgrimsson, Bjarki, 2019. Prototyping and Model Making for Product Design: Second Edition. Paperback	4
4	Create a scalable low fidelity model	Create a report on the results of user testing using a low fidelity model	Present well the results of user testing using a low fidelity model.	Presentation Discussion 150 minutes	-	Hallgrimsson, Bjarki, 2019. Prototyping and Model Making for Product Design: Second Edition. Paperback	4



5	Create a scalable high fidelity model	Students are able to plan the creation of low fidelity models to meet the needs of the testing function according to case studies.	Planning: materials, scale, low fidelity model systems according to design testing needs.	Practice Discussion 150 minutes	-	Hallgrimsson, Bjarki, 2019. Prototyping and Model Making for Product Design: Second Edition. Paperback	4
6	Create a scalable high fidelity model	Create low fidelity models as per test needs.	Low fidelity models can be used according to design testing needs.	Practice Discussion 150 minutes	-	Hallgrimsson, Bjarki, 2019. Prototyping and Model Making for Product Design: Second Edition. Paperback	4
7	Create a scalable high fidelity model	Create low fidelity models as per test needs.	Low fidelity models can be used according to design testing needs.	Practice Discussion 150 minutes	-	Hallgrimsson, Bjarki, 2019. Prototyping and Model Making for Product Design: Second Edition. Paperback	4
8	Create a scalable high fidelity model	Create a report on the results of user testing using a low fidelity model	The presentation of test results with	Presentation Discussion 150 minutes	-	Hallgrimsson, Bjarki, 2019. Prototyping and Model Making for	6



			low fidelity models is good.			Product Design: Second Edition. Paperback	
9	Making prototypes by utilizing manual tools / tools	Able to plan prototyping with manual machines / tools	Tool planning, material preparation and measuring drawings are carried out according to case studies.	Practice, Discussion 150 minutes	-	Product Photography: Lighting, Composition, and Shooting Techniques.	8
10	Making prototypes by utilizing manual tools / tools	Able to use manual tools to make prototypes	The prototype results are neat, proportional according to the reference measuring image	Practice, Discussion 150 minutes	-	Photo Story handbook: A Guide to Creating Photo Stories	8
11	Making prototypes by utilizing manual tools / tools	Able to carry out the finishing process.	Neat prototype finishing results	Practice, Discussion 150 minutes	-	Product Photography: Lighting, Composition, and Shooting Techniques.	9
12	Create a prototype with a print process	Able to plan prototyping with the printing process	Planning of tools, materials, print masters,	Practice, Discussion 150 minutes	-	Product Photography: Lighting,	8



			and reference drawings is carried out according to case studies.			Composition, and Shooting Techniques.	
13	Create a prototype with a print process	Able to make molds from product objects according to case studies.	The resulting mold is neat and not easily damaged.	Practice, Discussion 150 minutes	-	Product Photography: Lighting, Composition, and Shooting Techniques.	9
14	Create a prototype with a print process	Able to multiply product objects with molds that have been made.	The prints are neat, not easily damaged, and in accordance with the provisions.	Practice, Discussion 150 minutes	-	Fiell, C., & Fiell, P. (2016). <i>The Story of Design: From the Paleolithic to the Present</i> . The Monacelli Press, LLC. Sparke, P. (2002). <i>A century of car design</i> . Mitchell Beazley.	9
15	Create a prototype with a print process	Able to multiply product objects with molds that have been made.	The prints are neat, not easily damaged, and in accordance with the provisions.	Practice, Discussion 150 minutes	-	Fiell, C., & Fiell, P. (2016). <i>The Story of Design: From the Paleolithic to the Present</i> . The	9



						Monacelli Press, LLC.	
						Sparke, P. (2002). <i>A century of car design</i> . Mitchell Beazley.	
16	Create a prototype with a print process	Able to carry out the finishing process of printed results	Neat finishing result.	Practice, Discussion 150 minutes	-	Fiell, C., & Fiell, P. (2016). <i>The Story of Design: From the Paleolithic to the Present</i> . The Monacelli Press, LLC.	10



DP234313 CAD

	INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code
SEMESTER LEARNING PLAN						
COURSE (MK)	CODE	MK CLUSTER	CREDIT (credit)		SEMESTER	Date of Compilation
CAD	DP234313	Product Design Technology	T=1	P=2	3	November 9, 2022
AUTHORIZATION	RPS Developer		RMK Coordinator		Head of Study Program	
	Alief Samboro, S.T, M.Ds		Djoko Kuswanto, ST., M.Biotech		Bambang Tristiyono, ST., M.Si	
Learning Outcomes (CP)	CPL-PRODI charged to MK					
	CPL-4	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.				
	CPL-8	Able and skilled in using design process aids that include: manual or digital equipment according to technology and the times.				
	CPL-9	Able to present ideation design concepts through verbal communication, visual media, and prototypes (Models / mock-ups / prototypes) using various relevant technologies.				
	Course Learning Outcomes (CPMK)					
	CPMK-1	Students are able to explain well the function of technical drawings in a design process				
	CPMK-2	Students are able to synchronize 2D and 3D workflows.				
	CPMK-3	Students are able to choose and determine the order of work in making 2D drawings (technical drawings) effectively.				



	CPMK-4	Students are able to draw 2D work digitally including: Looks, cutouts, and details, as well as being able to scale and print drawings.																										
	CPMK-5	Students understand the visualization of a product object in two and three dimensions																										
		CPL matrix – CPMK <table><tr><td>CPMK</td><td>CPL-4</td><td>CPL-8</td><td>CPL-9</td></tr><tr><td>CPMK-1</td><td>v</td><td></td><td></td></tr><tr><td>CPMK-2</td><td></td><td>v</td><td></td></tr><tr><td>CPMK-3</td><td></td><td>v</td><td></td></tr><tr><td>CPMK-4</td><td></td><td>v</td><td></td></tr><tr><td>CPMK-5</td><td></td><td></td><td>v</td></tr></table>			CPMK	CPL-4	CPL-8	CPL-9	CPMK-1	v			CPMK-2		v		CPMK-3		v		CPMK-4		v		CPMK-5			v
CPMK	CPL-4	CPL-8	CPL-9																									
CPMK-1	v																											
CPMK-2		v																										
CPMK-3		v																										
CPMK-4		v																										
CPMK-5			v																									
Brief Description MK	Core courses with a focus on teaching the rules and functions of technical drawing in a design process where students will be trained to synchronize work in 2D and 3D effectively with digital engineering training using computers.																											
Study Material: Learning Material	Organization of images with layer and color destination methods, as well as image attributes in detail and complete Coordinates and unit units as worksheet reference Draw simple objects Working drawings of furniture products Working picture of apparel products																											
Book	Main:																											
	Bi, Z., & Wang, X. (2020). Computer aided design and manufacturing. John Wiley & Sons. Leondes, C. T. (2000). Computer-Aided Design, Engineering, and Manufacturing: Systems Techniques and Applications, Volume III, Operational Methods in Computer-Aided Design. CRC Press.																											



	Kuang-Hua Chang (2015) Design Theory and Methods using CAD/CAE: The Computer Aided Engineering Design Series Dugan, Um (2016). Solid Modeling and Applications: Rapid Prototyping, CAD and CAE Theory						
	Supporter:						
Lecturer	Hertina Susandari, Gunanda Tiara, Irna Arlianti, Ahmad Rieskha Harseno, Audit Yulardi						
Subject requirements	-						
Mg To-	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assessment Weight (%)
		Indicators	Criteria & Forms	Offline)	Online)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Software introduction	Able to choose tools and steps according to digital imaging needs Learn the sequence of depictions	Criterion: Accuracy and mastery Technique : non test	Lectures, responses and discussions. 150 minutes	Lectures, responses and discussions. 150 minutes	Bi, Z., & Wang, X. (2020) Leondes, C. T. (2000) Kuang-Hua C (2015) Dugan, Um (2016)	5
2	Introduction to unit scale	Able to change the coordinates and scale of work units	Criterion: Accuracy and mastery Technique : non test	Lectures, responses and discussions. 150 minutes	Lectures, responses and discussions. 150 minutes	Bi, Z., & Wang, X. (2020) Leondes, C. T. (2000)	10



						Kuang-Hua C (2015) Dugan, Um (2016)	
3,4	Draw simple objects	Measurable projection of simple objects Able to draw objects effectively Able to create working drawings and print simple product working drawings Able to translate simple objects in 3D into 2D images and vice versa	Criterion: Accuracy, mastery, systematic Technique : non test	Lectures, responses, discussions. Practice making simple product working drawings 2x150 minutes	Lectures, responses, discussions. Practice making simple product working drawings 2x150 minutes	Bi, Z., & Wang, X. (2020) Leondes, C. T. (2000) Kuang-Hua C (2015) Dugan, Um (2016)	15
5,6,7	Draw simple products based on design choices Apparel - e.g.Bifold wallet Furniture - e.g stool Appliance - e.g Drinking bottle Transportation-	Measurable projection of simple product objects Able to draw simple objects effectively Able to create working drawings and print working drawings of simple products Able to translate simple products in 3D into 2D images and vice versa	Criterion: Accuracy, mastery, systematic Technique : non test	Lectures, responses, discussions. Practice making simple product working drawings 3x150 minutes	Lectures, responses, discussions. Practice making simple product working drawings 3x150 minutes	Bi, Z., & Wang, X. (2020) Leondes, C. T. (2000) Kuang-Hua C (2015) Dugan, Um (2016)	20



	e.g Motor mirrors						
8	Midterm Evaluation / Midterm Exam						
9,10,11	Draw mid-level products based on design choices Apparel - e.g. Women's bags Furniture - e.g. office chairs Appliance - e.g. Bluetooth speaker Transportation- e.g Motor headlamp	Measurable projection of mid-level products Able to draw mid-level products effectively Able to create working drawings and print working drawings of mid-level products Able to translate mid-level products in 3D into 2D images and vice versa	Criterion: Accuracy, mastery, systematic Technique : non test	Lectures, responses, discussions. Practice creating working drawings of mid-level products 3x150 minutes	Lectures, responses, discussions. Practice creating working drawings of mid-level products 3x150 minutes	Bi, Z., & Wang, X. (2020) Leondes, C. T. (2000) Kuang-Hua C (2015) Dugan, Um (2016)	20
12,13,14	Drawing complex products based on design choices Apparel - e.g. Sneakers and high heels	Measurable projection of complex l products Able to draw complex products effectively Able to create working drawings and print working drawings of complex products	Criterion: Accuracy, mastery, systematic Technique : non test	Lectures, responses, discussions. Practice making working drawings of complex products 3x150 minutes	Lectures, responses, discussions. Practice making working drawings of complex products 3x150 minutes	Bi, Z., & Wang, X. (2020) Leondes, C. T. (2000) Kuang-Hua C (2015) Dugan, Um (2016)	20



	Furniture - e.g. Sofa table set	Able to translate complex products in 3D into 2D images and vice versa							
	Appliance - e.g. Blender set								
	Transportation- e.g. Mountain bike								
16	End of Semester Evaluation / End of Semester Exam								

**DP234314 PRODUCT DESIGN STUDIO 1**

	INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code
SEMESTER LEARNING PLAN						
RACE (MK)	CODE	MK CLUSTER	CREDIT (sks)		SEMESTER	Date of Compilation
PRODUCT DESIGN STUDIO 1	P234314	Product Planning	T=1	P=4	3	30 December 2022
AUTHORIZATION	RPS Developer	Coordinator RMK	Head of Study Program			
	Irna Arlianti	Ari Dwi Krisbianto, S.T., M.Ds.	Bambang Tristiyono, S.T., M.Si			
Learning Outcomes (CP)	Study Program CPL charged to MK					
	CPL-1	Able to show attitudes and characters that reflect: piety to God Almighty, ethics and integrity, noble ethics, sensitivity and care for social and environmental problems, respect cultural differences and pluralism, uphold law enforcement prioritizing the interests of the nation and the wider community, through creativity and innovation, excellence, strong leadership, synergy, and other potentials possessed to achieve maximum results.				
	CPL-3	Able to manage self-learning, and develop themselves as lifelong learners to compete at national, and international levels, in order to make a real contribution to solving problems by implementing information and communication technology and paying attention to sustainability principles and understanding technology-based entrepreneurship.				
	CPL-4	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.				
	CPL-5	Able to understand and apply knowledge, insight and science related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural, economic and business, entrepreneurship, code of ethics and IPR.				



	CPL-6	Able to design products and systems with consideration of all aspects that influence them, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.							
	CPL-7	Able to research problems, formulate and publish design needs and solutions for the present or future using relevant design and research methodologies.							
	CPL-8	Able and skilled in using design process aids that include: manual or digital equipment according to technology and the times.							
	CPL-9	Able to present ideation design concepts through verbal communication, visual media, and prototypes (Models / mock-ups / prototypes) using various relevant technologies.							
	Course Learning Outcomes (CPMK)								
	CPMK-1	Students are able to identify product functions based on user image and emotions (C2, A2, P2)							
	CPMK-2	Students are able to develop aesthetics based on user profiling, recognize local potential and determine the right user (C2, A2, P2)							
	CPMK-3	Students are able to apply reverse engineering to existing products (C3, A3, P2)							
	CPMK-4	Students are able to process ideas in visual form and model studies based on the basic principles of product design (C4, A3, P3)							
	CPMK-5	Students are able to be sensitive to user behavior patterns and conduct design evaluations (C2, A2, P1)							
	CPMK-6	Students are able to present design concepts in standard design documents (C4, A4, P4)							
	Matrik CPL – CPMK								
	CPMK	CPL-1	CPL-3	CPL-4	CPL-5	CPL-6	CPL-7	CPL-8	CPL-9
	CPMK-1	V		V					
	CPMK-2	V	V		V		V		
	CPMK-3	V	V					V	
	CPMK-4	V	V			V			
	CPMK-5	V	V				V		
	CPMK-6	V	V			V			V



Brief Description MK	PRODUCT DESIGN STUDIO 1 is a core course that emphasizes knowledge, insight and expertise in product design and its systems by considering the complex aspects that accompany it, including: basic principles of design and aesthetics, utility and functional products oriented to user image. The required output targets are a description of the representative user character (persona), design <i>requirements & objectives</i> and / or material properties, <i>design development, concept making, final design 1 set / series</i> , produce design documents, models or prototypes 1: 1, presentation and exhibition of design project results. The areas of interest of Product Design Studio 1 include: Transportation Equipment, Workstations and Furniture, Apparel and Fashion, Appliances.		
Study Material: Learning Material	1. Introduction to product designing in the field of styling (aesthetics, image, user emotions)-1 (1-2) 2. Emphaty user (persona)-2 (3-6) 3. Research & sourching-2 (7-10) 4. Design development-2 (11-14) 5. Prototyping & design refinement-2 (15-18) 6. Iteration process-2 (19-22) 7. Design development-1 (23-24) 8. Prototyping & design refinement-2 (25-28) 9. Final collection & presentation attribute-2 (29-32)		
Pustaka	<table border="1"> <tr> <td>Main:</td><td></td></tr> </table> 1. Anitha, D. (2005). <i>Fashion and Apparel Designing: Fashion and Garment Making</i>. State Institute of Vocational Education, Directorate of Intermediate Education. Government of Andhra Pradesh Hyderabad. 2. Calderin, J. (2011). <i>Fashion design essentials: 100 principles of fashion design</i>. Rockport Publishers. 3. Cross, N. (2011). <i>Design thinking: Understanding how designers think and work</i>. Berg. 4. Meadows, J. (2017). <i>Vehicle Design: Aesthetic Principles in Transportation Design</i>. Routledge: New York. 5. Martin, Bella and Bruce Hanington. (2010). <i>Universal Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions</i>. Massachusetts: Rockport Publishers. 6. Dewey, Adrian (2017). <i>How to Illustrate and Design Concept Cars: New Edition</i>. Veloce Publishing: Dorchester UK. 7. Eissen, Koos & Roselien Steur.2014. <i>Sketching Product Design Presentation</i>. Amsterdam:BIS Publisher. 8. Postell, Jim. (2012). <i>Designing Furniture Second Edition</i>. Willey: Canada. 9. Lefteri, C. (2007). <i>Materials for Inspirational Design</i>. Rockport Publisher. 10. Norman, D. (2013). <i>The design of everyday things: Revised and expanded edition</i>. Basic books.	Main:	
Main:			



	Supporter: 1. Chow, S. (2019). <i>The Fashion Business Manual: An Illustrated Guide to Building a Fashion Brand</i>. Fashionary International Ltd. 2. Meadows, T. (2012). <i>Label Fashion</i>. Jakarta: PT. Gaya Favorit Press. 3. Tilley, A. R. (2001). <i>The measure of man and woman: human factors in design</i>. John Wiley & Sons. 4. Giesecke, F. E., Mitchell, A., Spencer, H. C., Hill, I., Dygdon, J., & Novak, J. (2016). <i>Technical drawing with engineering graphics</i> (Vol. 15). Prentice Hall. 5. Steur, R., & Eissen, K. (2007). <i>Sketching: Drawing techniques for product designers</i>. 6. Eissen, K., & Steur, R. (2011). <i>Sketching: the basics; the prequel to Sketching: drawing techniques for product designers</i>. BIS: Amsterdam. OCLC, 756275344. 7. Ashby, M.F., & Johnson, K. (2013). <i>Material and Design: The Art and Science of Material Selection in Product Design</i>. Elsevier.
Lecturer	
Subject requirements	-

Week of-	The final ability of each learning stage (Sub-CPMK)	Evaluation		Learning Methods, Teaching Method Student Assignments, [Time Estimate]		Learning Materials [References]	Assessm ent Weight (%)
		Indicator	Criteria & Forms	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1-2	Students are able to identify product functions based on user image and emotions (C2, A2, P2)	Accuracy of identifying product styling output, stages of product styling design,	Criterion: Accuracy and insight Shape: Non test	Shape: Lecture Discussion Method: Discussion		Introduction to Product Design in the Field of Styling - "Aesthetic, Image, and Emotional User" Pustaka :	2.5



		Sensitivity translates user imagery and emotions based on trends, habits, and needs		Estimated time : 2x2x50'		1. Anitha, D. (2005). <i>Fashion and Apparel Designing: Fashion and Garment Making</i>. State Institute of Vocational Education, Directorate of Intermediate Education. Government of Andhra Pradesh Hyderabad. 2. Calderin, J. (2011). <i>Fashion design essentials: 100 principles of fashion design</i>. Rockport Publishers. 3. Martin, Bella and Bruce Hanington. (2010). <i>Universal Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions</i>. Massachusetts: Rockport Publishers. 4. Norman, D. (2013). <i>The design of everyday things: Revised and expanded edition</i>. Basic books.	



3-6	Students are able to develop aesthetics based on user profiling, recognize local potential and determine the right user (C2, A2, P2)	Accuracy in identifying appropriate user characteristics based on personas and following entities (environment, local potential, lifestyle)	Criterion: Accuracy and insight Shape: Non test	Shape: Lecture Discussion Method: Case based learning Assignment: perform user profiling (create personas) as case studies (Task 1) Estimated time : 2x2x50'		Emphaty User (Persona) - Design brief design project : Determine the design theme based on persona (by Given) Book: 1. Cross, N. (2011). <i>Design thinking: Understanding how designers think and work</i> . Berg. 2. Martin, Bella and Bruce Hanington. 2010. <i>Universal Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions</i> . Massachusetts: Rockport Publishers. 3. Norman, D. (2013). <i>The design of everyday things: Revised and expanded edition</i> . Basic books.	2.5
7	Students are able to develop aesthetics based on user profiling, recognize local potential and	Sensitivity to identify problems, capture phenomena and <i>opportunities</i> in selected user profiles	Criterion: Sensitivity and mastery	Shape: Field practice Method:		Research & Sourching – Primary data retrieval from selected users and problem identification	5



	determine the right user (C2, A2, P2)		Shape: Non test	Discovery learning Assignment: create a customer journey map and moodboard (Task 2) Estimated time : 1x2x50'		Book: 1. Cross, N. (2011). <i>Design thinking: Understanding how designers think and work</i> . Berg. 2. Martin, Bella and Bruce Hanington. 2010. <i>Universal Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions</i> . Massachusetts: Rockport Publishers.	
8	Students are able to develop aesthetics based on user profiling, recognize local potential and determine the right user (C2, A2, P2)	Accuracy in mapping similar products based on material classification, shape, function and product / brand mapping to competitors	Criterion: Accuracy and sensitivity Shape: Non test	Shape: Responsi Workshop Method: Case based learning Assignment: Conduct similar product studies and map in competitor analysis (Task 3)		Research & Sourcing – Product benchmarking & competitor analysis Book: 1. Chow, S. (2019). <i>The Fashion Business Manual: An Illustrated Guide to Building a Fashion Brand</i> . Fashionary International Ltd. 2. Martin, Bella and Bruce Hanington. 2010. <i>Universal Methods of Design- 100</i>	5



				Estimated time : 1x2x50'		<i>Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions. Massachusetts: Rockport Publishers.</i>	
9-10	Students are able to apply reverse engineering to existing products (C3, A3, P2)	Accuracy in identifying <i>basic design</i> (product anatomy and assembly logic)	Criterion: Precision, mastery, form sensitivity and aesthetics Shape: Non test	Shape: Praktik studio Method: Case based learning Assignment: Reverse engineering selected existing products (Task 4) Estimated time : 2x2x50'		Research & Sourcing – Reverse engineering pada produk eksisting Pustaka : 1. Anitha, D. (2005). <i>Fashion and Apparel Designing: Fashion and Garment Making</i> . State Institute of Vocational Education, Directorate of Intermediate Education. Government of Andhra Pradesh Hyderabad. 2. Calderin, J. (2011). <i>Fashion design essentials: 100 principles of fashion design</i> . Rockport Publishers. 3. Meadows, J. (2017). <i>Vehicle Design: Aesthetic Principles in Transportation Design</i> . Routledge: New York.	10



						4. Postell, Jim. (2012). <i>Designing Furniture Second Edition</i>. Willey: Canada. 5. Tilley, A. R. (2001). <i>The measure of man and woman: human factors in design</i>. John Wiley & Sons.	
10-11	Students are able to process ideas in visual form and model studies based on the basic principles of product design (C4, A3, P3)	Sensitivity of form, aesthetics, taste, image that represents the target user	Criterion: Precision, mastery, form sensitivity and aesthetics Shape: Not your	Shape: Praktik studio Method: Case based learning Assignment: Create 100 sketch ideas based on <i>moodboard & key sketch</i> (Task 4) Estimated time : 2x2x50'		Design Development – Sketsa ideasi Pustaka : 1. Anitha, D. (2005). <i>Fashion and Apparel Designing: Fashion and Garment Making</i>. State Institute of Vocational Education, Directorate of Intermediate Education, Government of Andhra Pradesh Hyderabad. 2. Chow, S. (2019). <i>The Fashion Business Manual: An Illustrated Guide to Building a Fashion Brand</i>. Fashionary International Ltd. 3. Eissen, Koos & Roselien Steur. (2014). <i>Sketching</i>	10



						<i>Product Design Presentation.</i> Amsterdam: BIS Publisher 4. Postell, Jim. (2012). <i>Designing Furniture Second Edition.</i> Willey: Canada. 5. Steur, R., & Eissen, K. (2007). <i>Sketching: Drawing techniques for product designers.</i> 6. Eissen, K., & Steur, R. (2011). <i>Sketching: the basics; the prequel to Sketching: drawing techniques for product designers.</i> BIS: Amsterdam. OCLC, 756275344.	
Midterm Evaluation							
13-14	Students are able to process ideas in visual form and model studies based on the basic principles of product design (C4, A3, P3)	Sensitivity of form, aesthetics, taste, image that represents the target user	Criterion: Precision, mastery, form sensitivity and aesthetics Shape: Not your	Shape: Praktik studio Method: Case based learning Assignment : Create affinity diagram as		Design Development – Alternative desain Pustaka : 1. Calderin, J. (2011). <i>Fashion design essentials: 100 principles of fashion design.</i> Rockport Publishers. 2. Chow, S. (2019). <i>The Fashion Business Manual:</i>	5



				selection criteria for design alternatives & choose 3 design alternatives (presented in refine sketch) – (Task 5) Estimated time : 2x2x50'		<i>An Illustrated Guide to Building a Fashion Brand.</i> Fashionary International Ltd. 3. Martin, Bella and Bruce Hanington. (2010). <i>Universal Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions.</i> Massachusetts: Rockport Publishers. 4. Dewey, Adrian. (2017). <i>How to Illustrate and Design Concept Cars: New Edition.</i> Veloce Publishing: Dorchester UK. 5. Eissen, Koos & Roselien Steur. (2014). <i>Sketching Product Design Presentation.</i> Amsterdam: BIS Publisher 6. Postell, Jim. (2012). <i>Designing Furniture Second Edition.</i> Willey: Canada.	



						7. Steur, R., & Eissen, K. (2007). <i>Sketching: Drawing techniques for product designers</i>. 8. Eissen, K., & Steur, R. (2011). <i>Sketching: the basics; the prequel to Sketching: drawing techniques for product designers</i>. BIS: Amsterdam. OCLC, 756275344. 9. Norman, D. (2013). <i>The design of everyday things: Revised and expanded edition</i>. Basic books.	
15-18	Students are able to process ideas in visual form and model studies based on the basic principles of product design (C4, A3, P3)	Accuracy of product shape, volume, parts according to design impressions	Criterion: The regularity, sensitivity of the form and aesthetics Shape: Non test	Shape: Praktik studio Method: Case based learning Assignment: Make 3 sets of model studies from alternative designs using 1:1		Prototyping & Design Refinement – Studi model dari alternative desain Pustaka : 1. Anitha, D. (2005). <i>Fashion and Apparel Designing: Fashion and Garment Making</i>. State Institute of Vocational Education, Directorate of Intermediate Education.	10



				scale substitution materials (Task 6) Estimated time : 4x2x50'		Government of Andhra Pradesh Hyderabad. 2. Calderin, J. (2011). <i>Fashion design essentials: 100 principles of fashion design</i> . Rockport Publishers. 3. Tilley, A. R. (2001). <i>The measure of man and woman: human factors in design</i> . John Wiley & Sons. 4. Lefteri, C. (2007). <i>Materials for Inspirational Design</i> . Rockport Publisher. 5. Ashby, M.F., & Johnson, K. (2013). <i>Material and Design: The Art and Science of Material Selection in Product Design</i> . Elsevier.	
19-20	Students are able to be sensitive to user behavior patterns and conduct design evaluations (C2, A2, P1)	Sensitivity captures micro gestures & user expressions	Criterion: Accuracy, mastery, and sensitivity Shape: Non test	Shape: Field practice Method: Case based learning Assignment: Compile user testing		Iteration Process – User testing Pustaka : 1. Cross, N. (2011). <i>Design thinking: Understanding how designers think and work</i> . Berg. 2. Martin, Bella and Bruce Hanington. (2010).	5



				instruments; Conduct user testing model studies on prospective users (Task 7) Estimated time : 2x2x50'		<i>Universal Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions.</i> Massachusetts: Rockport Publishers. 3. Norman, D. (2013). <i>The design of everyday things: Revised and expanded edition.</i> Basic books.	
21-22	Students are able to be sensitive to user behavior patterns and conduct design evaluations (C2, A2, P1)	Accuracy in identifying user evaluations	Criterion: Accuracy, mastery, and sensitivity Shape: Non test	Shape: Studio practice Method: Case based learning Assignment: Compile design evaluation results and make <i>Design Requirements & Objectives / Material Properties</i> (Task 8)		Iteration Process – Evaluasi studi model dan Penyusunan <i>DRnO / Material Properties</i> Pustaka : 1. Cross, N. (2011). <i>Design thinking: Understanding how designers think and work.</i> Berg. 2. Calderin, J. (2011). <i>Fashion design essentials: 100 principles of fashion design.</i> Rockport Publishers. 3. Meadows, J. (2017). <i>Vehicle Design: Aesthetic Principles</i>	5



						<i>in Transportation Design.</i> Routledge: New York. 4. Postell, Jim. (2012). <i>Designing Furniture Second Edition.</i> Willey: Canada. 5. Lefteri, C. (2007). <i>Materials for Inspirational Design.</i> Rockport Publisher. 6. Ashby, M.F., & Johnson, K. (2013). <i>Material and Design: The Art and Science of Material Selection in Product Design.</i> Elsevier.	
23-24	Students are able to process ideas in visual form and model studies based on the basic principles of product design (C4, A3, P3)	Sensitivity of form, aesthetics, taste, image that represents the target user	Criterion: Precision, mastery, form sensitivity and aesthetics Shape: Not your	Shape: studio practice Method: Case based learning Assignment : Refining sketches on alternative designs based on DRnO / Material Properties – (Task 9)		Design Development – Evaluation of design alternatives Pustaka : 1. Calderin, J. (2011). <i>Fashion design essentials: 100 principles of fashion design.</i> Rockport Publishers. 2. Chow, S. (2019). <i>The Fashion Business Manual: An Illustrated Guide to Building a Fashion Brand.</i> Fashionary International Ltd.	5



				Estimated time : 2x2x50'		3. Martin, Bella and Bruce Hanington. (2010). <i>Universal Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions</i>. Massachusetts: Rockport Publishers. 4. Dewey, Adrian. (2017). <i>How to Illustrate and Design Concept Cars: New Edition</i>. Veloce Publishing: Dorchester UK. 5. Eissen, Koos & Roselien Steur. (2014). <i>Sketching Product Design Presentation</i>. Amsterdam: BIS Publisher 6. Postell, Jim. (2012). <i>Designing Furniture Second Edition</i>. Willey: Canada. 7. Steur, R., & Eissen, K. (2007). <i>Sketching: Drawing techniques for product designers</i>.	



						8. Eissen, K., & Steur, R. (2011). <i>Sketching: the basics; the prequel to Sketching: drawing techniques for product designers</i>. BIS: Amsterdam. OCLC, 756275344. 9. Norman, D. (2013). <i>The design of everyday things: Revised and expanded edition</i>. Basic books.	
25	Students are able to present design concepts in standard design documents (C4, A4, P4)	The accuracy of visualizing the selected design in the form of presentation images in terms of silhouettes of shapes, materials, color composition	Criterion: Precision, mastery, form sensitivity and aesthetics Shape: Not your	Shape: studio practice Method: Case based learning Estimated time : 1x2x50'		Prototyping & Design Refinement – Selected design presentation images Pustaka : 1. Anitha, D. (2005). <i>Fashion and Apparel Designing: Fashion and Garment Making</i>. State Institute of Vocational Education, Directorate of Intermediate Education. Government of Andhra Pradesh Hyderabad. 2. Calderin, J. (2011). <i>Fashion design essentials: 100</i>	5



						<i>principles of fashion design.</i> Rockport Publishers. 3. Eissen, Koos & Roselien Steur. (2014). <i>Sketching Product Design Presentation.</i> Amsterdam: BIS Publisher. 4. Dewey, Adrian. (2017). <i>How to Illustrate and Design Concept Cars: New Edition.</i> Veloce Publishing: Dorchester UK. 5. Postell, Jim. (2012). <i>Designing Furniture Second Edition.</i> Willey: Canada. 6. Steur, R., & Eissen, K. (2007). <i>Sketching: Drawing techniques for product designers.</i> 7. Eissen, K., & Steur, R. (2011). <i>Sketching: the basics; the prequel to Sketching: drawing techniques for product designers.</i> BIS: Amsterdam. OCLC, 756275344. 8. Norman, D. (2013). <i>The design of everyday things:</i>	



						<i>Revised and expanded edition. Basic books.</i>	
26	Students are able to present design concepts in standard design documents (C4, A4, P4)	Precision visualizing the final design in standard technical drawings	Criterion: Precision, neatness, mastery Shape: Non test	Shape: studio practice Method: Case based learning Assignment: create engineering drawings (looks, cuts, details, patterns, breakdowns, components) of the final design (Task 9) Estimated time : 1x2x50'		Prototyping & Design Refinement – Gambar teknik Pustaka : 1. Giesecke, F. E., Mitchell, A., Spencer, H. C., Hill, I., Dygdon, J., & Novak, J. (2016). <i>Technical drawing with engineering graphics</i> (Vol. 15). Prentice Hall. 2. Postell, Jim. (2012). <i>Designing Furniture Second Edition</i> . Wiley: Canada. 3. Tilley, A. R. (2001). <i>The measure of man and woman: human factors in design</i> . John Wiley & Sons.	5
27-28	Students are able to present design concepts in standard design documents (C4, A4, P4)	Accuracy of product shape, volume, parts according to design impressions	Criterion: Precision, mastery, form sensitivity	Shape: Praktik studio Method:		Prototyping & Design Refinement – Prototyping 1:1 Pustaka :	15



			and aesthetics Shape: Non test	Case based learning Assignment: create a prototype of the final design of 1 set / 1 series with a scale of 1:1 (Task 10) Estimated time : 1x2x50'		1. Anitha, D. (2005). <i>Fashion and Apparel Designing: Fashion and Garment Making</i>. State Institute of Vocational Education, Directorate of Intermediate Education. Government of Andhra Pradesh Hyderabad. 2. Calderin, J. (2011). <i>Fashion design essentials: 100 principles of fashion design</i>. Rockport Publishers. 3. Tilley, A. R. (2001). <i>The measure of man and woman: human factors in design</i>. John Wiley & Sons. 4. Postell, Jim. (2012). <i>Designing Furniture Second Edition</i>. Willey: Canada. 5. Meadows, J. (2017). <i>Vehicle Design: Aesthetic Principles in Transportation Design</i>. Routledge: New York. 6. Norman, D. (2013). <i>The design of everyday things: Revised and expanded edition</i>. Basic books.	



29-32	Students are able to present design concepts in standard design documents (C4, A4, P4)	Accuracy of presentation of works based on design concepts and user image	Criterion: Precision, mastery, form sensitivity and aesthetics Shape: Not your	Shape: studio practice Method: Case based learning Assignment: Document prototypes, create work portfolios and product etiquette (Task 11) Estimated time : 1x2x50'		Final Collection & Presentation Attribute – Prototype, portofolio, dan etiket produk Pustaka : 1. Anitha, D. (2005). <i>Fashion and Apparel Designing: Fashion and Garment Making</i> . State Institute of Vocational Education, Directorate of Intermediate Education. Government of Andhra Pradesh Hyderabad. 2. Calderin, J. (2011). <i>Fashion design essentials: 100 principles of fashion design</i> . Rockport Publishers. 3. Chow, S. (2019). <i>The Fashion Business Manual: An Illustrated Guide to Building a Fashion Brand</i> . Fashionary International Ltd. 4. Meadows, T. (2012). <i>Label Fashion</i> . Jakarta: PT. Gaya Favorit Press.	10



						5. Dewey, Adrian (2017). <i>How to Illustrate and Design Concept Cars: New Edition</i>. Veloce Publishing: Dorchester UK. 6. Postell, Jim. (2012). <i>Designing Furniture Second Edition</i>. Willey: Canada. 7. Lefteri, C. (2007). <i>Materials for Inspirational Design</i>. Rockport Publisher. 8. Norman, D. (2013). <i>The design of everyday things: Revised and expanded edition</i>. Basic books.	
16	End of Semester Evaluation / End of Semester Exam						100



DP234415 INTERACTION DESIGN

	INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code	
SEMESTER LEARNING PLAN							
RACE (MK)	CODE	MK CLUSTER		CREDIT (sks)		SEMESTER	Date of Compilation
INTERACTION DESIGN	DP234415	Design and Human Factors Study		T=3	P=4	4	10 November 2022
AUTHORIZATION 	RPS Developer		Coordinator RMK			Head of Study Program	
	Gunanda Tiara Maharany, S.Ds., M.Ds.		Hertina Susandari, S.T., M.T.			Bambang Tristiyono, ST., M.Si.	
Learning Outcomes (CP)	Study Program CPL charged to MK						
	CPL-3	Able to manage self-learning, and develop themselves as lifelong learners to compete at national, and international levels, in order to make a real contribution to solving problems by implementing information and communication technology and paying attention to sustainability principles and understanding technology-based entrepreneurship.					
	CPL-5	Able to understand and apply knowledge, insight and science related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural, economic and business, entrepreneurship, code of ethics and IPR.					
	CPL-7	Able to research problems, formulate and publish design needs and solutions for the present or future using relevant design and research methodologies.					
	Course Learning Outcomes (CPMK)						
	CPMK-1	Students are able to define and explain the basic concepts of user interaction design, process stages and techniques in user interaction design; in class discussions and through practice exams					



	CPMK-2	Students are able to define and explain the application of user interaction design; through tasks in groups or individually.			
	CPMK-3	Students are able to demonstrate proficiency in using user interaction design tools and methods and show how to choose the most appropriate method or approach for a particular project; by completing projects and presenting their work processes.			
	CPMK-4	Students are able to define and compile activity plans for testing user interaction design.			
	CPMK-5	Students are able to carry out user interaction design testing and write a portfolio of test results.			
		Matrik CPL – CPMK			
		CPMK	CPL-3	CPL-5	CPL-7
		CPMK-1	V	V	
		CPMK-2	V	V	V
		CPMK-3	V	V	V
		CPMK-4	V	V	
		CPMK-5	V	V	
Brief Description MK	Introductory lectures on interactive product design with emphasis on aspects of product reusability, human-product interaction, and user experience.				
Study Material: Learning Material	• Basic introduction to user interaction design • User interaction design development process • User interaction design prototyping				
Pustaka	Main:				
	• Saffer, Dan. 2007. Designing for Interaction: Creating Smart Application and Clever Devices. AIGA: New Riders • Rogers, Preece, and Sharp. 2002. Interaction Design. New York: Prentice Hall				
	Supporter:				
	Brown, Tim. 2010. Change by Design. USA: Harper Business				
Lecturer	Gunanda Tiara Maharany, S.Ds., M.Ds.				



Subject requirements		None					
Week of-	The final ability of each learning stage (Sub-CPMK)	Evaluation		Learning Methods, Teaching Methods Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assessment Weight (%)
		Indicator	Criteria & Forms	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	<i>Course Introduction</i>	Students know and understand the content and rules of the lecture that will be followed	Criterion: Accuracy and insight Shape: Not your	Shape: Lecture Discussion Method: Response Assignment: - Estimated time : 1x3x50'		Introduction to lectures (Course description, lecture rules)	
2	<i>Interaction Design: An Introduction</i>	Students know and understand the definition of <i>Interaction Design</i> and the theoretical knowledge base related to interactive products	Criterion: Accuracy and insight Shape: Not your	Shape: Lecture Discussion Method: Response Assignment:		• <i>Definition of Interaction Design</i> • <i>Historical Development of Interaction Design</i> • <i>Context of Interactive Product: Meaning and Presence</i>	



				- Estimated time : 1x3x50'		Pustaka: Preece, Sharp, & Rogers (2002): Ch 1 Saffer (2007): Ch I	
3	<i>Starting Points: Interaction Design Basics</i>	Students know and understand various design approaches and processes of human cognition as users in relation to the interactivity dimension of the product.	Criterion: Accuracy and insight Shape: Not your	Shape: Lecture Discussion Method: Response Assignment: - Estimated time : 1x3x50'		• <i>Approaches Interaction Design Problem</i> • <i>Elements of Interaction Design</i> • <i>Cognitive Framework: metaphors, postures</i> Pustaka: Saffer (2007): Ch II Preece, Sharp, & Rogers (2002): Ch II& III	
4	<i>Interaction Design Framework</i>	Students know and understand various aspects of social and emotional interactions that influence the characterization of interactive products.	Criterion: Accuracy and insight Shape: Not your	Shape: Lecture Discussion Method: Response Assignment: - Estimated time : 1x3x50'		• <i>Characters of Good Interaction Design Products</i> • <i>Interaction Framework: Social and Emotional</i> Pustaka: Saffer (2007): Ch II Preece, Sharp, & Rogers (2002): Ch IV&V	



5	<i>The Craft of Interaction Design Research I</i>	Students know and understand various methods of user analysis, testing implementation, and identification of interface elements needed in the interactive product design process	Criterion: Accuracy and insight Shape: Not your	Shape: Lecture Discussion Method: Response Assignment: Students conduct user identification and evaluation exercises by applying knowledge of user analysis methods that have been learned Estimated time : 1x3x50'		• <i>Method of User Analysis</i> • <i>Prototypes and Testing</i> • <i>Interface Elements</i> Pustaka: Saffer (2007): Ch IV Preece, Sharp, & Rogers (2002): Ch VI & VII	
6	<i>The Craft of Interaction Design Research II</i>	Students can apply analytical methodical knowledge to identify and define interactive product user characters	Criterion: Accuracy and insight Shape: Not your	Shape: Lecture Discussion Method: Response Assignment: -		• Users' data review • Defining characters of interactive product users Pustaka: Preece, Sharp, & Rogers (2002): Ch VIII	



				Estimated time : 1x3x50'			
7	<i>Interaction Design Process I</i>	Students know and understand idea-generation and interaction principles in the interactive product design process	Criterion: Accuracy and insight Shape: Not your	Shape: Lecture Discussion Method: Response Assignment: Estimated time : 1x3x50'		Ideation & applying Interaction Design principles Book: Saffer (2007): VI Preece, Sharp, & Rogers (2002): Ch IX	
8	Midterm Evaluation / Midterm Exam						
9	<i>Interaction Design Process II</i>	Students know and understand the procedure for setting product requirements in the interactive product design process	Criterion: Accuracy and insight Shape: Not your	Shape: Lecture Discussion Method: Response Assignment: Students conduct exercises to identify the operational functions of an interactive product		Establishing product requirement Book: Saffer (2007): VI Preece, Sharp, & Rogers (2002): Ch IX	



				based on the principles and requirements of interactivity. Estimated time : 1x3x50'			
10	<i>Interaction Design Process III</i>	Students know and understand planning and design procedures, interactive products (including the principles of science laws related to interaction processes)	Criterion: Accuracy and insight Shape: Not your	Shape: Lecture Discussion Method: Response Assignment: - Estimated time : 1x3x50'		Planning and designing • Laws of Interaction Design Book: Preece, Sharp, & Rogers (2002): Ch X	
11	<i>Interaction Design Process IV</i>	Students know and understand the various functions of interactive product modeling and construction	Criterion: Accuracy and insight Shape: Not your	Shape: Lecture Discussion Method: Response Assignment: - Estimated time :		<i>Prototyping, and Construction</i> Book: Saffer (2007): Ch VII Preece, Sharp, & Rogers (2002): Ch XI	



				1x3x50'			
12	<i>Interaction Design Process V</i>	Students know and understand various frameworks and procedures for evaluating the usability and utility of interactive products	Criterion: Accuracy and insight Shape: Not your	Shape: Lecture Discussion Method: Response Assignment: Students conduct interactive product proposal making exercises based on aspects of the <i>Interaction Design process</i> that have been learned Estimated time : 1x3x50'		<i>Framework for evaluation</i> Book: Preece, Sharp, & Rogers (2002): Ch XI	
13	<i>Interaction Design on Business</i>	Students recognize, know, and understand the relationship between the context of consumer experiences and lifestyles with commercial value in	Criterion: Accuracy and insight Shape: Not your	Shape: Lecture Discussion Method: Response Assignment: -		<i>Resufracing experiences and consumer lifestyles: Success stories on interaction design</i> Book: Preece, Sharp, & Rogers (2002): Chapter XII	



		contemporary interactive products.		Estimated time : 1x3x50'			
14	<i>The Future of Interaction Design</i>	Students know, know, and understand the relationship of technological developments to the existence of interactive products now and in the future.	Criterion: Accuracy and insight Shape: Not your	Shape: Lecture Discussion Method: Response Assignment: - Estimated time : 1x3x50'		The influence of advancement of technology on interactive products. Pustaka: Saffer (2007): Epilogue Brown, T (2010): Ch V	
15	<i>Course content review</i>		Criterion: Accuracy and insight Shape: Not your	Shape: Lecture Discussion Method: Presentation Assignment: - Estimated time : 1x3x50'		• Review of the content and technical implementation of lectures Pustaka: Saffer (2007): Ch IX	
16	End of Semester Evaluation / End of Semester Exam						

**DP234416 MATERIALS & PROCESSES**

	INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code
SEMESTER LEARNING PLAN						
RACE (MK)	CODE	MK CLUSTER	CREDIT (sks)		SEMESTER	Date of Compilation
MATERIALS & PROCESSES	DP234416	Product Design Technology	T3	P3	4	29 December 2022
AUTHORIZATION 	RPS Developer		Coordinator RMK		Head of Study Program	
	Dr., Ir. Bambang Iskandriawan, M.Eng.		Djoko Kuswanto, ST., M.Biotech		Bambang Tristiyono, ST., M.Si	
Learning Outcomes (CP)	CPL-PRODI charged to MK					
	CPL-4	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.				
	CPL-6	Able to design products and systems with consideration of all aspects that influence them, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.				
	CPL-9	Able to present ideation design concepts through verbal communication, visual media, and prototypes (Models / mock-ups / prototypes) using various relevant technologies.				
	Course Learning Outcomes (CPMK)					
	CPMK-1	Students are able to explain comprehensively the technical specifications of the product and the function of each product component. <i>Students are able to cpmphensively explain the product technical specifications and functions of each product component.</i>				



	CPMK-2	Students are able to explain comprehensively the ingredients and characteristics of the ingredients of a particular product. <i>Students are able to comprehensively explain the materials and material properties of a particular product.</i>																						
	CPMK-3	Students are able to explain comprehensively the process of making products industrially. Able to choose and implement the most suitable manufacturing process. <i>Students are able to explain comprehensively the proses of making industrial products. Capable to select and justify the most suitable manufacturing process.</i>																						
	CPMK-4	Students are able to explain the important parts of a product: casing/wrapping; connections/connectors; spring; shaft; pegs and bearings; player thread; mechanical transmission; and product structure & construction. <i>Students are able to explain the important parts of a product: enclosure/casing; joint/connection; springs; shafts; pins and bearings; turning thread (power screw); mechanical transmission; and product structure & construction.</i>																						
		Matrik CPL – CPMK <table><tr><td></td><td>CPL-4</td><td>CPL-6</td><td>CPL-9</td></tr><tr><td>CPMK-1</td><td>V</td><td>V</td><td>V</td></tr><tr><td>CPMK-2</td><td></td><td>V</td><td>V</td></tr><tr><td>CPMK-3</td><td></td><td>V</td><td>V</td></tr><tr><td>CPMK-4</td><td>V</td><td>V</td><td>V</td></tr></table>				CPL-4	CPL-6	CPL-9	CPMK-1	V	V	V	CPMK-2		V	V	CPMK-3		V	V	CPMK-4	V	V	V
	CPL-4	CPL-6	CPL-9																					
CPMK-1	V	V	V																					
CPMK-2		V	V																					
CPMK-3		V	V																					
CPMK-4	V	V	V																					
Brief Description MK	Write down the relevance & scope of the material/study material in accordance with this course and in accordance with the Sub-CPMK																							
Study Material: Learning Material	1) Material properties: <i>density, young’s modulus, strength</i> dan <i>cost</i> 2) Material properties: <i>elongation, thoughness, resistivity, energy content, maximum service temperature</i> dan <i>recycle</i> 3) Material selection for product design 4) Molding process in the manufacture of product components 5) Casting process in the manufacture of product components 6) Bulk <i>forming process</i> in the manufacture of product components 7) Sheet <i>forming process</i> in the manufacture of product components 8) Rapid <i>prototyping process, lay-up method</i> and <i>powder methods</i> in manufacturing product components 9) Use and selection of joints in product design																							



	10) Use and selection of springs in product design 11) Use and selection of shafts, pegs and bearings in product design 12) Use and selection of <i>power screw</i> in design
Pustaka	Main: 1. Asbhy, Mike and Kara Johnson. 2010. <i>Materials and Design-The Art and Science of Material Selection in Product Design</i> . Burlington: Butterworth-Heinemann 2. Cross, Nigel.2000. <i>Engineering Design Methods: Strategies for Product Design</i> , 3rd edition, New York: John Wiley & Sons. Ltd 3. Mott, R.L., 2009, " <i>Machine Elements in the Design of Integrated Machine Elements</i> ", Andi Publishers, Books 1 and 2 4. Karl T. Ulrich and Steven D. Eppinger, 2015, <i>Product Design And Development</i> (6th Edition) 5. Daniel F. Cuffaro, 2014, <i>The Industrial Design Reference + Specification Book</i>
	Supporter: 1. Jurnal Applied Mechanics and Materials, Volume 607, ISSN 1660-9336, 2014, halaman 920-925 dengan judul: <i>The Development of Bicycle into Trandem: The Bike Can be used as Tandem or Single Depend of The Necessity</i> . 2. MATEC Web of Conferences, 2017, 101, 03017, DOI: 10.1051/matecconf/201710103017 dengan judul: <i>Tandem Bike Design for Apartment Residents as an Initiative to Reduce Pollution</i> . 3. Journal of Engineering and Applied Sciences (JEAS) 13 (7), halaman 1872-1876, ISSN; 1816-959X ©Medwell Journals, 2018: <i>Main Frame Exploration of Sliding Tandem Bike as The Effort to Enhance Product Feature</i> . 4. AIP Conference Proceodings 2187, 030001 (2019), https://doi.org/10.1063/1.5138305 : <i>Numerical Structure Analysis of Air Purifier Bike with Frame Designs and Materials Variation</i> . 5. IOP Conf. Series: Materials Science and Engineering 673 (2019) 012108 doi:10.1088/1757-899X/673/1/012108, Broad Exposure to Science and Technology 2019 (BEST2019): <i>Air Purifier Bike Design and Prototype as A Short Distance Transportation plus an Effort to Downgrade the Level of Air Pollution Concentration in Towns</i> . 6. Journal of Engineering Science and Technology Vo. 15, No. 6 (2020) 2935-3954, © School of Engineering, Taylor's University, <i>Air Velocity and Pressure Drop Exploration inside Pipe Frame of Air Purifier Bicycle using Numerical Analysis</i> . 7. AIP Conference Proceedings 2384, 070001 (2021), https://doi.org/10.1063/5.0071618 , Published Online: 30 December 2021, <i>Structure and Material Analysis in the Insulated Stretcher Chamber to Prevent Transmission of Covid-19 with Numerical Simulation Method</i> .



Lecturer	Bambang Iskandriawan						
Subject requirements	None.						
Week of-	The final ability of each learning stage (Sub-CPMK)	Evaluation		Learning Methods, Teaching Methods, Student Assignments, [Time Estimate]		Learning Materials (References)	Assessment Weight (%)
		Indicator	Criteria & Forms	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	CPMK -1 CPMK -2			Offline		Material properties: density, young's modulus, strength dan cost.	
2	CPMK -1 CPMK -2			Offline		Material properties: elongation, toughness, resistivity, energy content, maximum service temperature dan recycle. Seleksi material untuk desain produk.	



3	CPMK -2			Offline		Types of artificial and natural materials.	
4	CPMK -3				Online	Proses pembuatan komponen-komponen produk: molding, casting, bulk forming, sheet forming, rapid prototyping, lay-up method dan powder methods.	
5	CPMK -2 CPMK -3			Offline		Class (group) presentations for styling, craft, and apparel products. Technical specifications, functions of each component / parts, materials and material properties, the process of making product components and assemblies.	



6	CPMK -1 CPMK -2 CPMK -3 CPMK -4			Offline		Class (group) presentations for styling, craft, and apparel products. Technical specifications, functions of each component / parts, materials and material properties, the process of making product components and assemblies.	
7	CPMK -4				Online	The use is also the selection of connection systems and springs on the product.	
8	Midterm Evaluation / Midterm Exam						
9	CPMK -1 CPMK -2 CPMK -3 CPMK -4			Offline		Class (group) presentations for furniture products and public facilities. Technical specifications,	



						functions of each component / parts, materials and material properties, the process of making product components and assemblies.	
10	CPMK -4			Offline		The use is also the selection of shafts, pegs, and bearings systems on the product.	
11	CPMK -1 CPMK -2 CPMK -3 CPMK -4			Offline		Class (group) presentations for transport products and equipment. Technical specifications, functions of each component / parts, materials and material properties, the process of making product	



						components and assemblies.	
12	CPMK -1 CPMK -2 CPMK -3 CPMK -4			Offline		Class (group) presentations for transport products and equipment. Technical specifications, functions of each component / parts, materials and material properties, the process of making product components and assemblies.	
13	CPMK -1 CPMK -4				Online	The use is also the selection of mechanical transmission systems, power screws, and structures & constructions on products.	



14	CPMK -1 CPMK -4			Offline		Implementation of motion mechanics and automata.	
15	CPMK -1 CPMK -4			Offline		Class (group) presentation of motion mechanics and automata systems.	
16	End of Semester Evaluation / End of Semester Exam						

**DP234417 DESIGN APPRECIATION**

		INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code	
SEMESTER LEARNING PLAN								
COURSE (MK)		CODE	MK CLUSTER		CREDIT (sks)		SEMESTER	Date of Compilation
DESIGN APPRECIATION		DP234417	Design Studies and Human Factors		T=2	P=1	4 (empat)	17 Nopember 2022
AUTHORIZATION 		RPS Developer		RMK Coordinator		Head of Study Program		
		Arie Kurniawan, S.T, M.Ds		Hertina Susandari, S.T., M.T.		Bambang Tristiyono, S.T., M.Si		
Learning Ourcomes (CP)	Study Program CPL charged to MK							
	CPL-1	Able to demonstrate attitudes and characters that reflect: devotion to God Almighty, ethics and integrity, noble character, sensitive and concerned about social and environmental issues, respect for cultural differences and pluralism, uphold law enforcement prioritizing the interests of the nation and the wider community, through creativity and innovation, excellence, strong leadership, synergy, and other potentials to achieve maximum results.						
	CPL-3	Able to manage one's own learning, and develop oneself as a lifelong learner to compete at the national, and international levels, in order to contribute significantly to solving problems by implementing information and communication technology and paying attention to the principles of sustainability and understanding technology-based entrepreneurship.						
	CPL-5	Able to understand and apply knowledge, insights and sciences related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-culture, economics and business, entrepreneurship, code of ethics and IPR.						
	CPL-8	Able and skilled in using design process tools that include: manual or digital equipment according to technology and the times.						
	Course Learning Outcomes (CPMK)							
	CPMK -1	Students understand product design appreciation, namely being fully aware so that they are able to properly assess the existence of product design.						



	CPMK-2	Students understand the theoretical concepts of product design: (1) function, (2) aesthetics, (3) economy, (4) social, and (5) technology in general in product development.																																		
	CPMK-3	Students are able to describe the values contained in design products and identify the structure and context of design.																																		
	CPMK-4	Students have in-depth knowledge of culture and trend development																																		
	CPMK-5	Students master the ability to appreciate products from the context of: (1) Functional & Aesthetics, (2) Socio-Culture, (3) Technology, (4) Economy, (5) Psychology, (6) Environment and (7) Ethics.																																		
		CPL Matrix – CPMK <table><tr><td>CPMK</td><td>CPL-1</td><td>CPL-3</td><td>CPL-5</td><td>CPL-8</td></tr><tr><td>CPMK-1</td><td>v</td><td>v</td><td></td><td>v</td></tr><tr><td>CPMK-2</td><td>v</td><td></td><td>v</td><td></td></tr><tr><td>CPMK-3</td><td>v</td><td></td><td>v</td><td></td></tr><tr><td>CPMK-4</td><td>v</td><td></td><td>v</td><td></td></tr><tr><td>CPMK-5</td><td>v</td><td></td><td></td><td>v</td></tr></table>					CPMK	CPL-1	CPL-3	CPL-5	CPL-8	CPMK-1	v	v		v	CPMK-2	v		v		CPMK-3	v		v		CPMK-4	v		v		CPMK-5	v			v
CPMK	CPL-1	CPL-3	CPL-5	CPL-8																																
CPMK-1	v	v		v																																
CPMK-2	v		v																																	
CPMK-3	v		v																																	
CPMK-4	v		v																																	
CPMK-5	v			v																																
MK Description	A course that contains appreciation, namely identifying, appreciating and understanding the concept of product design work, as well as phenomena to the latest design issues so that students are able to assess, sort and select concepts to be used as a reference for product design.																																			
Study Material: Learning Materials	Study Materials: 1. Introduction to product appreciation theory, vitruvius theory and aesthetics 2. Good design theory 3. Good design and Iconic Design 4. Product Structure and Product Contextual 5. Post modern theory 6. Product values 7. Product service and interaction 8. Product design and socio-culture																																			



	9. Product design and technology 10. Product design and economy 11. Product design and psychology 12. Product design and environment 13. Product design and professional ethics 14. Publication of design appreciation articles						
References	Primary :						
	1. Kurniawan, Arie. 2022. Design Produced Appreciation . Surabaya: Despro ITS 2. Martin, Bella and Bruce Hanington. 2010. Universal Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions. Massachusetts: Rockport Publishers 3. Lidwell, William, Kritina Holden, Jill Butler. 2003. Universal Principles of Design. Massachusetts: Rockport Publishers, Inc.						
	Secondary :						
	1. Asbhy, Mike and Kara Johnson. 2010. Materials and Design-The Art and Science of Material Selection in Product Design. Burlington: Butterworth-Heinemann 2. Lawson, Bryan.2012. How Designers Think, London: The Architectural Press Ltd 3. Clay, Robert, Beautiful thing an introduction to design, Ney York, Berg, 2009 4. Vihma, Susan (ed), Semantic and Aesthetic Functions in Design. Report of workshop and three papers of the 2nd Nordcode Seminar, Finland:UIAH Helsinki, 2003						
Assigned Lecturer	Arie Kurniawan, S.T, M.Ds.						
Required Courses	-						
Week of -	The final abilities of each learning stage (Sub-CPMK)	Evaluation		Learning Method, Teaching Method, Student Assignments (Time Estimation)		Learning Materials (References)	Weight (%)
		Indicator	Criteria and Form	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)



1	Students know the theory of product appreciation, Vitruvius theory, gestalt and product aesthetics (C1,A1,P1)	Accuracy in the delivery of descriptions of product appreciation, vitruvius theory, gestalt and product aesthetics	Criteria: Accuracy, mastery, sensitivity Form : Non-test Discussion	Form: Lecture Response Discussion Method: Student Center Learning (SCL) - Class discussion Assignment: Delivering opinions and lecture resumes Estimated Time : 1x3x50 = 150 minutes	-	Material: Product Appreciation and Aesthetics' Literature: Kurniawan, Arie. (2022) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	5
2	Students are able to explain the theory of good design in dieter rams (C2,A1,P1)	Clarity in the delivery of descriptions and examples of products with the category of good design dieter rams	Criteria: Accuracy, mastery Form : Non-test Discussion	Form: Lecture Response Discussion Method: Student Center Learning (SCL) - Class discussion Assignment: Expressing opinions related to examples of good design products in turn Estimated Time : 1x3x50 = 150 minutes	-	Material : Good Design Principles Literature: Kurniawan, Arie. (2022) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	7
3	Students are able to distinguish products with Good Design and Iconic Design criteria (C2,A2,P1)	Depth in understanding Good Design and Iconic Design criteria	Criteria: Accuracy, mastery, sensitivity Form:	Form: Lecture Response Discussion Method: Student Center Learning (SCL) -	-	Material : Iconic Design Criteria Literature: Kurniawan, Arie. (2022) Martin, Bella and Bruce Hanington. (2010)	7



			Non-test Discussion	Class discussion Assignment: Find examples of good design and iconic design products Estimated Time : 1x3x50 = 150 minutes		Lidwell, William, Kritina Holden, Jill Butler (2003)	
4	Students are able to interpret Product Structure and Product Context based on their respective sensitivities (C2,A2,P1)	Depth of understanding syntactic and product structure	Criteria: Accuracy, mastery, sensitivity Form : Non-test Discussion	Form: Lecture Response Discussion Method: Student Center Learning (SCL) - Class discussion Assignment: Class discussion related to product structure and theoretical basis that accompanies product appreciation Estimated Time : 1x3x50 = 150 minutes	-	Material : Product Structure & Contextual Literature : Kurniawan, Arie. (2022) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	7
5	Students are able to explain their understanding of Post Modern theory (C2,A2,P1)	Clarity in the delivery of post modern theory on product design development	Criteria: Accuracy, mastery Form : Non-test Discussion	Form: Lecture Response Discussion Method: Student Center Learning (SCL) - Class discussion Assignment: Class discussion related to the characteristics of post modern and the theoretical basis that	-	Material : Post Modern Literature: Kurniawan, Arie. (2022) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	5



				accompanies product appreciation. Estimated Time : 1x3x50 = 150 minutes			
6	Students are able to explain the value of value in product Products with simple case studies (C2,A2,P1)	Depth of review in explaining the value of the design product	Criteria: Accuracy, mastery, sensitivity Form : Non-test Discussion	Form: Lecture Response Discussion Methods : Case method Assignment: Appreciation workshop for the product chosen by students and elaborate on the value of product-related values (function, aesthetics and structure). Estimated Time : 1x3x50 = 150 minutes	-	Material : Product Value Literature: Kurniawan, Arie. (2022) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	7
7	Students are able to explain the concept of Product service & Interaction (C4,A2,P2)	Depth and sensitivity in explaining the concept of service products and interactions	Criteria: Accuracy, mastery, sensitivity Form : Non-test Discussion	Form: Lecture Response Discussion Method: Student Center Learning (SCL) - Class discussion Assignment: Group presentation of the results of joint discussions accompanied by product appreciation (simple cases related to product service and interaction)	-	Material : Product Service Literature: Kurniawan, Arie. (2022) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	5



				Estimated Time : 1x3x50 = 150 minutes			
8	Midterm Evaluation / Midterm Exam: Collection of revised assignments						
9	Students are able to describe their understanding of product design and socio-culture (C4,A2,P2)	Depth and sensitivity in explaining design studies related to socio-culture	Criteria: Accuracy, mastery Form: Non-test Discussion Presentation	Form: Lecture Response Discussion Method: Student Center Learning (SCL) - Class discussion Assignment: Group presentation of the results of joint discussions accompanied by product appreciation (design vs socio-cultural phenomena) Estimated Time : 1x3x50 = 150 minutes	-	Material : Industrial Design vs Social : Ethnographic Design Studies Design Studies and Indonesian Cultural Identity Popculture Local Genius Proud to be Made in Indonesia Design community & society Literature: Kurniawan, Arie. (2022) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	7
10	Students are able to elaborate their understanding of Product design and technology (C4,A2,P2)	Depth and sensitivity in explaining design studies related to technology	Criteria: Accuracy, mastery Form : Non-test	Form: Lecture Response Discussion Method: Student Center Learning (SCL) -	-	Material : Industrial Design vs Technology: Integrated digital Design Smart Product Robotic & mechatronic	7



			Discussion Presentation	Class discussion Assignment: Group presentation of the results of joint discussions accompanied by product appreciation (design vs technology phenomenon) Estimated Time : 1x3x50 = 150 minutes		UIUX technology TKDN Literature: Kurniawan, Arie. (2022) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	
11	Students are able to describe their understanding of Product design and Economics (C4,A2,P2)	Depth and sensitivity in explaining design studies related to economics	Criteria: Accuracy, mastery Form : Non-test Discussion Presentation	Form: Lecture Response Discussion Method: Student Center Learning (SCL) - Class discussion Assignment: Group presentation of the results of joint discussions accompanied by product appreciation (design vs economy phenomenon) Estimated Time : 1x3x50 = 150 minutes	-	Material : Industrial Design vs Economy: Economic value product Persona & Muse Industrial Design cluster UMKM Global market trends Design and village economy Literature: Kurniawan, Arie. (2022) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	7
12	Students are able to describe their understanding of	Depth and sensitivity in explaining design	Criteria: Accuracy, mastery	Form: Lecture Response Discussion	-	Material : Industrial Design vs Psychology: Emosional desain	7



	Product design and Psychology (C4,A2,P2)	studies related to psychology	Form : Non-test Discussion Presentation	Method: Student Center Learning (SCL) - Class discussion Assignment: Group presentation of the results of joint discussions accompanied by product appreciation (design vs psychology phenomenon) Estimated Time : 1x3x50 = 150 minutes		Human Behaviour Retro vintage & Classic Scandinavian design Fibonacci Sequences Color psychology Literature: Kurniawan, Arie. (2022) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	
13	Students are able to describe their understanding of Product and Environment design (C4,A2,P2)	Depth and sensitivity in explaining design studies related to the environment	Criteria: Accuracy, mastery Form : Non-test Discussion Presentation	Form: Lecture Response Discussion Method: Student Center Learning (SCL) - Class discussion Assignment: Group presentation of the results of joint discussions accompanied by product appreciation (design vs environment phenomenon) Estimated Time : 1x3x50 = 150 minutes	-	Material : Industrial Design vs Sustainable Environment: SDGS Design footprint Zero waste Green Design Policy Literature: Kurniawan, Arie. (2022) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	7
14	Students are able to describe their understanding of	Depth and sensitivity in explaining design	Criteria: Accuracy, mastery	Form: Lecture Response	-	Material :	7



	product design and ethics (C4,A2,P2)	studies related to professional ethics	Form : Non-test Discussion Presentation	Discussion Method: Student Center Learning (SCL) - Class discussion Assignment: Group presentation of the results of joint discussions accompanied by product appreciation (design vs ethics phenomenon) Estimated Time : 1x3x50 = 150 minutes		Industrial Design Ethics: Product designer profession Design services policy Professional associations Design collaboration HKI Literature: Kurniawan, Arie. (2022) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	
15,16	Students are able to compile publication of design appreciation articles (C4,A4,P3)	Accuracy in describing the sensitivity of product appreciation and systematically compiled for publication	Criteria: Accuracy, mastery Form : Non-test Discussion	Form: Response Discussion Method: Team based project & Self Direct Learning Assignment : Group division and presentation of re-discussion of appreciation theory accompanied by the selection of product examples by individuals then made into a collection of articles for publication. Estimated Time : 3x3x50 = 450 minutes	-	Material : - Literature: Kurniawan, Arie. (2022)	15



DP234418 CAE & RENDERING

	INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code
SEMESTER LEARNING PLAN						
COURSE (MK)	CODE	MK CLUSTER	CREDIT (sks)		SEMESTER	Date of Compilation
CAE & RENDERING	DP234418	Product Design Technology	T=1	P=4	4	12 Desember 2022
AUTHORIZATION 	RPS Developer		RMK Coordinator		Head of Study Program	
	Ari Dwi Krisbianto, S.T., M.Ds.		Djoko Kuswanto, ST., M.Biotech		Bambang Tristiyono, ST., M.Si	
Learning Outcomes (CP)	Study Program CPL charged to MK					
	CPL-4	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.				
	CPL-5	Able to understand and apply knowledge, insights and sciences related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-culture, economics and business, entrepreneurship, code of ethics and HKI.				
	CPL-8	Able and skilled in using design process tools that include: manual or digital equipment according to technology and the times.				
	CPL-9	Able to present design concept ideation through verbal communication, visual media, and prototypes (Model/mock-up/prototype) using various relevant technologies.				
	Course Learning Outcomes (CPMK)					
	CPMK-1	Students are able to understand the application interface.				
	CPMK-2	Students are able to recognize and decide to use appropriate computer-aided design tools for further study and design applications and get a professional overview based on compatible operating systems, unique features and economic factors.				
	CPMK-3	Students are able to make geometric and organic shapes from reference drawings				
	CPMK-4	Students are able to determine the size, tolerance and breakage of pair components.				



	CPMK-5	Students are able to provide component and assembly information with a logical approach to geometry and technical factors.				
	CPMK-6	Students are able to use the latest supporting applications for more precise measurement and shape reading.				
	CPMK-7	Students are able to use the latest supporting applications for visual fixed and motion simulation.				
		CPL Matrix – CPMK				
		CPMK	CPL-4	CPL-5	CPL-8	CPL-9
		CPMK-1			V	
		CPMK-2	V	V	V	
		CPMK-3	V	V		V
		CPMK-4	V			V
		CPMK-5	V			V
		CPMK-6			V	
		CPMK-7			V	
MK Description	A course that studies the process of pouring ideas and ideas in the form of digital 3D images using parametric auxiliary applications for simulation purposes to support product design.					
Study Materials: Learning Materials	1. Introduction: Selection of software to be studied and projected use according to the design to be explored. 2. Drawing preparation (setting) Dimensions, 2D (units, grids, snaps...), add cut out holes, 3D (basic solid construction), boolean operations. 3. Image organization. Primitive forms and 2D to 3D image transformation. 4. Lines, surface exploration and reverse 5. Solid geometry and transform 6. Geometry analysis 7. Surface geometry 8. Special features (flatten surface, orient, flow along curve-surface...) 9. Geometry logic, assembling process, details 10. Applications for rendering, rendering tools (preview, light, material properties, drafting...) 11. Operational drawing and outline. Reverse engineering through real measurements 12. Reverse modeling (photogrammetry) 13. Animations, environments, supporting properties/parts 14. Render animation settings 15. Review from ideation to manufacturing preparation					



16. Animation for operational processes and presentations							
References	Primary:						
	- Um, D. (2018). <i>Solid modeling and applications: Rapid prototyping, CAD and CAE theory</i>. Corpus Christi, TX: Springer International Publishing A. - Chang, K. H. (2014). <i>Product design modeling using CAD/CAE: the computer aided engineering design series</i>. Academic Press.						
	Secondary:						
Assigned Lecturer	Ari Dwi Krisbianto, MY Alief Samboro, Audit Yulardi, A Rieskha Harseno, Irna Arlianti						
Required Courses							
Week of -	The final abilities of each learning stage (Sub-CPMK)	Evaluation		Learning Method, Teaching Method, Student Assignments (Time Estimation)		Learning Materials (Reference)	Weight (%)
		Indicator	Criteria and Form	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students know the preparation and organization of drawings	Students are able to know the prospects of applications that facilitate the design of products of interest	Students are able to decide to use applications that will be learned and explored during the learning process Form: Discussion and survey	Lecture, response and discussion. 150 minutes		Um, D (2018) & Chang, K.H (2014)	0
2	Students are able to master image element tools	Students can apply tools to case study products	Students can create geometry correctly and accordingly	Lecture, response and discussion.		Um, D (2018) & Chang, K.H (2014)	0



	(curve, surface, solid, mesh)			Exploration of curve, surface and solid primitives tools 150 minutes			
3	Students are able to master transform tools	Students are able to make adjustments and processing	Students are able to do shape changes and editing	Lecture, response and discussion. Exploration of transforms tools. 150 minutes		Um, D (2018) & Chang, K.H (2014)	0
4	Students are able to analyze the geometry	Students are able to evaluate using analysis tools	Students are able to know the quality of surface, heavy point and center point of volume geometry	Lecture, response, discussion. Exploration of tool length, volume, center of dimension. 150 minutes		Um, D (2018) & Chang, K.H (2014)	0
5	Students are able to use special features of the software	Students are able to find and use special features as needed for the field of specialization they want to explore.	Students can use special features for pattern breaking, assembling and volume calculation.	Lecture, response, discussion. Exploration of flatten surfaces, rolls. 150 minutes		Um, D (2018) & Chang, K.H (2014)	10
6	Students are able to make follow-up processing results from analysis	Students are able to adjust according to	Students can make pattern breaks, segment breaks, and volume adjustments	Lecture, response, discussion.		Um, D (2018) & Chang, K.H (2014)	10

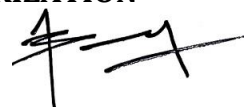


		the next design process		Making the join side of the cutting pattern. 150 minutes			
7	Students are able to measure dimensions	Students are able to show and take measurements to check.	Students are able to issue numbers as needed to be known	Lecture, response, discussion. 150 minutes		Um, D (2018) & Chang, K.H (2014)	0
8	Midterm Evaluation / Midterm Exam						10
9	Students know the logic of geometry	Students understand the volume geometry of the product as a visualization of the correct simulation.	Students understand solid, thick and hollow geometry	Lecture, response and discussion. 150 minutes		Um, D (2018) & Chang, K.H	0
10	Students understand the concept of finite element analysis	Students know the concept of static and dynamic simulation	Students are able to calculate and measure product performance. Case study: product loading	Lecture, response, discussion. 150 minutes		Um, D (2018) & Chang, K.H (2014)	10
11	Students are able to create geometry from photogrammetry	Students are able to do digital processing of physical products using	Students are able to create digital geometry of real physical products for visualization and simulation purposes.	Lecture, response, discussion. Photogrammetry practice. 150 minutes		Um, D (2018) & Chang, K.H (2014)	10



		a simple camera					
12	Students are able to create output from 2D rendering results	Students can do 2D rendering	Students can create realistic 2D drawings of products	Lecture, response, discussion. Practical rendering, set materials and lighting. 150 minutes		Um, D (2018) & Chang, K.H (2014)	10
13	Students are able to know the concept of animation simulation	Students understand the steps of 3D animation process	Students understand the assembly process and product operation	Lecture, response, discussion. Exploration of animation tools. 150 minutes		Um, D (2018) & Chang, K.H (2014)	0
14	Students are able to create animated videos from geometry that has been made	Students are able to create product components to be made, explode view and simulate operations.	Students are able to move by moving, translating, rotating and a combination of all of them	Lecture, response, discussion. 150 minutes		Um, D (2018) & Chang, K.H (2014)	35
15	Students are able to create an animation portfolio	Students are able to package products that are made attractively and clearly	Students are able to present an animated video that is interesting and clear	Lecture, response, discussion. 150 minutes		Um, D (2018) & Chang, K.H (2014)	5
16	End of Semester Evaluation / End of Semester Exam						0

**DP234419 DESIGN SYSTEM ENGINEERING**

		INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code	
SEMESTER LEARNING PLAN								
COURSE (MK)		CODE	MK CLUSTER		CREDIT (sks)		SEMESTER	Date of Compilation
DESIGN SYSTEMS ENGINEERING		DP234419	Teknologi Desain Produk		T=1	P=2	4 (Empat)	17 Nopember 2022
AUTHORIZATION 		RPS Developer		RMK Coordinator		Head of Study Program		
		Arie Kurniawan, S.T, M.Ds		Djoko Kuswanto, ST., M.Biotech		Bambang Tristiyono, S.T., M.Si		
Learning Ourcomes (CP)	Study Program CPL charged to MK							
	CPL-1	Able to demonstrate attitudes and characters that reflect: devotion to God Almighty, ethics and integrity, noble character, sensitive and concerned about social and environmental issues, respect for cultural differences and pluralism, uphold law enforcement prioritizing the interests of the nation and the wider community, through creativity and innovation, excellence, strong leadership, synergy, and other potentials to achieve maximum results.						
	CPL-3	Able to manage one's own learning, and develop oneself as a lifelong learner to compete at the national, and international levels, in order to contribute significantly to solving problems by implementing information and communication technology and paying attention to the principles of sustainability and understanding technology-based entrepreneurship.						
	CPL-4	Mampu memahami dan menerapkan pengetahuan tentang konsep teoretis perancangan produk, meliputi: prinsip dasar desain dan estetika, karakter bahan, fungsi, Penngalaman pengguna, ergonomi, rekayasa sistem desain, teknologi, faktor ekonomis, Faktor Lingkungan dan sosial budaya, aspek pasar dan bisnis.						
	CPL-5	Able to understand and apply knowledge, insights and sciences related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-culture, economics and business, entrepreneurship, code of ethics and HKI.						



	CPL-6	Able to design products and their systems with consideration of all aspects that influence them, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.																																																						
	CPL-8	Able and skilled in using design process tools that include: manual or digital equipment according to technology and the times.																																																						
	CPL-9	Able to present design concept ideation through verbal communication, visual media, and prototypes (Model/mock-up/prototype) using various relevant technologies.																																																						
	Course Learning Outcomes (CPMK)																																																							
	CPMK-1	Students are able to understand the systems involved in product development.																																																						
	CPMK-2	Shape development method on the product																																																						
	CPMK-3	Students are able to produce product development concepts with system engineering and related methods to increase product value																																																						
	CPMK-4	Students understand the principles and current issues in manufacturing technology in general in increasing product value.																																																						
	CPMK-5	Students are able to comprehensively explain the criteria in product development, conceptual, general design management including systems related to product implementation.																																																						
		CPL Matrix – CPMK <table><tr><td>CPMK</td><td>CPL-1</td><td>CPL-3</td><td>CPL-4</td><td>CPL-5</td><td>CPL-6</td><td>CPL-8</td><td>CPL-9</td></tr><tr><td>CPMK-1</td><td>v</td><td>v</td><td>v</td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK-2</td><td>v</td><td></td><td>v</td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK-3</td><td>v</td><td></td><td></td><td>v</td><td></td><td>v</td><td></td></tr><tr><td>CPMK-4</td><td>v</td><td></td><td></td><td></td><td>v</td><td>v</td><td></td></tr><tr><td>CPMK-5</td><td>v</td><td>v</td><td></td><td>v</td><td></td><td></td><td>v</td></tr></table>							CPMK	CPL-1	CPL-3	CPL-4	CPL-5	CPL-6	CPL-8	CPL-9	CPMK-1	v	v	v					CPMK-2	v		v					CPMK-3	v			v		v		CPMK-4	v				v	v		CPMK-5	v	v		v			v
CPMK	CPL-1	CPL-3	CPL-4	CPL-5	CPL-6	CPL-8	CPL-9																																																	
CPMK-1	v	v	v																																																					
CPMK-2	v		v																																																					
CPMK-3	v			v		v																																																		
CPMK-4	v				v	v																																																		
CPMK-5	v	v		v			v																																																	
MK Description	Lectures in Product Design ITS Surabaya which contains an understanding of the design system. Basically this lecture is related to the theory presented in design appreciation and design methodology, while in the design system lecture, the deepening of the methodology is emphasized on extracting system knowledge in product design.																																																							
Study Materials: Learning Materials	Study Materials: 1. Introduction to System Design and Engineering technology 2. Shape development method for products 3. Basic theory of system modularity																																																							



	4. Modularity system engineering 5. Basic theory of Interchangeability system 6. Interchangeability system engineering 7. Insights & basic product mechanics and operational engineering 8. Trend of product mechanics and utility engineering 9. Reference product research and product quality matrix 10. Engineering in design, modification, custom and opensourch systems 11. Engineering in design systems in generating alternatives, product lines and product series 12. Introductory theory of product value chain 13. Sustainable products (SDGs) 14. Case study of simple product development and related systems
References	Primary :
	1. Kurniawan, Arie. 2018. Peek & Seek : System Design . Surabaya : Despro ITS 2. Kurniawan, Arie. 2021. Buku Perkuliahan System Desain . Surabaya : Despro ITS 3. Martin, Bella and Bruce Hanington. 2010. Universal Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions. Massachusetts: Rockport Publishers 4. Lidwell, William, Kritina Holden, Jill Butler. 2003. Universal Principles of Design. Massachusetts: Rockport Publishers, Inc.
	Secondary :
	1. Asbhy, Mike and Kara Johnson. 2010. Materials and Design-The Art and Science of Material Selection in Product Design. Burlington: Butterworth-Heinemann 2. Lawson, Bryan.2012. How Designers Think, London: The Architectural Press Ltd 3. Brown, Tim. 2010. Change by Design, HarperCollins 4. Nelson, Harold.2012.The Design Way: Intentional Change in Unpredictable World. London : MIT Press 5. Vihma, Susan (ed), Semantic and Aesthetic Functions in Design. Report of workshop and three papers of the 2nd Nordcode Seminar, Finland:UIAH Helsinki, 2003
Assigned Lecturer	Arie Kurniawan, S.T, M.Ds.



Required Courses		-					
Week of -	The final abilities of each learning stage (Sub-CPMK)	Evaluation		Learning Method, Teaching Method, Student Assignments (Time Estimation)		Learning Materials (References)	Weight (%)
		Indicator	Criteria and Form	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students know the description of System Design and Engineering technology in the realm of product development (C1,A1,P1)	Accuracy in the delivery of descriptions of design systems and engineering technology in the realm of product development	Criteria: Accuracy, mastery, Form: Non-test Discussion	Form: Lecture Response Discussion Method: Non-scl Assignment: Submission of opinions and active discussion related to the system that accompanies product development. Estimated Time : 1x3x50 = 150 minutes	-	Material : Design and engineering systems in product development Literature: Kurniawan, Arie. (2021) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	5
2	Students are able to explain several methods of developing shapes on products (C2,A1,P1)	Clarity in the delivery of descriptions of various methods of creative exploration of finding shapes in products	Criteria: Accuracy, mastery, Form: Non-test Discussion	Form: Lecture Response Discussion Method: Team based project Assignment:	-	Material : Creative exploration in search of form Literature: Kurniawan, Arie. (2021) Martin, Bella and Bruce Hanington. (2010)	10



				workshop of forming development method with product sketch output Estimated Time : 1x3x50 = 150 minutes		Lidwell, William, Kritina Holden, Jill Butler (2003)	
3	Students are able to explain the basic theory of Modularity System and various types of modularity (C2,A1,P1)	Clarity in explaining the basic theory of modularity along with examples and literacy	Criteria: Accuracy, mastery, Form: Non-test Discussion	Form: Lecture Response Discussion Method: Student Center Learning (SCL) - Class discussion Assignment: Active submission of opinions related to modularity theory Estimated Time : 1x3x50 = 150 minutes	-	Material : Modularity Literature : Kurniawan, Arie. (2021) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	5
4	Students are able to implement Modularity System method and engineering in product development (C3,A2,P2)	Accuracy in formulating system modularity	Criteria: Accuracy, mastery, systematics Form: Non-test Sketch workshop	Form: Lecture Workshop Methods : Case method Assignment : Workshop on modular system engineering with grid system method Estimated Time :	-	Material : Workshop Modularity Literature: Kurniawan, Arie. (2021) Martin, Bella and Bruce Hanington. (2010)	10



				1x3x50 = 150 minutes		Lidwell, William, Kritina Holden, Jill Butler (2003)	
5	Students are able to explain the basic theory of Interchangeability System (C2, A1, P1)	Clarity in explaining the basic theory of the interchangeability system	Criteria: Accuracy, mastery, Form: Non-test Discussion	Form: Lecture Response Discussion Method: Student Center Learning (SCL) - Class discussion Assignment: Submission of opinions in the discussion of interchangeability discussion Estimated Time : 1x3x50 = 150 minutes	-	Material : Interchangeability Literature: Kurniawan, Arie. (2021) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	5
6	Students are able to implement methods and engineering of Interchangeability System in product development (C3,A2,P2)	Accuracy in implementing the interchangeability system	Criteria: Accuracy, mastery, Form: Non-test Sketch workshop	Form: Lecture Workshop Methods : Case method Assignment : Product interchangeability engineering workshop with a case study determined by the group. Estimated Time :	-	Material : Workshop interchangeability Literature: Kurniawan, Arie. (2021) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	10



				1x3x50 = 150 minutes			
7	Students are able to interpret Insights & engineering mechanics and basic product operations (C2,A2,P1)	Depth of understanding of product mechanical and operational engineering	Criteria: Accuracy, Mastery, sensitivity Form : Non-test Discussion Presentation	Form: Lecture Response Discussion presentation Method: Student Center Learning (SCL) - Class discussion Assignment: Class presentation related to product examples that use innovative mechanics and operational systems. Estimated Time : 1x3x50 = 150 minutes	-	Material : Engineering of product mechanics and operational systems Literature : Kurniawan, Arie. (2021) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	5
8	Midterm Evaluation / Midterm Exam						
9	Students are able to interpret mechanical engineering trends and product utility (C2, A2, P1)	Depth of understanding of product trends and complexity	Criteria: Accuracy, Mastery, sensitivity Form : Non-test Discussion Presentation	Form: Lecture Response Discussion Presentation Method: Student Center Learning (SCL) - Class discussion Assignment:	-	Material : Trend and mechanical engineering Literature: Kurniawan, Arie. (2021) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	5



				Estimated Time : 1x3x50 = 150 minutes			
10	Students are able to determine reference products and create product quality matrices (Matrix product quality-Benchmarking) (C3,A3,P2)	Accuracy in determining reference products and benchmarking product quality	Criteria: Accuracy, Mastery Systematics Form: Non Test wokshop	Form: Lecture Workshop Methods : Case method Assignment : Presentation of a simple case study on the application of mechanical engineering and product utility in a concept sketch. Estimated Time : 1x3x50 = 150 minutes	-	Material : Matrix product quality Literature: Kurniawan, Arie. (2021) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	5
11	Students are able to differentiate Engineering in design, modification, custom and opensourch systems (C4,A3,P2)	Accuracy and depth in differentiating system software (modified, custom and opensourch)	Criteria: Accuracy, mastery Form: Non Test Presentation Discussion	Form: Lecture Response Discussion Presentation Methods : Case method Assignment: Group presentation of workshop results related to engineering in modified, custom and opensource design systems.	-	Material : Modified, customized, and opensourch Literature: Kurniawan, Arie. (2021) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	5



				Estimated Time: 1x3x50 = 150 minutes			
12	Students are able to differentiate engineering in the design system in producing alternatives, product lines and product series (C4,A3,P2)	Accuracy and depth in differentiating alternate product development systems, series and line ups.	Criteria: Accuracy, mastery Form: Non Test Workshop Presentation Discussion	Form: Lecture Workshop Presentation Methods : Case method Assignment: poster of workshop results related to engineering in design systems to produce alternatives, product lines and product series according to the core courses taken. Estimated Time : 1x3x50 = 150 minutes	-	Material : Product series, alternative and line up Literature: Kurniawan, Arie. (2021) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	5
13	Students are able to analyze the product value chain simply (C4, A3, P3)	Accuracy and clarity in explaining the product value chain simply	Criteria: Accuracy, Systematic Form : Non Test Presentation Discussion	Form: Lecture Response Discussion Method: Student Center Learning (SCL) - Class discussion Assignment: Presentation related to product value chain Estimated Time :	-	Material : Product value chain Literature: Kurniawan, Arie. (2021) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	5



				1x3x50 = 150 minutes			
14	Students are able to evaluate products from the point of view of Sustainable products (SDGs) (C5, A4, P4)	Accuracy and clarity of evaluation results described systematically	Criteria: Accuracy, Systematic Form : Non Test Presentation Discussion	Form: Lecture Response Discussion Method: Student Center Learning (SCL) - Class discussion Assignment: Class presentation of sdgs phenomenon and product design Estimated Time : 1x3x50 = 150 minutes	-	Material : SDGS Literature: Kurniawan, Arie. (2021) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	5
15	Students are able to produce simple solutions from daily phenomena (design projects) with an in-depth approach related to design systems engineering.	Accuracy and systematics in solving problems shown by visualization and description of concepts	Criteria: Accuracy, Mastery, Systematic Form: Non test Presentation	Form: Lecture Response Discussion Presentation Method: Team based project Assignment: Group presentation with case study of product development according to core courses with related systems. Estimated Time : 3x3x50 = 450 minutes	-	Material : Product planning and design decisions Literature : Kurniawan, Arie. (2021) Martin, Bella and Bruce Hanington. (2010) Lidwell, William, Kritina Holden, Jill Butler (2003)	5
16	End of Semester Evaluation / End of Semester Exam: Archive of lecture documents						15

**DP234420 PRODUCT DESIGN STUDIO 2**

	INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code
SEMESTER LEARNING PLAN						
COURSE (MK)	CODE	MK CLUSTER	CREDIT (sks)		SEMESTE R	Date of Compilation
PRODUCT DESIGN STUDIO 2	DP234420	Perancangan Produk	T=1	P=4	4	18 Januari 2023
AUTHORIZATION	RPS Developer	RMK Coordinator	Head of Study Program			
	● Ari Dwi Krisbianto, S.T., M.Ds. ● Audit Yulardi, S.T., M.Ds. ● Primaditya, S.Sn., M.Sn ● Arie Kurniawan, S.T., M.Ds	Ari Dwi Krisbianto, S.T., M.Ds.	Bambang Tristiyono, S.T., M.Si			
Learning Ourcomes (CP)	Study Program CPL charged to MK					
	CPL-2	Able to study and utilize science and technology in order to apply it in the field of Product Design, and be able to make decisions appropriately from the results of their own work and group work in the form of a final project report or other forms of learning activities whose output is equivalent to the final project through logical, critical, systematic and innovative thinking.				
	CPL-4	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.				



	CPL-5	Able to understand and apply knowledge, insights and sciences related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-culture, economics and business, entrepreneurship, code of ethics and IPR.						
	CPL-6	Able to design products and their systems with consideration of all aspects that influence them, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.						
	CPL-8	Able and skilled in using design process tools that include: manual or digital equipment according to technology and the times.						
	CPL-9	Able to present design concept ideation through verbal communication, visual media, and prototypes (Model/mock-up/prototype) using various relevant technologies.						
	Course Learning Outcomes (CPMK)							
	CPMK-1	Students are able to master the stages of the design process including: Detailed definition of product needs; Conduct research to obtain information to derive concepts; Able to develop and display concepts; Perform iterations - apply concepts to design cycle activities and make improvements until finding the final product to be made; and carry out manufacturing production.						
	CPMK-2	Students are able to sketch product concepts, create design alternatives, and develop them						
	CPMK-3	Students are able to review the alternatives that have been made and make an assessment based on design criteria						
	CPMK-4	Students are able to create design specifications, simulate shapes in 3DCad, and plan early stage brand strategies (packaging, logos and product brands).						
	CPMK-5	Students realize design alternatives in physical form (model study) and conduct development by evaluating form, ergonomics, materials and technical aspects.						
	CPMK-6	Students create further product prototypes that are full-scale, functional with good quality and representative.						
	CPMK-7	Students complete with presentation tools and product documents that are communicative, coherent and good.						
		CPL Matrix – CPMK						
		CPMK	CPL-2	CPL-4	CPL-5	CPL-6	CPL-8	CPL-9



		CPMK-1	V	V				
		CPMK-2		V	V			
		CPMK-3				V		
		CPMK-4				V	V	
		CPMK-5				V	V	V
		CPMK-6					V	V
		CPMK-7						V
MK Description	Product design courses related to the premise of function, ergonomics, materials, manufacturing (materials and processes) and aesthetics (form and image) in the scope of products (fashion-apparel-jewelry, appliances, furniture and transportation).							
Study Materials: Learning Materials	1. Introduction: Introduction to Product Design 2 (fashion-apparel-jewelry, appliances, furniture and transportation). Explanation of Product Design 2 tasks, technical aspects and scope 2. Empathy 3. Preliminary idea 4. Data collection and processing methods: user activities and Human Factors in products (fashion-apparel-jewelry, appliances, furniture and transportation) 5. Materials and processing in product design 6. Reverse engineering 7. Exploration and ideation 8. Design development (user interface 9. Product simulation (Lo-fi prototyping, usability testing, configuration) 10. Evaluation 11. Design refinement 12. Product manufacturing 13. Design development: Prototyping/modeling 14. Presentation drawings & operational drawings (review). 15. Engineering drawings and product cutting patterns 16. Portfolio & presentation							
References	Primary :							



	1. Mukhopadhyay, P. (2022). Ergonomics in Fashion Design: A Laypersons' Approach. Springer Nature. 2. Mbeledogu, E. (2022). Fashion Design Research Second Edition. Laurence King Publishing. 3. McAssey, J., Benson, S., & Buckley, C. (2022). Fashion Styling. Bloomsbury Publishing. 4. Sorger, R., & Seivewright, S. (2021). Research and design for fashion. Bloomsbury Publishing. 5. Rodgers, P., & Milton, A. (2011). Product design. Laurence King. 6. Postell, Jim. (2012). Designing Furniture, Second Edition, Willey, Canada. 7. Cross, N. (2011). Design thinking: Understanding how designers think and work. Berg
	Secondary: 1. Muthu, S. S. (Ed.). (2018). Circular Economy in Textiles and Apparel: Processing, Manufacturing, and Design. Woodhead publishing. 2. Das, S. (2016). Product safety and restricted substances in apparel. WPI Publishing. 3. Zakaria, N., & Gupta, D. (Eds.). (2019). Anthropometry, apparel sizing and design. Woodhead Publishing. 4. Mia, M. M., & Yip, P. (Eds.). (2016). Bag Design: A Handbook for Accessories Designers. Fashionary. 5. Hayes, S. G., & Venkatraman, P. (Eds.). (2016). Materials and technology for sportswear and performance apparel (p. 370). Boca Raton, FL: CRC Press. 6. Blackburn, R. (Ed.). (2015). Sustainable apparel: Production, processing and recycling. Woodhead Publishing. 7. Lee, Y. A. Leading Edge Technologies in Fashion Innovation. 8. Eissen, K., & Steur, R. (2011). <i>Sketching: the basics; the prequel to Sketching: drawing techniques for product designers</i>. BIS: Amsterdam. OCLC, 756275344. 9. Ashby, M. F., & Johnson, K. (2013). <i>Materials and design: the art and science of material selection in product design</i>. Butterworth-Heinemann.
Assigned Lecturer	
Required Courses	-



Week of -	The final abilities of each learning stage (Sub-CPMK)	Evaluation		Learning Method, Teaching Method, Student Assignments (Time Estimation)		Learning Materials (References)	Weight (%)
		Indicator	Criteria and Form	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students are able to identify design problems within the scope of existing product functions and user activities, according to case studies	Students do mind mapping, identify and formulate problems according to the scope and case study.	Criteria: Accuracy and insight Form: Non-test	Form: Lecture Discussion Independent assignment Method : Discussion Search for information and secondary data Estimated time : 1x2x50'		Literature: 1. Mbeledogu, E. (2022). Fashion Design Research Second Edition. Laurence King Publishing 2. Sorger, R., & Seivewright, S. (2021). Research and design for fashion. Bloomsbury Publishing. 3. Rodgers, P., & Milton, A. (2011). Product design. Laurence King. 4. Postell, Jim. (2012). Designing Furniture, Second Edition, Willey, Canada. 5. 3. Cross, N. (2011). Design thinking: Understanding how designers think and work. Berg	2.5
2	Students are able to carry out field observations, observe activities or	Students recognize and	Criteria:	Form: Lecture		Literature:	2.5



	interactions of users and products (fashion-apparel-jewelry, appliances, furniture and transportation) according to case studies.	know the problems, shortcomings and weaknesses of the product based on data, experience and information.	Accuracy and insight Form : Non-test	Discussion Independent assignment Method: Case based learning Assignment: Product identification Estimated time : 1x2x50'		1. Mbeledogu, E. (2022). Fashion Design Research Second Edition. Laurence King Publishing 2. Sorger, R., & Seivewright, S. (2021). Research and design for fashion. Bloomsbury Publishing. 3. Rodgers, P., & Milton, A. (2011). Product design. Laurence King. 4. Postell, Jim. (2012). Designing Furniture, Second Edition, Willey, Canada.	
3	Students are able to sketch alternative product development ideas	Students know the initial problem solving and are able to offer form and function as well as proposed features in the form of sketches.	Criteria: Sensitivity and mastery Form : Assignment	Form: Studio practice Method : Discovery learning Assignment: Alternative sketch Estimated time :		Literature: 1. McAssey, J., Benson, S., & Buckley, C. (2022). Fashion Styling. Bloomsbury Publishing. 2. Eissen, K., & Steur, R. (2011). Sketching: the basics; the prequel to Sketching: drawing techniques for product designers. BIS:	5



				1x2x50'		Amsterdam. OCLC, 756275344.	
4	Students are able to process ideas and determine the right component configuration based on the formulation of design needs	Students are able to determine the position of product components based on data obtained from interviews, user road maps and activity studies.	Criteria: Accuracy and sensitivity Form : Non-test	Form: Studio practice Method : Case based learning Assignment: Configuration study Estimated time : 1x2x50'		Literature : 1. Lee, Y. A. Leading Edge Technologies in Fashion Innovation. 2. Mukhopadhyay, P. (2022). Ergonomics in Fashion Design: A Laypersons' Approach. Springer Nature. 3. Rodgers, P., & Milton, A. (2011). Product design. Laurence King. 4. Postell, Jim. (2012). Designing Furniture, Second Edition, Willey, Canada. 5. Cross, N. (2011). Design thinking: Understanding how designers think and work. Berg	5
5	Able to determine materials according to design needs.	Correct selection of materials and components according to design needs.	Criteria: Accuracy and insight Form: Non-test	Form: Reception, Workshop Method: Case based learning Assignment: Make an analysis of material needs and make the right		Literature : 1. Das, S. (2016). Product safety and restricted substances in apparel. WPI Publishing. 2. Hayes, S. G., & Venkatraman, P. (Eds.). (2016). Materials and	5



				material selection according to design needs. Estimated time : 2x2x50'		technology for sportswear and performance apparel (p. 370). Boca Raton, FL: CRC Press. 3. Blackburn, R. (Ed.). (2015). Sustainable apparel: Production, processing and recycling. Woodhead Publishing. 4. Ashby, M. F., & Johnson, K. (2013). <i>Materials and design: the art and science of material selection in product design</i> . Butterworth-Heinemann.	
6	Students are able to apply ergonomic aspects to products	Students know product ergonomics for each category (fashion-apparel-jewelry, appliances, furniture and transportation)	Criteria: Accuracy, mastery, sensitivity Form : Non-test	Form: Studio practice Method : Case based learning Assignment: Ergonomics and activity study Estimated time : 1x2x50'		Literature : 1. Mukhopadhyay, P. (2022). Ergonomics in Fashion Design: A Laypersons' Approach. Springer Nature. 2. Zakaria, N., & Gupta, D. (Eds.). (2019). Anthropometry, apparel sizing and design. Woodhead Publishing. 3. Rodgers, P., & Milton, A. (2011). Product design. Laurence King.	10



						4. Postell, Jim. (2012). Designing Furniture, Second Edition, Willey, Canada. 5. Cross, N. (2011). Design thinking: Understanding how designers think and work. Berg	
7	Students are able to develop aesthetic concepts, existing designs, moodboards, material boards.	Students are able to collect various similar existing products and then analyze the advantages and advantages in terms of user interface, ergonomic aspects, materials and product feasibility.	Criteria: Accuracy, mastery, sensitivity of form, engineering and aesthetics Form : Non-test	Form: Studio practice Method : Case based learning Assignment: Existing product study Estimated time : 2x2x50'		Literature : 1. Lee, Y. A. Leading Edge Technologies in Fashion Innovation. 2. Mukhopadhyay, P. (2022). Ergonomics in Fashion Design: A Laypersons' Approach. Springer Nature. 3. Rodgers, P., & Milton, A. (2011). Product design. Laurence King. 4. Postell, Jim. (2012). Designing Furniture, Second Edition, Willey, Canada. 5. Cross, N. (2011). Design thinking: Understanding how designers think and work. Berg	10
8	Students are able to use and apply reference products as design considerations	Students are able to determine	Criteria: Accuracy, mastery,	Form: Studio practice		Literature:	5



		reference products that can be seen features, updates on the latest developments and trends that are taken into consideration to be adapted or even find new systems.	sensitivity to form, aesthetics and accuracy in finding information from all sources. Form : Non-test	Method : Case based learning Assignment: Reference product study Estimated time : 1x2x50'		1. Lee, Y. A. Leading Edge Technologies in Fashion Innovation. 2. Mukhopadhyay, P. (2022). Ergonomics in Fashion Design: A Laypersons' Approach. Springer Nature. 3. Rodgers, P., & Milton, A. (2011). Product design. Laurence King. 4. Postell, Jim. (2012). Designing Furniture, Second Edition, Willey, Canada. 5. Cross, N. (2011). Design thinking: Understanding how designers think and work. Berg	
9	Students are able to carry out reverse engineering and dissection to find out the specifications, configuration, mechanism and composition of existing product components of the product to be reviewed and rearranged according to the needs and results of the study and analysis as well as the results of the excavation with the user.	Students are able to measure and duplicate specifications related to geometric dimensions and patterns.	Criteria: Neatness, shape sensibility, system engineering and aesthetics Form : Non-test	Form: Studio practice Method : Case based learning Assignment: 3D duplication drawing Estimated time : 1x2x50'		Literature: 1. Lee, Y. A. Leading Edge Technologies in Fashion Innovation 2. Blackburn, R. (Ed.). (2015). Sustainable apparel: Production, processing and recycling. Woodhead Publishing. 3. Rodgers, P., & Milton, A. (2011). Product design. Laurence King.	10



						4. Postell, Jim. (2012). Designing Furniture, Second Edition, Willey, Canada	
10	Students are able to process ideas in visual form and model studies based on the basic principles of product design, ergonomics and material exploration following the needs (DRnO)	Sensitivity of form, aesthetics according to design concept.	Sense of form and aesthetics, precision.	Form: Studio practice Method : Case based learning Assignment: Determine 3 design alternatives and create a low fidelity model Estimated time: 2x2x50'		Literature: 1. Lee, Y. A. Leading Edge Technologies in Fashion Innovation. 2. Mukhopadhyay, P. (2022). Ergonomics in Fashion Design: A Laypersons' Approach. Springer Nature. 3. McAssey, J., Benson, S., & Buckley, C. (2022). Fashion Styling. Bloomsbury Publishing. 4. Rodgers, P., & Milton, A. (2011). Product design. Laurence King. 5. Postell, Jim. (2012). Designing Furniture, Second Edition, Willey, Canada. 6. Cross, N. (2011). Design thinking: Understanding how designers think and work. Berg 7. Eissen, K., & Steur, R. (2011). <i>Sketching: the basics; the prequel to</i>	



						<i>Sketching: drawing techniques for product designers. BIS: Amsterdam. OCLC, 756275344.</i>	
11	Students are able to evaluate and design refinement in the form of arranging component configurations based on user interface adjustments, ergonomics, operations and / or results from observations / interviews of user activity studies (micro and macro gestures).	Students are able to determine blocking areas, arrangement of control buttons, composition, features etc. for adjusting product dimensions, mounting, structure and shape	Criteria: Spatial accuracy, mastery, sensitivity and understanding Form : Non tes	Form: Studio practice Method : Case based learning Assignment: 3D blocking image Estimated time : 1x2x50'		Literature: 1. Lee, Y. A. Leading Edge Technologies in Fashion Innovation. 2. Mukhopadhyay, P. (2022). Ergonomics in Fashion Design: A Laypersons' Approach. Springer Nature. 3. Rodgers, P., & Milton, A. (2011). Product design. Laurence King. 4. Postell, Jim. (2012). Designing Furniture, Second Edition, Willey, Canada. 5. Cross, N. (2011). Design thinking: Understanding how designers think and work. Berg	5
12	Students are able to engineer a simple structural system of components and function connections based on the needs of the analysis and study results.	Students are able to rearrange, change patterns and integrate components	Criteria: Precision, mastery, spatial form sensitivity	Form: Studio practice Method : Case based learning		Literature: 1. Lee, Y. A. Leading Edge Technologies in Fashion Innovation. 2. Mukhopadhyay, P. (2022). Ergonomics in	5



		according to new forms, mechanisms and systems.	and aesthetics Form : Non tes	Assignment: Simulation 3D drawing Estimated time : 1x2x50'		Fashion Design: A Laypersons' Approach. Springer Nature. 3. Mia, M. M., & Yip, P. (Eds.). (2016). Bag Design: A Handbook for Accessories Designers. Fashionary. 4. Hayes, S. G., & Venkatraman, P. (Eds.). (2016). Materials and technology for sportswear and performance apparel (p. 370). Boca Raton, FL: CRC Press. 5. Rodgers, P., & Milton, A. (2011). Product design. Laurence King. 6. Postell, Jim. (2012). Designing Furniture, Second Edition, Willey, Canada. 7. Cross, N. (2011). Design thinking: Understanding how designers think and work. Berg	
13	Students are able to simulate designs using parametric 3D applications	Students are able to apply the results of placement,	Criteria: Accuracy, neatness, mastery	Form: Studio practice Method :		Literature: 1. Lee, Y. A. Leading Edge Technologies in Fashion Innovation.	5



		arrangement and integration in the form of 3-dimensional digital simulations in a more measurable manner.	Form : Non tes	Case based learning Assignment: Simulate 3D drawings and create technical drawings (view, cut, detail, pattern, outline) of the final design. Estimated time : 1x2x50'		2. Mukhopadhyay, P. (2022). Ergonomics in Fashion Design: A Laypersons' Approach. Springer Nature. 3. Mia, M. M., & Yip, P. (Eds.). (2016). Bag Design: A Handbook for Accessories Designers. Fashionary. 4. Hayes, S. G., & Venkatraman, P. (Eds.). (2016). Materials and technology for sportswear and performance apparel (p. 370). Boca Raton, FL: CRC Press. 5. Postell, Jim. (2012). Designing Furniture, Second Edition, Willey, Canada.	
14	Students are able to make model studies with substitute materials with similar material characteristics and easy finishing processes according to each case study and category (fashion-apparel-jewelry, appliances, furniture and transportation).	Students are able to realize a simple initial display to test stability, construction, dimensions related to the operation of	Criteria: Accuracy, mastery, sensitivity to form, aesthetics and empathy skills	Form: Studio practice Method : Case based learning Assignment: Interviews and usability testing		Literature: 1. Lee, Y. A. Leading Edge Technologies in Fashion Innovation. 2. Mukhopadhyay, P. (2022). Ergonomics in Fashion Design: A Laypersons' Approach. Springer Nature.	15



		fashion, apparel and jewelry products.	Form : Non tes	Estimated time : 1x2x50'		3. Mia, M. M., & Yip, P. (Eds.). (2016). Bag Design: A Handbook for Accessories Designers. Fashionary. 4. Hayes, S. G., & Venkatraman, P. (Eds.). (2016). Materials and technology for sportswear and performance apparel (p. 370). Boca Raton, FL: CRC Press.. 5. Ashby, M. F., & Johnson, K. (2013). <i>Materials and design: the art and science of material selection in product design</i>. Butterworth-Heinemann.	
15	Students are able to realize design concepts into prototypes / mockups with fulfilled functions and features	Students are able to present a final physical display that is representative, operational, durable and uses representative materials.	Criteria: Accuracy, mastery, sense of form and aesthetics Form : Non tes	Form: Studio practice Method : Case based learning Assignment: Document prototypes, create a portfolio of work and product etiquette Estimated time :		Final Collection & Presentation Attribute – Prototype, portfolio, and product etiquette Literature: 1. McAssey, J., Benson, S., & Buckley, C. (2022). Fashion Styling. Bloomsbury Publishing. 2. Postell, Jim. (2012). Designing Furniture,	15



				1x2x50'		Second Edition, Willey, Canada.	
16	End of Semester Evaluation / End of Semester Exam : 1. Students are able to display final product prototypes that can be operated 2. Students are able to make completeness for representative and communicative product presentations						100

**DP234521 DESIGN AND LIFESTYLE**

		SEPULUH NOPEMBER INSTITUTE OF TECHNOLOGY SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code	
SEMESTER LEARNING PLAN								
COURSE (MK)		CODE	MK CLUSTER	CREDIT (credit)		SEMESTER	Date of Compilation	
DESIGN AND LIFESTYLE		DP234521	Design and Human Factors Study	T=2	P=1	2	November 16, 2022	
AUTHORIZATION 		RPS Developer		RMK Coordinator		Head of Study Program		
		Eri Naharani Ustazah		Hertina Susandari, S.T., M.T.		Bambang Tristiyono, ST., M.Si		
Learning Outcomes (CP)		CPL-PRODI charged to MK						
		CPL-2	Able to study and utilize science and technology to apply it to the field of Product Design, and able to make appropriate decisions from the results of their own work or group work in the form of final project reports or forms of recordsing activities others whose output is equivalent to the final project through logical, critical, systematic and innovative thinking.					
		CPL-4	Able to understand and apply knowledge of theoretical concepts of product design, including basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, and market and business aspects.					
		CPL-5	Able to understand and apply knowledge, insight, and science related to product design, including design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural, economic and business, entrepreneurship, code of ethics and IPR.					
		Course Learning Outcomes (CPMK)						
		CPMK-1	Students understand lifestyle insights					
		CPMK-2	Students understand and study lifestyle as a representation of values and aspects in the development of innovation in design					
		CPMK-3	Students are able to identify lifestyle factors, lifestyle measurements into verbal and visual data to be used in the design process					
		CPMK-4	Students are able to transform lifestyle aspects in design concepts					



		<table><tr><td>CPL matrix – CPMK</td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK</td><td>CPL-2</td><td></td><td>CPL-4</td><td>CPL-5</td></tr><tr><td>CPMK-1</td><td>V</td><td></td><td>V</td><td></td></tr><tr><td>CPMK-2</td><td>V</td><td></td><td>V</td><td>V</td></tr><tr><td>CPMK-3</td><td>V</td><td></td><td>V</td><td>V</td></tr><tr><td>CPMK-4</td><td>V</td><td></td><td>V</td><td></td></tr><tr><td></td><td>V</td><td></td><td>V</td><td></td></tr></table>	CPL matrix – CPMK					CPMK	CPL-2		CPL-4	CPL-5	CPMK-1	V		V		CPMK-2	V		V	V	CPMK-3	V		V	V	CPMK-4	V		V			V		V	
CPL matrix – CPMK																																					
CPMK	CPL-2		CPL-4	CPL-5																																	
CPMK-1	V		V																																		
CPMK-2	V		V	V																																	
CPMK-3	V		V	V																																	
CPMK-4	V		V																																		
	V		V																																		
Brief Description MK	Courses that contain analysis of lifestyle developments and issues of the latest product trends. Learn problem-solving methods, see market opportunities and sort and select design concepts according to cultural points of view and lifestyle as cultural elements																																				
Study Material: Learning Material	· Terminology, phenomena, factors, indicators and forms of lifestyle · Lifestyle elements and majors (health, environment, technology, social) · Product image (products that emphasize lifestyle values and products that emphasize function values) · Lifestyle as a representation of value in the development of product innovation · Taste culture and Grid-Group Theory · lifestyle issues and their relation to design (e.g. role of automation etc) · Ideation methods based on lifestyle aspects · Method of analysis of lifestyle aspects in the design process · Identify factors, lifestyle indicators and display in verbal and visual data. Case study based · User persona canvas, value preposition canvas . Case study based · Lifestyle data/information transformation methods in design concepts · Methods of value transformation in the features of design innovation · Methods of transforming values in design elements																																				
Book	Main:																																				
	- Berger, A.A. (2014), <i>What Objects Mean : An Introduction to Material Culture</i>, Routledge, New York - Chaney, David. (2011), <i>Lifestyle—A Comprehensive Introduction</i>. Yogyakarta, Jalasutra . - Lonsway, Brian. (2013), <i>Making Leisure Work, Architecture and Experience Economy</i>, Taylor & Francis. - Osterwalder, Alexander (2015), <i>Value Proposition Desig How to Create Products and Services Customers Want</i>, Wiley																																				



		- Zöllern, Susan. (2019). Mapping Individual Subjective Values to Product Design An Attitudes-Based Approach for User Centered Design, Erlangen FAU University Press					
		Supporter:					
		- Brown, Tim. (2010). Change by Design, HarperCollins - Garner, S., & McDonagh-Philp, D. (2001). Problem Interpretation and Resolution via Visual Stimuli: The Use of "Mood Boards" in Design Education. International Journal of Art Design Education, 20(1), 57-64. DOI:10.1111/1468-5949.00250					
Lecturer		Eri Naharani Ustazah					
Subject requirements		None					
Mg To-	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assessment Weight (%)
		Indicators	Criteria & Forms	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students get to know the scope, rules and plans of Design and Lifestyle courses	Students remember the scope, rules and plans of Design and Lifestyle courses	Students can mention the scope, rules and plans of the Design and Lifestyle course	Lectures, responses and discussions.150 minutes		Berger, A.A. (2014) Chaney, David. (2011)	0
2	Students understand lifestyle insights	Students can remember and understand terminology, phenomena, factors, indicators and forms of lifestyle	Students can rewrite and give case examples of phenomena, factors, indicators and forms of lifestyle	Lectures, responses and discussions.150 minutes		Berger, A.A. (2014) Chaney, David. (2011)	5
3	Students understand lifestyle insights	Students can remember and understand the elements and major lifestyles	Students can rewrite and provide examples of product design concepts related to elements and major lifestyles (health, environment, technology, social)	Lectures, responses, discussions. Look for examples of design concepts. 150 minutes		Berger, A.A. (2014) Chaney, David. (2011) Lonsway, Brian. (2013)	5



4	Students understand lifestyle insights	Students can remember and understand how to identify product imagery	Students can understand and identify in case examples product design concepts related to product image, namely products that emphasize lifestyle values and products that emphasize function values	Lectures, responses, discussions. Look for case examples and identify design concepts that relate to product image. 150 minutes		Berger, A.A. (2014) Chaney, David. (2011) Lonsway, Brian. (2013)	5
5	Students understand and study lifestyle as a representation of values and aspects in the development of innovation in design	Students know aspects of lifestyle as a representation of value in the development of product innovation	Students are able to understand and look for case examples of design concepts that represent lifestyle values in the development of product innovation	Lectures, responses, discussions. Looking for case examples of design concepts that represent lifestyle values in the development of product innovations. 150 minutes		Berger, A.A. (2014) Chaney, David. (2011) Brian. (2013)	5
6	Students understand and study lifestyle as a representation of values and aspects in the development of innovation in design	Students are able to understand taste culture and Grid-Group Theory	Students are able to explain taste culture and Grid-Group Theory	Lectures, responses, discussions. 50 minutes		Berger, A.A. (2014) Chaney, David. (2011)	5
7	Students understand and study lifestyle as a representation of values and aspects in the development of innovation in design	Students know and understand lifestyle issues and their relationship to design (a.l. role of automation etc)	Students are able to explain and provide examples of lifestyle issues and their relationship to design	Lectures, responses, discussions. Looking for examples of product concepts and their relationship with lifestyle issues 150 minutes		Berger, A.A. (2014) Chaney, David. (2011) Brian. (2013)	5
8	Students are able to identify lifestyle factors, lifestyle measurements	Students understand and apply ideation methods based on lifestyle aspects	Students understand and apply the steps of the ideation method based on	Lectures, responses, discussions. Choose a task theme.		Berger, A.A. (2014)	5



	into verbal and visual data to be used in the design process		lifestyle aspects on the chosen theme.	150 minutes		Chaney, David. (2011) Lonsway, Brian. (2013)	
9	Midterm Evaluation / Midterm Exam						10
10	Students are able to identify lifestyle factors, lifestyle measurements into verbal and visual data to be used in the design process	Students understand and apply methods of analyzing lifestyle aspects in the design process	Students are able to apply the steps of the lifestyle aspect analysis method in the design process	Lectures, responses, discussions. Apply the ideation process steps and analyze aspects of lifestyle. 150 minutes		Brown, Tim. (2010)	5
11	Students are able to identify lifestyle factors, lifestyle measurements into verbal and visual data to be used in the design process	Students are able to identify factors, lifestyle indicators and display in verbal and visual data. Study case based	Students take steps to identify factors, lifestyle indicators and display in verbal and visual data. Study Case Based	Lectures, responses, discussions. Apply factor identification steps , lifestyle indicators and display in verbal and visual data 150 minutes		Brown, Tim. (2010)	5
12	Students are able to identify lifestyle factors, lifestyle measurements into verbal and visual data to be used in the design process	Students understand the method of creating a user persona canvas, value preposition canvas. Study case based	Students create a user persona canvas, value preposition canvas. Study case based	Lectures, responses, discussions. Create a user persona canvas, value preposition canvas. 150 minutes		Brown, Tim. (2010) Osterwalder, Alexander (2015) Zöller, Susan. (2019).	5
13	Students are able to transform lifestyle aspects in design concepts	Students understand the method of transforming lifestyle data/information	Students are able to map the transformation of lifestyle data / information in design concepts. Study case based	Lectures, responses, discussions. Create mapping on transformation of lifestyle		Brown, Tim. (2010)	10



		in design concepts. Study case based		data/information in a design concept .150 minutes		Osterwalder, Alexander (2015) Zöllerm, Susan. (2019).	
14	Students are able to transform lifestyle aspects in design concepts	Able to understand the method of value transformation in the features of design innovation	Students are able to map the transformation of values in the features of design innovation. Study case based	Lectures, responses, discussions. Create a mapping on value transformation in design innovation features. 150 minutes		Osterwalder, Alexander (2015) Zöllerm, Susan. (2019).	10
15	Students are able to transform lifestyle aspects in design concepts	Students are able to understand the method of value transformation in design elements	Students are able to map the transformation of values in design elements. Study case based	Lectures, responses, discussions. Create a mapping on value transformations in design elements. 150 minutes		Brown, Tim. (2010) Zöllerm, Susan. (2019). Garner, S., & McDonagh-Philp, D. (2001)	10
16	End of Semester Evaluation / End of Semester Exam						10



DP234522 PRESENTATION TECHNIQUES

		SEPULUH NOPEMBER INSTITUTE OF TECHNOLOGY SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code		
SEMESTER LEARNING PLAN									
COURSE (MK)		CODE		MK CLUSTER		CREDIT (credit)		SEMESTER	Date of Compilation
PRESENTATION TECHNIQUES		DP234522		Product Design and Business Management		T=1 P=2		3	November 17, 2022
AUTHORIZATION		RPS Developer		RMK Coordinator		Head of Study Program			
		Irna Arlianti, S.T., M.Ds.		Arie Kurniawan, S.T, M.Ds		Bambang Tristiyono, S.T., M.Si			
Learning Outcomes (CP)		CPL-PRODI charged to MK							
		CPL-1	Able to show attitudes and characters that reflect: piety to God Almighty, ethics and integrity, noble ethics, sensitivity and care for social and environmental problems, respect cultural differences and pluralism, uphold law enforcement prioritizing the interests of the nation and the wider community, through creativity and innovation, excellence, strong leadership, synergy, and other potentials possessed to achieve maximum results.						
		CPL-3	Able to manage self-learning, and develop themselves as lifelong learners to compete at national, and international levels, in order to make a real contribution to solving problems by implementing information and communication technology and paying attention to sustainability principles and understanding technology-based entrepreneurship.						
		CPL-4	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.						
		CPL-8	Able and skilled in using design process aids that include: manual or digital equipment according to technology and the times.						
		CPL-9	Able to present ideation design concepts through verbal communication, visual media, and prototypes (Models / mock-ups / prototypes) using various relevant technologies.						
		Course Learning Outcomes (CPMK)							



	CPMK-1	Students are able to understand communication theory, verbal and visual presentation (C2, A2, P2)																																							
	CPMK-2	Students are able to explain comprehensively the basic, verbal and visual communication criteria for design conceptualization needs (C2, A2, P2)																																							
	CPMK-3	Students are able to compile ideas and / or design concepts in the form of verbal and visual communication (C3, A3, P2)																																							
	CPMK-4	Students are able to apply verbal and visual presentation skills using relevant technology in the form of presentation simulations (C3, A3, P3)																																							
	CPMK-5	Students are able to design visual media based on design projects and branding designs (C4, A4, P4)																																							
		CPL matrix – CPMK <table><tr><td>CPMK</td><td>CPL-1</td><td>CPL-3</td><td>CPL-4</td><td>CPL-8</td><td>CPL-9</td></tr><tr><td>CPMK-1</td><td>V</td><td></td><td>V</td><td></td><td></td></tr><tr><td>CPMK-2</td><td>V</td><td>V</td><td></td><td></td><td></td></tr><tr><td>CPMK-3</td><td>V</td><td>V</td><td>V</td><td>V</td><td></td></tr><tr><td>CPMK-4</td><td>V</td><td>V</td><td></td><td></td><td>V</td></tr><tr><td>CPMK-5</td><td>V</td><td>V</td><td></td><td></td><td>V</td></tr></table>					CPMK	CPL-1	CPL-3	CPL-4	CPL-8	CPL-9	CPMK-1	V		V			CPMK-2	V	V				CPMK-3	V	V	V	V		CPMK-4	V	V			V	CPMK-5	V	V		
CPMK	CPL-1	CPL-3	CPL-4	CPL-8	CPL-9																																				
CPMK-1	V		V																																						
CPMK-2	V	V																																							
CPMK-3	V	V	V	V																																					
CPMK-4	V	V			V																																				
CPMK-5	V	V			V																																				
Brief Description MK	Courses that study effective techniques in communicating both written, verbal (presentation) and visual include creative communication techniques and simulation of professional conditions of the product design profession																																								
Study Material: Learning Material	1. Short presentation 2. Visual presentation 3. Long presentation 4. Video presentation																																								
Book	Main:																																								
	1. Mulyana, D. (2009). <i>Communication Studies</i> . Bandung: PT. Teen Rosdakarya 2. Ledden, E. (2017). <i>The Presentation Book</i> . London: Pearson 3. Firmansyah, D. (2021). <i>Pecha Kucha Presentation Part 1</i> . Sidoarjo: Presentation Creation 4. Eissen, Koos & Roselien S. (2014). <i>Sketching Product Design Presentation</i> . Amsterdam:BIS Publisher 5. Reynolds, G. (2013). <i>Presentation zen design: Simple design principles and techniques to enhance your presentations</i> . New Riders.																																								



	Supporter:
	1. Lawson, B. (2012). <i>How Designers Think</i> . London: The Architectural Press Ltd 2. Lidwell, William, Kritina H & Jill B. (2003). <i>Universal Principles of Design- 100 Ways to Enhance Usability, Influence Perception, Increase Appeal, Make Better Design Decisions, and Teach through Design</i> . Massachusetts: Rockport Publishers
Lecturer	Irna Arlianti, S.T, M.Ds
Subject requirements	-

Mg To-	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assessment Weight (%)
		Indicators	Criteria & Forms	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students are able to explain comprehensively the basic, verbal and visual communication criteria for design conceptualization needs (C2, A2, P2)	Accuracy of identifying the structure of the presentation of pecha kucha, types of presentation methods based on needs	Criterion: Accuracy and insight Shape: Non test	Shape: Lecture Seminar Method: • Self-directed learning Assignment: Verbally describe "Who he is and his value in ITS product design"		Introduction to presentation theory (pecha kucha, zen, ted talks, design presentation) ; Discussion & review of pecha kucha Book: 1. Mulyana, D. (2009). <i>Communication Studies</i> . Bandung: PT. Teen Rosdakarya 2. Ledden, E. (2017). <i>The Presentation Book</i> . London: Pearson	5



				Estimated time : 1x2x50'			
2	Students are able to compile ideas and / or design concepts in the form of verbal and visual communication (C3, A3, P2)	Accuracy in compiling presentation content according to the structure of the pecha kucha presentation	Criterion: Accuracy and mastery Shape: Non test	Shape: Lecture Response Method: Case based learning Assignment: Drafting Pecha Kucha Presentations by Topic Estimated time : 1x2x50'		Short presentation – "Pecha kucha 20x20 presentation tips" Book: Firmansyah, D. (2021). <i>Pecha Kucha Presentation Part 1</i> . Sidoarjo: Presentation Creation	5
3, 4	Students are able to apply verbal and visual presentation skills using relevant technology in the form of presentation simulations (C3, A3, P3)	Accuracy and creativity of presentation delivery in pecha kucha	Criterion: Accuracy and mastery Shape: Non test	Shape: Seminar Method: Role-play & simulation Assignment: Presenting material with pecha kucha techniques by topic Estimated time : 2x2x50'		Short presentation - Turn-based presentation (pecha kucha)	15



5	Students are able to understand communication theory, verbal and visual presentation (C2, A2, P2)	Accuracy of identifying scientific and popular poster structures	Criterion: Accuracy and mastery Shape: Non test	Shape: Lecture Discussion Method: Case based learning Assignment: make designs / drafts of visual presentations in the form of scientific posters (topics of design works that have been made) and popular posters (topics of design works / personal works) Estimated time : 1x2x50'		Visual presentation – "Application of communication theory, verbal presentation, gestalt, visual ergonomics to scientific posters and ads" Book: 1. Mulyana, D. (2009). <i>Communication Studies</i> . Bandung: PT. Teen Rosdakarya 2. Ledden, E. (2017). <i>The Presentation Book</i> . London: Pearson 3. Eissen, Koos & Roselien S. (2014). <i>Sketching Product Design Presentation</i> . Amsterdam: BIS Publisher	10
6	Students are able to compile ideas and / or design concepts in the form of verbal and visual communication (C3, A3, P2)	Clarity of information, ease of reading posters and creativity in designing content	Criterion: Precision, mastery, creativity Shape: Non test	Shape: Seminar Method: Case based learning Assignment: Presenting scientific posters and popular		Visual presentation – "Making scientific and popular poster designs"	15



				posters that have been created			
				Estimated time : 1x2x50'			
7	Students are able to compile ideas and / or design concepts in the form of verbal and visual communication (C3, A3, P2)	Accuracy of expressing opinions about the structure of the Final Project presentation	Criterion: Accuracy and mastery Shape: Non test	Shape: Lecture Discussion Method: Case based learning Assignment: Make a presentation draft from the title of the design that has been done adjusted to the systematics of the Final Project presentation slides Estimated time : 1x2x50'		Long presentation – "Good presentation slides" Long presentation slide creation brief (tips on presentation tips with slides, benefits of bridging, presenting conclusions at the end of slides, etc.) Book: 1. Reynolds, G. (2013). <i>Presentation zen design: Simple design principles and techniques to enhance your presentations</i> . New Riders. 2. Lawson, B. (2012). <i>How Designers Think</i> . London: The Architectural Press Ltd 3. Lidwell, William, Kritina H & Jill B. (2003). <i>Universal Principles of Design- 100 Ways to Enhance Usability</i> ,	5



						<i>Influence Perception, Increase Appeal, Make Better Design Decisions, and Teach through Design. Massachusetts: Rockport Publishers</i>	
8-10	Students are able to apply verbal and visual presentation skills using relevant technology in the form of presentation simulations (C3, A3, P3)	Accuracy in delivering presentation content verbally and bridging creativity	Criterion: Accuracy and mastery Shape: Non test	Shape: Seminar Method: Role-play simulation Estimated time : 3x2x50'		Long presentation – "Simulated presentation of the final project of product design with slides that have been made" Book: 1. Mulyana, D. (2009). <i>Communication Studies</i> . Bandung: PT. Teen Rosdakarya 2. Ledden, E. (2017). <i>The Presentation Book</i> . London: Pearson 3. Reynolds, G. (2013). <i>Presentation zen design: Simple design principles and techniques to enhance your presentations</i> . New Riders.	20
11	Students are able to compile ideas and / or design concepts in the form of verbal and visual communication (C3, A3, P2)	Accuracy of expressing opinions about examples of	Criterion: Accuracy and mastery	Shape: Lecture Discussion		Video presentation – "Sample video presentation of final project and branding design"	5



		promotional videos / branding designs	Shape: Non test	Method: Case based learning Assignment: Make a draft video presentation of the final project (video 1) and presentation about the world of product design (video 2) Estimated time : 1x2x50'		Book: 3. Mulyana, D. (2009). <i>Communication Studies</i> . Bandung: PT. Teen Rosdakarya 4. Lawson, B. (2012). <i>How Designers Think</i> . London: The Architectural Press Ltd 5. Lidwell, William, Kritina H & Jill B. (2003). <i>Universal Principles of Design- 100 Ways to Enhance Usability, Influence Perception, Increase Appeal, Make Better Design Decisions, and Teach through Design</i> . Massachusetts: Rockport Publishers	
12, 13	Students are able to design visual media based on design projects and branding designs (C4, A4, P4)	Accuracy in making concept designs, video presentations, final project presentations, and presentations	Criterion: Precision, mastery, creativity Shape: Non test	Shape: Response Method: Case based learning Assignment: Make a draft video presentation of the final project (video 1)		Video presentation – "The progress of the video design (in the form of footage; storyboard)" Book: 1. Mulyana, D. (2009). <i>Communication Studies</i> . Bandung: PT. Teen Rosdakarya	10



		of the world of product design		and presentation about the world of product design (video 2) Estimated time : 2x2x50'		2. Lawson, B. (2012). <i>How Designers Think</i> . London: The Architectural Press Ltd 3. Lidwell, William, Kritina H & Jill B. (2003). <i>Universal Principles of Design- 100 Ways to Enhance Usability, Influence Perception, Increase Appeal, Make Better Design Decisions, and Teach through Design</i> . Massachusetts: Rockport Publishers	
14, 15	Students are able to apply verbal and visual presentation skills using relevant technology in the form of presentation simulations (C3, A3, P3)	Accuracy in packaging informative and innovative presentation video content	Criterion: Precision, mastery, creativity Shape: Non test	Shape: Seminar Method: Self-directed learning Estimated time : 2x2x50'		Video presentation – Video playback and scoring	10
16	End of Semester Evaluation / End of Semester Exam						100



DP234523 CAM

**SEPULUH NOPEMBER INSTITUTE OF TECHNOLOGY SURABAYA,
FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS,
INDUSTRIAL DESIGN PROGRAM**

Document Code

SEMESTER LEARNING PLAN

COURSE (MK)		CODE	MK CLUSTER	CREDIT (credit)		SEMESTER	Date of Compilation
Computer-Aided Manufacturing		DP234523	Product Design Technology	T=1	P=4	5	December 12, 2022
AUTHORIZATION 		RPS Developer		RMK Coordinator		Head of Study Program	
		Ari Dwi Krisbianto		Djoko Kuswanto, ST., M.Biotech		Bambang Tristiyono, ST., M.Si	
Learning Outcomes (CP)	CPL-PRODI charged to MK						
	CPL-2	Able to study and utilize science and technology in order to apply it to the field of Product Design, and able to make appropriate decisions from the results of their own work or group work in the form of final project reports or other forms of learning activities whose output is equivalent to the final project through logical, critical, systematic and innovative thinking.					
	CPL-4	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.					
	CPL-6	Able to design products and systems with consideration of all aspects that influence them, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.					
	CPL-8	Able and skilled in using design process aids that include: manual or digital equipment according to technology and the times.					
	Course Learning Outcomes (CPMK)						
	CPMK-1	Students are able to understand the process of making parts with additive and subtractive methods					
	CPMK-2	Students are able to understand the application interface.					
	CPMK-3	Students are able to determine the right type of material, tools and methods in making parts.					



	CPMK-4	Students are able to make planning strategies for assembly mechanisms.				
	CPMK-5	Students are able to create programs for 3D Printing machines and CNC Routers.				
	CPMK-6	Students are able to operate 3d Printing machines and CNC Routers				
		CPL matrix – CPMK				
		CPMK	CPL-2	CPL-4	CPL-6	CPL-8
		CPMK-1	V			
		CPMK-2		V		
		CPMK-3		V		
		CPMK-4			V	
		CPMK-5				V
		CPMK-6				V
Brief Description MK	Courses that study and operate manufacturing processes using subtractive and additive methods automatically					
Study Material: Learning Material	<i>CNC course introduction (Protomodel Lab)</i> <i>CNC workflow and software installation</i> <i>The basic logic of the manufacturing process: 3D drawings and Gcode</i> <i>The concept of CNC operation with waterline cutting techniques and implementing it in the manufacture of a product</i> <i>Cut using GCode from created geometry. Able to operate CNC machines, put materials on the work plane and run them</i> <i>Continueing cutting practice: Product 3D Geometry Assignment tasks</i> <i>CNC 3 axis Geometry cutting depth rule. Task: GCode product geometry meshcam</i> <i>Completion of CNC final project including design, material selection, software operation, material laying, cutting, simple moulding and final presentation</i> <i>3D printing Introduction (iDiG Laboratory)</i> <i>Brainstorming product ideas based on 3D merchandise</i> <i>Idea Detailing &; 3D Modeling</i> <i>Printing test</i> <i>Independent project progress 1</i> <i>Independent project progress 2</i> <i>Project Progress Assistance</i> <i>Portfolio Instruction and Briefing</i>					



Book		Main:					
		· Bi, Z., &; Wang, X. (2020). <i>Computer aided design and manufacturing</i>. John Wiley & Sons. · Leondes, C. T. (2000). <i>Computer-Aided Design, Engineering, and Manufacturing: Systems Techniques and Applications, Volume III, Operational Methods in Computer-Aided Design</i>. CRC Press.					
		Supporter:					
Lecturer		Andhika Estiyono, Djoko Kuswanto, Ari Dwi Krisbianto, MY Alief Samboro, Audit Yulardi, A Rieskha Harseno					
Subject requirements		CAD					
Mg To-	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assesment Weight (%)
		Indicators	Criteria & Forms	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students know the planning of the CNC operation process	Students can mention process planning	Students can mention all processes starting from the design process, geometry evaluation, g-coding, loading g-code, mesh cam operation and material setting and cutting Form: Discussion	Lectures, responses and discussions.150 minutes		Bi, Z., &; Wang, X. (2020) Leondes, C. T. (2000)	0
2	Students know the logic of simple manufacturing	Students can apply the theory of tolerance and	Students can apply it to geometry by setting gap differences for component installation and	Lectures, responses and discussions.150 minutes		Bi, Z., &; Wang, X. (2020)	5



		cut thickness of materials to strength	remaining pieces that are quite constructive			Leondes, C. T. (2000)	
3	Students know production planning	Students remember zero point selection rules, material sets, tolerances and cutting sequences	Students can put zero points according to the availability of materials and the direction of work of CNC machines	Lectures, responses and discussions.150 minutes		Bi, Z., & Wang, X. (2020) Leondes, C. T. (2000)	5
4	Students are able to make designs according to CNC machine operations	Students can design and formulate efficient geometric shapes	Students are able to make geometry according to tolerances that can be done by machines and the dimensions of the tools installed by adjusting according to material properties. Know which parts must be cut first.	Lectures, responses, discussions. Practice creating geometry of 3D shapes.150 minutes		Bi, Z., & Wang, X. (2020) Leondes, C. T. (2000)	5
5	Students know the character of the material to be cut	Students are able to understand the character of the material departing with standard numbers to determine numbers for rotational speed, sliding distance, depth of the level down to the pressure considering the hardness of the material and tool dimensions	Students can adjust the input numbers of spindle rotation, step over and step down for similar materials and tools used. Can be through adjustment on the analog tuner of the CNC machine controller.	Lectures, responses, discussions. Material introduction.150 minutes		Bi, Z., & Wang, X. (2020) Leondes, C. T. (2000)	5
6	Students are able to program to produce G-Code	Students can apply the provisions for spindle speed input, step over, step down in the application	Students can apply the input number range of spindle rotation, step over and step down for similar materials and tools used	Lectures, responses, discussions. Practice creating g-code.150 min		Bi, Z., & Wang, X. (2020) Leondes, C. T. (2000)	5



7	Students are able to process finishing and final results	Students can apply the finishing process and resin molding process for mass production	Students are able to understand the sequence of print preparation both containers (resin, catalyst, brush, tinner, wax, pva) and are able to make molds to finished goods	Lectures, responses, discussions. Practice creating waterline shapes and 3D engraving.150 minutes		Bi, Z., & Wang, X. (2020) Leondes, C. T. (2000)	5
8	Midterm Evaluation / Midterm Exam						8
9	Students know the planning of the 3D Printing operation process	Students understand the sequence of 3D printing operation processes.	Students are able to mention the sequence of processes starting from geometry drawing, slicing process, supporting, data transferring, operate	Lectures, responses and discussions.150 minutes		Bi, Z., & Wang, X. (2020) Leondes, C. T. (2000)	7
10	Students understand the idea of 3D printing-based shapes	Students can plan shapes, volumes and dimensions based on the running time range of the printing process	Students are able to create shapes with a time limit of no more than the specified time.	Lectures, responses, discussions. Explore shapes and geometry.150 minutes		Bi, Z., & Wang, X. (2020) Leondes, C. T. (2000)	7
11	Students are able to apply 3D details	Students can explore detailed forms that are still facilitated by machines with the least limit capabilities.	Students are able to make shapes with maximum detail, clear and neat	Lectures, responses, discussions. Conduct material exploration and practice making shape compositions.150 minutes		Bi, Z., & Wang, X. (2020) Leondes, C. T. (2000)	8
12	Students are able to create 3D geometry	Students can explore constructive and attractive forms	Students are able to create structure-safe and attractive form and shape compositions	Lectures, responses, discussions. Conduct exploration of materials and forms.		Bi, Z., & Wang, X. (2020) Leondes, C. T. (2000)	8
13	Students are able to process geometry in slicer applications	Students can do the slicing process	Students are able to adjust density, thickness and support	Lectures, responses, discussions.		Bi, Z., & Wang, X. (2020) Leondes, C. T. (2000)	8



				Conduct material exploration and slicing practices in slicer applications.150 minutes			
14	Students are able to transfer the results of the slicer application on a 3D printer machine	Students can make adjustments to the slicing results on CNC machine drivers	Students are able to enter and set slicer result files on 3D printer machines	Lectures, responses, discussions. Practice transfer by NC or by computer.150 minutes		Bi, Z., & Wang, X. (2020) Leondes, C. T. (2000)	8
15	Students are able to print 3D Print	Students can run CNC machine operations	Students are able to create shapes using a 3D printer machine	Lectures, responses, discussions. Practice making 3D printing shapes.150 minutes		Bi, Z., & Wang, X. (2020) Leondes, C. T. (2000)	8
16	End of Semester Evaluation / End of Semester Exam						8

**DP234524 PRODUCT DESIGN STUDIO 3**

		SEPULUH NOPEMBER INSTITUTE OF TECHNOLOGY SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code
SEMESTER LEARNING PLAN							
COURSE (MK)		CODE	MK CLUSTER	CREDIT (credit)		SEMESTER	Date of Compilatio n
PRODUCT DESIGN STUDIO 3		DP234524	Product Design	T=2	P=4	5	January 17, 2023
AUTHORIZATION 		RPS Developer		RMK Coordinator		Head of Study Program	
		Hertina Susandari Bambang Tristiyono Ellya Zulaikha Andhika Estiyono		Ari Dwi Krisbianto, S.T., M.Ds.		Bambang Tristiyono, ST., M.Si	
Learning Outcomes (CP)	CPL-PRODI charged to MK						
	CPL-4	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.					
	CPL-5	Able to understand and apply knowledge, insight and science related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural, economic and business, entrepreneurship, code of ethics					
	CPL-6	Able to design products and systems with consideration of all aspects that influence them, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors,					
	CPL-7	Able to research problems, formulate and publish design needs and solutions for the present or future using relevant design and research methodologies.					
	CPL-8	Able and skilled in using design process aids that include: manual or digital equipment according to technology and the times.					



	CPL-9	Able to present ideation design concepts through verbal communication, visual media, and prototypes (Models / mock-ups / prototypes) using various relevant technologies.																																								
	Course Learning Outcomes (CPMK)																																									
	CPMK-1	Students are able to compile design concepts by identifying problems, analyzing and synthesizing needs using consideration of aesthetic aspects, functions, ergonomics, manufacturing, system engineering and technology.																																								
	CPMK-2	Students are able to evaluate alternative design solutions, test users, and perfect solutions by considering aspects of manufacturing, efficiency and production effectiveness.																																								
	CPMK-3	Able to create models / mock-ups / prototypes that are representative of shapes, colors, textures and functions / mechanisms using relevant technology.																																								
	CPMK-4	Students are able to present data, design research analysis and design results visually in a design portfolio and work drawings using both print and digital media (using multimedia)																																								
		CPL matrix – CPMK <table><tr><td>CPMK</td><td>CPL-4</td><td>CPL-5</td><td>CPL - 6</td><td>CPL-7</td><td>CPL-8</td><td>CPL - 9</td></tr><tr><td>CPMK-1</td><td>V</td><td>V</td><td>V</td><td>V</td><td></td><td></td></tr><tr><td>CPMK-2</td><td>V</td><td>V</td><td>V</td><td>V</td><td></td><td></td></tr><tr><td>CPMK-3</td><td></td><td></td><td></td><td></td><td>V</td><td>V</td></tr><tr><td>CPMK-4</td><td></td><td></td><td></td><td></td><td>V</td><td>V</td></tr></table>						CPMK	CPL-4	CPL-5	CPL - 6	CPL-7	CPL-8	CPL - 9	CPMK-1	V	V	V	V			CPMK-2	V	V	V	V			CPMK-3					V	V	CPMK-4					V	V
CPMK	CPL-4	CPL-5	CPL - 6	CPL-7	CPL-8	CPL - 9																																				
CPMK-1	V	V	V	V																																						
CPMK-2	V	V	V	V																																						
CPMK-3					V	V																																				
CPMK-4					V	V																																				
Brief Description MK	Product design courses that consider aspects of technology, system engineering, materials and processes, ergonomics, aesthetics and function. The scope of design includes: material experiments on apparel / jewelry products, simple manufacturing / mechatronics-based appliances products, furniture / work stations in public facilities, personal transportation modes with given platforms, and other equivalent products.																																									
Study Material: Learning Material	Study Material : 1. Empathy (exploring problems: observation, interviews, etc.) 2. Define (knowing needs and problems: CJM, needs studies, personas, etc.) 3. Ideation (exploration of ideas with considerations: ergonomics, systems engineering, materials and processes, technology, aesthetics, and function) 4. Prototype (create DR&O, choose solution: low fidelity prototyping, mid fidelity prototyping, high fidelity prototyping) 5. Testing (user testing, usability testing, etc.) 6. Review of design methods: Design Driven Material Innovation (DDMI), etc. 7. Review of scientific writing: Preparing a design report 8. Document visualization & presentation design																																									



Book	Main:		- Collins, Hillary, 2019, Creative Research - The Theory and Practice of Research for the Creative Industries - Lawson, Bryan.2012. How Designers Think, London: The Architectural Press Ltd - Martin, Bella dan Hannington, Bruce, 2019, Universal Methods of Design (Expanded and Revised Version) - Baxter, Mike, 2000, Product Design				
	Supporter:		- Cross, N. (2011). <i>Design thinking: Understanding how designers think and work</i>. Berg. - Tilley, A. R. (2001). <i>The measure of man and woman: human factors in design</i>. John Wiley & Sons. - Ashby, M.F., & Johnson, K. (2013).<i>Material and Design : The Art and Science of Material Selection in Product Design</i>. Elsevier - Lidwell, William, Kritina Holden, Jill Butler. 2003. Universal Principles of Design. Massachusetts: Rockport Publishers, Inc. - Kurniawan, Arie. 2018. Peek &; Seek: System Design. Surabaya : Despro ITS - Bambang Tristiyono., Guidebook: Preparation of Final Project Report of Product Design Study Program, Sepuluh Nopember Institute of Technology Surabaya, 2020. - O'Grady, J. V., & O'Grady, K. V. (2017). A Designer's Research Manual, Updated and Expanded: Succeed in Design by Knowing Your Clients and Understanding what They Really Need. Rockport				
	Lecturer		Bambang Tristiono				
	Subject requirements		None				
Mg To-	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assessme nt Weight (%)
		Indicators	Criteria & Forms	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1,2	Students get to know the scope, rules and plans of	Students remember the scope, rules and	Criterion: Accuracy Accuracy	Shape: Studio Lectures Response		Collins, Hillary, 2019,	5.4%



	Product Design Lectures 3 Students are able to describe the results of empathy related to the phenomenon that is the background of the design	plans of the Product Design course 3 Students are able to describe the results of empathy related to phenomena that are the background of good design	Shape: Non test Case Based Project	Time: 4x6x50 = 1200 minutes		- Lawson, Bryan.2012 - Martin, Bella and Hannington, Bruce, 2019 - Baxter, Mike, 2000,	
3	Students are able to understand user problems and needs	- Students can create persona boards appropriately - Students can make CJM properly and correctly - Students are able to determine the main problems and needs to be solved	Criterion: Accuracy Accuracy Creativeness Shape: Non test Case Based Project	Shape: Studio Lectures Response Time: 2x6x50 = 600 minutes		- Collins, Hillary, 2019, - Lawson, Bryan.2012 - Martin, Bella and Hannington, Bruce, 2019 - Baxter, Mike, 2000,	2.7%
4	- Students are able to choose and apply design methods that are in accordance with the product of specialization - Students can compile problem statements, problem limits / scope of design in a design report	- Students are able to choose and apply design methods that are in accordance with the product of specialization appropriately. - Students can compile problem statements, problem limits/scope of design in a design report correctly and adequately	Criterion: Accuracy Accuracy Businesslike Shape: Non test Assignment	Shape: Studio Lectures Response Time: 1x6x50 = 300 minutes	Shape: Studio Lectures Response Time: 1x6x50 = 300 minutes	- Collins, Hillary, 2019, - Lawson, Bryan.2012 - Martin, Bella and Hannington, Bruce, 2019 - Baxter, Mike, 2000,	2.7%



5,6	Students can make initial studies and analyses as the product of specialization.	Students can make initial studies and analyses of the specialization product correctly and adequately.	Criterion: Accuracy Accuracy Study acumen Creativeness Shape: Non test Case-Based Project	Shape: Studio Lectures Response Time: 4x6x50 = 1200 minutes		• Collins, Hillary, 2019, • Lawson, Bryan.2012 • Martin, Bella and Hannington, Bruce, 2019 • Baxter, Mike, 2000,	5.4%
7	Students are able to make Conceptual Design as well as present the results of initial research related to conceptual design	Students can make initial studies and analyses in accordance with the specialization product comprehensively	Criterion: Accuracy Creativeness Novelty Mastery Shape: Non test (Presentation) Case Based Project	Shape: Studio Lectures Response Time: 2x6x50 = 600 minutes		• Collins, Hillary, 2019, • Lawson, Bryan.2012 • Martin, Bella and Hannington, Bruce, 2019 • Baxter, Mike, 2000,	2.7%
8	Students are able to produce visualization of ideas in the preliminary design stage	Students are able to produce visualization of ideas in the preliminary design stage well with a minimum number of 40 alternatives	Criterion: Creativeness Novelty Quantity Shape: Non test	Shape: Studio Lectures Response Time:	Shape: Studio Lectures Response Time:	• Collins, Hillary, 2019, • Lawson, Bryan.2012 • Martin, Bella and Hannington, Bruce, 2019	2.7%



			Case Based Project	1x6x50 = 300 minutes	1x6x50 = 300 minutes	• Baxter, Mike, 2000,	
9	Students are able to analyze alternative designs that are in accordance with the design concept and perfect them	Students are able to select alternative designs that are in accordance with their design concepts and perfect them.	Criterion: Accuracy Accuracy Study acumen Creativeness Shape: Non test Case Based Project	Shape: Studio Lectures Response Time: 1x6x50 = 300 minutes	Shape: Studio Lectures Response Time: 1x6x50 = 300 minutes	• Collins, Hillary, 2019, • Lawson, Bryan.2012 • Martin, Bella and Hannington, Bruce, 2019 • Baxter, Mike, 2000,	2.7%
10	Students are able to carry out advanced analysis as design development	Students are able to carry out advanced analysis as a comprehensive design development	Criterion: Accuracy Accuracy Creativeness Shape: Non test Case Based Method	Shape: Studio Lectures Response Time: 2x6x50 = 1200 minutes		• Collins, Hillary, 2019, • Lawson, Bryan.2012 • Martin, Bella and Hannington, Bruce, 2019 • Baxter, Mike, 2000,	2.7%



11	Students are able to make low fi / mid fi prototyping as part of advanced analysis for evaluation towards the final design	Students are able to make representative low fi / mid fi prototyping	Criterion: Representative Accuracy Creativeness Shape: Non test Case Based Method	Shape: Studio Lectures Response Time: 1x6x50 = 300 minutes	Shape: Studio Lectures Response Time: 1x6x50 = 300 minutes	• Collins, Hillary, 2019, • Lawson, Bryan.2012 • Martin, Bella and Hannington, Bruce, 2019 • Baxter, Mike, 2000,	10%
12	Students are able to determine the final design	Students are able to determine the final design correctly	Criterion: Accuracy Accuracy Novelty Shape: Non test Case Based Method	Shape: Studio Lectures Response Time: 1x6x50 = 300 minutes	Shape: Studio Lectures Response Time: 1x6x50 = 300 minutes	• Collins, Hillary, 2019, • Lawson, Bryan.2012 • Martin, Bella and Hannington, Bruce, 2019 • Baxter, Mike, 2000,	2.7%
13,14	• Students are able to make initial technical drawings as a reference for making hi fi prototyping	• Students are able to make initial technical drawings as a reference for making hi fi prototyping properly and correctly	Criterion: Accuracy Representative Shape: Non test	Shape: Studio Lectures Response Time:	Shape: Studio Lectures Response	• Collins, Hillary, 2019, • Lawson, Bryan.2012	30%



	Students are able to visualize the final product in hi fi prototyping	Students are able to visualize the final product in hi fi prototyping	Case Based Method	1x6x50 = 200 minutes	Time: 3x6x50 = 900 minutes	- Martin, Bella and Hannington, Bruce, 2019 - Baxter, Mike, 2000,	
15	- Students are able to complete product attributes as final design completeness such as branding, packaging, color scheme, etc - Students are able to complete design documents as a final accompaniment to the design in the form of: Technical drawings, process / portfolio documentation & design reports	- Students are able to complete product attributes as the final completeness of designs such as branding, packaging, color schemes, etc. properly and correctly - Students are able to complete design documents as a final accompaniment to the design in the form of: Technical drawings, process / portfolio documentation & design reports	Criterion: Completeness Accuracy Shape: Non test Case Based Method	Shape: Studio Lectures Response Time: 1x6x50 = 300 minutes	Shape: Studio Lectures Response Time: 1x6x50 = 300 minutes	- Collins, Hillary, 2019, - Lawson, Bryan.2012 - Martin, Bella and Hannington, Bruce, 2019 - Baxter, Mike, 2000,	30%
16	Product Design Studio Work Exhibition 3						

**DP2345 ELECTIVE COURSE: APPAREL**

	SEPULUH NOPEMBER INSTITUTE OF TECHNOLOGY SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code
SEMESTER LEARNING PLAN						
COURSE (MK)	CODE	MK CLUSTER	CREDIT (credit)		SEMESTER	Date of Compilation
ELECTIVE COURSE: APPAREL	DP234525	Product Design	T=1	P=2	5	January 25, 2022
AUTHORIZATION	RPS Developer	RMK Coordinator	Head of Study Program			
	Eri Naharani Ustazah, S.T., M.Ds. Irna Arlianti, S.T., M.Ds.	Ari Dwi Krisbianto, S.T., M.Ds.	Bambang Tristiyono, S.T., M.Si			
Learning Outcomes (CP)	CPL-PRODI charged to MK					
	CPL-1	Able to show attitudes and characters that reflect: piety to God Almighty, ethics and integrity, noble ethics, sensitivity and care for social and environmental problems, respect cultural differences and pluralism, uphold law enforcement prioritizing the interests of the nation and the wider community, through creativity and innovation, excellence, strong leadership, synergy, and other potentials possessed to achieve maximum results.				
	CPL-3	Able to manage self-learning, and develop themselves as lifelong learners to compete at national, and international levels, in order to make a real contribution to solving problems by implementing information and communication technology and paying attention to sustainability principles and understanding technology-based entrepreneurship.				
	CPL-4	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.				
	CPL-5	Able to understand and apply knowledge, insight and science related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural, economic and business, entrepreneurship, code of ethics and IPR.				



	CPL-6	Able to design products and systems with consideration of all aspects that influence them, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.																																																						
	CPL-7	Able to research problems, formulate and publish design needs and solutions for the present or future using relevant design and research methodologies.																																																						
	CPL-8	Able and skilled in using design process aids that include: manual or digital equipment according to technology and the times.																																																						
	Course Learning Outcomes (CPMK)																																																							
	CPMK-1	Students are able to identify the philosophy, basic concepts and anatomy of products from examples of apparel products (C2, P1, A2)																																																						
	CPMK-2	Students are able to develop Nusantara wastra-based pattern designs (C3, P4, A4)																																																						
	CPMK-3	Students are able to conceptualize business opportunities based on market segmentation (C3, P3, A3)																																																						
	CPMK-4	Students are able to identify terms, components, and ecosystems in the fashion business (C2, P1, A2)																																																						
	CPMK-5	Students are able to describe the business plan of apparel products that have been developed (C4, A4, P4)																																																						
		CPL matrix – CPMK <table><tr><td>CPMK</td><td>CPL-1</td><td>CPL-3</td><td>CPL-4</td><td>CPL-5</td><td>CPL-6</td><td>CPL-7</td><td>CPL-8</td></tr><tr><td>CPMK-1</td><td>V</td><td>V</td><td>V</td><td>V</td><td></td><td></td><td></td></tr><tr><td>CPMK-2</td><td>V</td><td>V</td><td>V</td><td></td><td>V</td><td></td><td>V</td></tr><tr><td>CPMK-3</td><td>V</td><td>V</td><td></td><td>V</td><td></td><td>V</td><td></td></tr><tr><td>CPMK-4</td><td>V</td><td></td><td>V</td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK-5</td><td>V</td><td>V</td><td></td><td></td><td></td><td>V</td><td></td></tr></table>								CPMK	CPL-1	CPL-3	CPL-4	CPL-5	CPL-6	CPL-7	CPL-8	CPMK-1	V	V	V	V				CPMK-2	V	V	V		V		V	CPMK-3	V	V		V		V		CPMK-4	V		V					CPMK-5	V	V				V
CPMK	CPL-1	CPL-3	CPL-4	CPL-5	CPL-6	CPL-7	CPL-8																																																	
CPMK-1	V	V	V	V																																																				
CPMK-2	V	V	V		V		V																																																	
CPMK-3	V	V		V		V																																																		
CPMK-4	V		V																																																					
CPMK-5	V	V				V																																																		
Brief Description MK	The course is integrated into simple apparel product making applications and business planning so that students have the ability Creating apparel product business concepts based on market opportunities																																																							
Study Material: Learning Material	1. Introduction to philosophy, concepts and patterns / ornamental varieties of apparel / textile products 2. Modification of pattern design / ornamental variety 3. Development of Nusantara wastra-based product design 4. Business management on apparel / textile products																																																							



Book	Main:
	1. Anitha, D. (2005). <i>Fashion and Apparel Designing: Fashion and Garment Making</i> . State Institute of Vocational Education, Directorate of Intermediate Education. Government of Andhra Pradesh Hyderabad.
	2. Calderin, J. (2011). <i>Fashion design essentials: 100 principles of fashion design</i> . Rockport Publishers.
	Supporter:
	1. Kusrianto, A. (2013). <i>Batik: Philosophy, motives, and uses</i> . CV Andi Offset (Andi Publisher).
	2. Kotler, P., & Keller, K. L. (2016). <i>A framework for marketing management</i> (p. 352). Boston, MA: Pearson.
Lecturer	
Subject requirements	-

Mg To-	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assessment Weight (%)
		Indicators	Criteria & Forms	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1, 2	Students are able to identify the philosophy, basic concepts and anatomy of products from examples of apparel products (C2, P1, A2)	Accuracy in identifying the meaning of ornamental varieties, the character of forms, types – Types of Nusantara Fabrics / Art Content, Components, Uses,	Criterion: Accuracy and insight Shape: Non test	Shape: Lecture Response Method: Discussion Assignment: Create a module about Indonesian		Introduction to Batik: Philosophy, Concept & Making Book: Kusrianto, A. (2013). <i>Batik: Philosophy, motives, and uses</i> . CV Andi Offset	5



		and Manufacturing Techniques		fabrics / art based on the main components, add a description of meaning / philosophy (Task 1) Estimated time : 1x2x50'			
3	Students are able to develop Nusantara wastra-based pattern designs (C3, P4, A4)	The accuracy of shape distillation based on the characteristics of Indonesian / art fabric motifs	Criterion: Accuracy, mastery, neatness Shape: Non test	Shape: Tutorial Response Method: Case based learning Assignment: Sketch batik motif design modifications based on their respective distinctive batik (Task 2) Estimated time :		Modification of Pattern Design / Ornamental Variety https://drive.google.com/drive/folders/1xZyhqkKvlq6O9qxR5bqauk9xbxClvW8-?usp=sharing Batik Making Process https://www.youtube.com/watch?v=znhcIP9ofaM Modern batik brands https://www.instagram.com/sejauh_mata_memandang/ Book: Kusrianto, A. (2013). Batik: Philosophy, motives, and uses. CV Andi Offset.	10



				1x2x50'			
4	Students are able to develop Nusantara wastra-based pattern designs (C3, P4, A4)	Harmony of color use based on batik character and design concept	Criterion: Accuracy and mastery Shape: Non test	Shape: Workshop Response Method: Case based learning Assignment: Final sketch coloring (Task 3) Estimated time : 1x2x50'		Modification of Pattern Design / Ornamental Variety Batik motif sketch coloring practice https://drive.google.com/drive/folders/1jyJlc_ch9NKL2TnX7E_sc4FkjwhX8-dXKy?usp=sharing	10
5, 6	Students are able to develop Nusantara wastra-based pattern designs (C3, P4, A4)	Accuracy of pattern preparation, coloring, completeness of motif components and manufacturing techniques	Criterion: Precision, mastery, form sensitivity and aesthetics Shape: Non test	Shape: Response Workshop Method: Case based learning Assignment: make a design application to the final design pattern on selected apparel products and fabrics along		Development of Product Design Based on Wastra Nusantara The practice of making batik https://drive.google.com/drive/folders/1vWRqP8Fbn1O_Od7zB4r4izfJfoNyL_cL?usp=sharing Book: 4. Anitha, D. (2005). <i>Fashion and Apparel Designing: Fashion and Garment Making</i> . State Institute of Vocational Education, Directorate of Intermediate Education. Government of Andhra Pradesh Hyderabad.	20



				with the design concept (Task 4) Estimated time : 2x2x50'		5. Calderin, J. (2011). <i>Fashion design essentials: 100 principles of fashion design</i> . Rockport Publishers.	
7	Students are able to conceptualize business opportunities based on market segmentation (C3, P3, A3)	Accuracy in determining product competitors based on market segments	Criterion: Accuracy and mastery Shape: Non test	Shape: Response Workshop Method: Case based learning Assignment: Create an analysis competitors and perceptual maps based on apparel brands (Task 5) Estimated time : 1x2x50'		Business Management on Apparel / Textile Products – Business Opportunity Analysis https://docs.google.com/spreadsheets/d/1S3ZPswAeCfPjaiGS1uCVTVNVXYEFFz1782Hy1JDGWA/edit?usp=sharing https://docs.google.com/presentation/d/1y5gEjvE1HhyQD6K2gOdig7Fz1ZZD4pa1YCeyrF6C2hY/edit?usp=sharing Book: Kotler, P., & Keller, K. L. (2016). <i>A framework for marketing management</i> (p. 352). Boston, MA: Pearson.	10
Midterm Evaluation							
9, 10	Students are able to identify terms, components, and ecosystems in the fashion business (C2, P1, A2)	Accuracy identifies legendary figures of the fashion industry, user profiles (based on generation level), phenomenal fashion	Criterion: Accuracy and mastery Shape: Non test	Shape: Discussion Method: Case based learning		Business Management in Apparel / Textile Products – Branding & People in Fashion Business (I) Book:	10



		works		Explanation of fashion figures works, and target user profiles by generation. Estimated time : 2x2x50'		1. Anitha, D. (2005). <i>Fashion and Apparel Designing: Fashion and Garment Making</i> . State Institute of Vocational Education, Directorate of Intermediate Education. Government of Andhra Pradesh Hyderabad. 2. Calderin, J. (2011). <i>Fashion design essentials: 100 principles of fashion design</i> . Rockport Publishers.	
11	Students are able to identify terms, components, and ecosystems in the fashion business (C2, P1, A2)	Accuracy in identifying components in brand creation	Criterion: Accuracy and mastery Shape: Non test	Shape: Discussion Method: Case-based learning Explanati on of value, labels, fashion shows, materials used in apparel brands Estimated time :		Business Management in Apparel / Textile Products – Branding & People in Fashion Business (II) Book: 1. Anitha, D. (2005). <i>Fashion and Apparel Designing: Fashion and Garment Making</i> . State Institute of Vocational Education, Directorate of Intermediate Education. Government of Andhra Pradesh Hyderabad. 2. Calderin, J. (2011). <i>Fashion design essentials: 100 principles of fashion design</i> . Rockport Publishers.	5



				1x2x50'			
12	Students are able to identify terms, components, and ecosystems in the fashion business (C2, P1, A2)	Accuracy in understanding the journey process and practitioners' experience in building a brand	Criterion: Accuracy and mastery Shape: Non test	Shape: Discussion Method: Case-based learning Explanation of promotion guide, influencer, brand visualization Estimated time : 1x2x50'		Business Management on Apparel / Textile Products – Brand Recognition Book: 1. Anitha, D. (2005). <i>Fashion and Apparel Designing: Fashion and Garment Making</i> . State Institute of Vocational Education, Directorate of Intermediate Education. Government of Andhra Pradesh Hyderabad. 2. Calderin, J. (2011). <i>Fashion design essentials: 100 principles of fashion design</i> . Rockport Publishers	5
13, 14	Students are able to identify terms, components, and ecosystems in the fashion business (C2, P1, A2)	Accuracy in identifying digital marketing techniques & components in the retail industry	Criterion: Accuracy and mastery Shape: Non test	Shape: Discussion Method: Case-based learning Estimated time : 1x2x50'		Business Management on Apparel / Textile Products – Go Online & Retail Book: 1. Anitha, D. (2005). <i>Fashion and Apparel Designing: Fashion and Garment Making</i> . State Institute of Vocational Education, Directorate of Intermediate Education. Government of Andhra Pradesh Hyderabad. 2. Calderin, J. (2011). <i>Fashion design essentials: 100 principles of fashion design</i> . Rockport Publishers 3. Kotler, P., & Keller, K. L. (2016). <i>A framework for marketing management</i> (p. 352). Boston, MA: Pearson.	10



15	Students can describe the business plan of apparel products that have been developed (C4, P4, A4)	Accuracy in preparing a business plan based on business opportunity analysis and knowledge in the fashion business	Criterion: Accuracy and insight Shape: Non test	Shape: Workshop Method: Case-based learning Assignment: Prepare a business plan for the final batik design developed (Task 6) Estimated time : 1x2x50'	Business Management on Apparel / Textile Products – Business Plan Brief Book: 1. Anitha, D. (2005). <i>Fashion and Apparel Designing: Fashion and Garment Making</i> . State Institute of Vocational Education, Directorate of Intermediate Education, Government of Andhra Pradesh Hyderabad. 2. Calderin, J. (2011). <i>Fashion design essentials: 100 principles of fashion design</i> . Rockport Publishers 3. Kotler, P., & Keller, K. L. (2016). A framework for marketing management (p. 352). Boston, MA: Pearson.	10
16	End of Semester Evaluation / End of Semester Exam					100



P234526 ELECTIVE COURSE: FURNITURE

		INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code		
SEMESTER LEARNING PLAN									
COURSE (MK)		CODE		MK CLUSTER		CREDIT (credit)		SEMESTER	Date of Compilation
ELECTIVE COURSE: FURNITURE		DP234526		Product Design		T= 1	P=2	5 (five)	November 10, 2022
AUTHORIZATION 		RPS Developer			RMK Coordinator			Head of Study Program	
		Audit Yulardi, S.T, M.Ds			Ari Dwi Krisbianto, S.T., M.Ds.			Bambang Tristiyono, S.T., M.Si	
Learning Outcomes (CP)	Study Program CPL charged to MK								
	CPL-4	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.							
	CPL-6	Able to design products and systems with consideration of all aspects that influence them, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.							
	CPL-9	Able to present ideation design concepts through verbal communication, visual media, and prototypes (Models / mock-ups / prototypes) using various relevant technologies.							
	Course Learning Outcomes (CPMK)								
	CPMK-1	Students know the technical aspects of furniture design.							
	CPMK-2	Understand the basic structure and construction of furniture products.							
	CPMK-3	Able to design experimental furniture products.							
	CPMK-4	Able to make production planning & RAB designed furniture products.							



	CPMK-5	Present the results of product design in the form of scale models or prototypes.																											
		CPL matrix – CPMK <table><tr><td>CPMK</td><td>CPL-4</td><td>CPL-6</td><td>CPL-9</td></tr><tr><td>CPMK-1</td><td>V</td><td></td><td></td></tr><tr><td>CPMK-2</td><td>V</td><td></td><td></td></tr><tr><td>CPMK-3</td><td></td><td>V</td><td></td></tr><tr><td>CPMK-4</td><td></td><td>V</td><td></td></tr><tr><td>CPMK-5</td><td></td><td></td><td>V</td></tr></table>				CPMK	CPL-4	CPL-6	CPL-9	CPMK-1	V			CPMK-2	V			CPMK-3		V		CPMK-4		V		CPMK-5			V
CPMK	CPL-4	CPL-6	CPL-9																										
CPMK-1	V																												
CPMK-2	V																												
CPMK-3		V																											
CPMK-4		V																											
CPMK-5			V																										
Brief Description MK	This course studies the design process that focuses on exploring experimental furniture products, through a studio learning system by applying the basic theories of furniture design, material exploration, functions and furniture design systems. So that students have the ability to design experimental furniture products in accordance with product design rules.																												
Study Material: Learning Material	Study Material : 1. Experimental furniture 2. Technical aspects of furniture design 3. Exploration and ideation of experimental furniture design. 4. Simulation & evaluation of furniture product design 5. Production planning 6. RAB Preparation																												
Book	Main:																												
	5. Postell, Jim. 2012. Designing Furniture, Second Edition, Willey, Canada. 6. Dunne, A., Raby, F. 2013. Speculative Everything: Design, Fiction, and Social Dreaming, The MIT Press, London. England.																												
	Supporter:																												
	-																												
Lecturer	Audit Yulardi, S.T., M.Ds.																												



Subject requirements		-					
Mg To-	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assessment Weight (%)
		Indicators	Criteria & Forms	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Know the lesson plan of the lecture Know the understanding and examples of examples of experimental furniture design design.	Students remember lesson plans Able to present references and examples of experimental furniture products	Carry out discussions well.	Lecture Discussion 150 minutes	-	Postell, Jim. 2012. Designing Furniture, Second Edition, Willey, Canada. Dunne, A., Raby, F. 2013. Speculative Everything: Design, Fiction, and Social Dreaming, The MIT Press, London. England.	-
2	Know the exploration of materials, functions, and design systems in experimental furniture design.	Able to present examples & processes of material exploration, functions and design systems on existing furniture products.	Able to present well, relevant sources and references, discussion according to case studies.	Presentation Discussion 150 minutes	-	Postell, Jim. 2012. Designing Furniture, Second Edition, Willey, Canada. Dunne, A., Raby, F. 2013. Speculative Everything: Design, Fiction, and Social Dreaming, The MIT	4



						Press, London. England.	
3	Able to make <i>user / customer analysis</i>	Able to make user persona analysis.	Analyze user personas accordingly.	Practice Discussion & Presentation 150 minutes	-	Postell, Jim. 2012. Designing Furniture, Second Edition, Willey, Canada.	4
4	Understand the ergonomics of furniture products	Students are able to plan the basic geometry of furniture design according to ergonomic theory and anthropometric data.	Able to produce basic sizes and geometry with sizes according to anthropometric references and ergonomic theory references.	Lecture Discussion Practice 150 minutes	-	Postell, Jim. 2012. Designing Furniture, Second Edition, Willey, Canada.	4
5	Understand the basic aspects of structure and construction in furniture products	Students understand the kinds of construction on furniture products Students understand the structure and construction of furniture products	Able to apply the correct construction to the design of furniture design.	Lecture Discussion Practice 150 minutes	-	Postell, Jim. 2012. Designing Furniture, Second Edition, Willey, Canada.	4
6	Create design concepts, design references, moodboards, material boards.	Able to make design concept descriptions, idea references, moodboards and board materials	Concept description, design reference, moodboard and board material accordingly	Discussion Practice 150 minutes	-	Postell, Jim. 2012. Designing Furniture, Second Edition, Willey, Canada.	4
7	Exploring furniture product design: sketching ideas.	Able to make design explorations through sketching ideas	Sketsa ideas according to the design concept.	Discussion Practice 150 minutes	-	Postell, Jim. 2012. Designing Furniture, Second Edition, Willey,	4



						Canada.	
8	Able to explore furniture product design: <i>low fidelity model</i> .	Able to make design exploration through <i>low fidelity models</i>	Low fidelity model according to the concept.	Discussion Practice 150 minutes	-	Postell, Jim. 2012. Designing Furniture, Second Edition, Willey, Canada.	6
9	Perform simulations on the final design.	Able to determine the final design from selected design alternatives. Shape simulation and component detailing with 3D model software.	Final determination of design according to concept & by design meets technical aspects.	Discussion Practice 150 minutes	-	Postell, Jim. 2012. Designing Furniture, Second Edition, Willey, Canada.	8
10	Conduct design development	Shape simulation and component detailing with 3D model software.	Complete components and size according to scale.	Discussion Practice 150 minutes	-	Postell, Jim. 2012. Designing Furniture, Second Edition, Willey, Canada.	8
11	Design evaluation	Able to carry out design evaluations with 1: 1 scale drawings.	The evaluation report is appropriate.	Discussion Presentation 150 minutes	-	Postell, Jim. 2012. Designing Furniture, Second Edition, Willey, Canada.	9
12	Planning the production process and RAB	Able to make production planning and compile RAB.	Production planning and RAB according to design.	Discussion Practice 150 minutes	-	Postell, Jim. 2012. Designing Furniture, Second Edition, Willey, Canada.	8



13	Making mockups / prototypes of final design and documentation of works	Able to make mockups / prototypes and technical drawings	The results of the model / prototype according to the design, log book appropriate, technical drawings after the design	Discussion Practice 150 minutes	-	Postell, Jim. 2012. Designing Furniture, Second Edition, Willey, Canada.	9
14	Making mockups / prototypes of final design and documentation of works	Able to make mockups / prototypes and technical drawings	The results of the model / prototype according to the design, log book appropriate, technical drawings after the design	Discussion Practice 150 minutes	-	Postell, Jim. 2012. Designing Furniture, Second Edition, Willey, Canada.	9
15	Making mockups / prototypes of final design and documentation of works	Able to make mockups / prototypes and technical drawings	The results of the model / prototype according to the design, log book appropriate, technical drawings after the design	Discussion Practice 150 minutes	-	Postell, Jim. 2012. Designing Furniture, Second Edition, Willey, Canada.	9
16	Product presentation	Conduct exhibitions & present works.	Able to present products well.	Presentation 150 minutes	-	Postell, Jim. 2012. Designing Furniture, Second Edition, Willey, Canada.	10

**DP234527 ELECTIVE COURSE: CAR STYLING**

		INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code
SEMESTER LEARNING PLAN							
COURSE (MK)		CODE	MK CLUSTER	CREDIT (credit)		SEMESTER	Date of Compilation
ELECTIVE COURSE: CAR STYLING		DP234527	Product Design	T=1	P=2	5 (five)	November 10, 2022
AUTHORIZATION		RPS Developer		RMK Coordinator		Head of Study Program	
		Arie Kurniawan, S.T, M.Ds		Ari Dwi Krisbianto, S.T., M.Ds.		Bambang Tristiyono, S.T., M.Si	
Learning Outcomes (CP)	Study Program CPL charged to MK						
	CPL-1	Able to show attitudes and characters that reflect: piety to God Almighty, ethics and integrity, noble ethics, sensitivity and care for social and environmental problems, respect cultural differences and pluralism, uphold law enforcement prioritizing the interests of the nation and the wider community, through creativity and innovation, excellence, strong leadership, synergy, and other potentials possessed to achieve maximum results.					
	CPL-3	Able to manage self-learning, and develop themselves as lifelong learners to compete at national, and international levels, in order to make a real contribution to solving problems by implementing information and communication technology and paying attention to sustainability principles and understanding technology-based entrepreneurship.					
	CPL-4	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.					
	CPL-5	Able to understand and apply knowledge, insight and science related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural, economic and business, entrepreneurship, code of ethics and IPR.					
	CPL-8	Able and skilled in using design process aids that include: manual or digital equipment according to technology and the times.					



	Course Learning Outcomes (CPMK)																																								
	CPMK-1	Students are able to present designs orally, in writing, and multimedia in the form of abstraction and visual, in detail their functions on vehicles (carstyling)																																							
	CPMK-2	Students understand the theoretical concepts of product design: (1) function, (2) aesthetics, (3) economic, (4) social, and (5) technology in general in product development																																							
	CPMK-3	Students understand the creative exploration process and various methods of finding shapes on vehicles (carstyling)																																							
	CPMK-4	Able to read trends and vehicle shape styles according to user personas																																							
	CPMK-5	Students master the ability to compile design concepts that are delivered orally, in writing, and multimedia in the form of abstractions and visuals related to the value of vehicle forms (carstyling)																																							
		CPL matrix – CPMK <table border="1"> <thead> <tr> <th>CPMK</th><th>CPL-1</th><th>CPL-3</th><th>CPL-4</th><th>CPL-5</th><th>CPL-8</th></tr> </thead> <tbody> <tr> <td>CPMK-1</td><td>v</td><td>v</td><td></td><td></td><td>v</td></tr> <tr> <td>CPMK-2</td><td>v</td><td></td><td></td><td>v</td><td></td></tr> <tr> <td>CPMK-3</td><td>v</td><td></td><td>V</td><td></td><td>V</td></tr> <tr> <td>CPMK-4</td><td>v</td><td></td><td>v</td><td></td><td></td></tr> <tr> <td>CPMK-5</td><td>v</td><td></td><td></td><td>V</td><td>v</td></tr> </tbody> </table>				CPMK	CPL-1	CPL-3	CPL-4	CPL-5	CPL-8	CPMK-1	v	v			v	CPMK-2	v			v		CPMK-3	v		V		V	CPMK-4	v		v			CPMK-5	v			V	v
CPMK	CPL-1	CPL-3	CPL-4	CPL-5	CPL-8																																				
CPMK-1	v	v			v																																				
CPMK-2	v			v																																					
CPMK-3	v		V		V																																				
CPMK-4	v		v																																						
CPMK-5	v			V	v																																				
Brief Description MK	Write down the relevance & scope of the material/study material in accordance with this course and in accordance with the Sub-CPMK																																								
Study Material: Learning Material	Study Material : 1. The role of carstyling in vehicle value 2. Morphology of forms 3. Biomimicry 4. Persona-image board 5. Trendforecasting 6. Brand identity- Brand Language 7. Brand Identity- Giving birth to a brand 8. Transformation of form and DNA 9. Iconic, signature & archetype studies 10. Syntactic forming																																								



	11. Semantic case study 12. Aerodynamic vs diamond cut 13. Minor change & major change 14. Model studies and simple case studies						
Book	Main:						
	1. Meadows, Jordan (2017), "Vehicle Design: Aesthetic Principles in Transportation Design", Routledge, New York. 2. Kurniawan, Arie. 2018. Peek & Seek: System Design. Surabaya : Despro ITS 3. Martin, Bella and Bruce Hanington. 2010. Universal Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions. Massachusetts: Rockport Publishers 4. Dewey, Adrian (2017) "How to Illustrate and Design Concept Cars: New Edition", Veloce Publishing, Dorchester UK 5. Nikolaos, Gkikas (2013), "Automotive Ergonomics-Driver Vehicle Interaction", CRC Press, Taylor & Francis Group, 6000 Broken Sound Parkway, NW Suite 300, Boca Raton, London. 6. Stuart Macey, Geoff Wardley (2008), "H Point-The Fundamentals of Car Design & Packaging", Design Studio Press, Higuera Street, Culver City, California. 7. Eissen, Koos & Roselien Steur. 2014. Sketching Product Design Presentation, Amsterdam: BIS Publisher						
	Supporter:						
	1. Leon G. Schiffman, Leslie Lazar Kanuk (2007), "Consumer Behavior", Ninth Edition, Prentice Hall, Pearson Education, Inc., New Jersey.						
Lecturer	Arie Kurniawan, S.T, M.Ds.						
Subject requirements	-						
Mg To-	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assessment Weight (%)
		Indicators	Criteria & Forms	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students are able to explain and express	Clarity of opinion	Criterion:	Shape: Lecture	-	Material:	5



	opinions related to examples of carstyling concepts and identify the benefits of styling in vehicle values (C2, A3, P3)	regarding examples of carstyling concepts and their benefits on vehicle value	Accuracy and insight Shape: Non test Discussion	Response Discussion Method: Student Centre Learning (SCL) – Class discussion Assignment: Expressing opinions along with examples of carstyling concepts and their benefits on vehicle value Estimated Time : 1x3x50 = 150 minutes		'The role of carstyling on vehicle value) Book: Meadows, Jordan (2017), "Vehicle Design: Aesthetic Principles in Transportation Design", Routledge, New York.	
2	Students are able to implement the morphology method of shapes in the creative process of carstyling (C3, A4, P3)	Accuracy of creative exploration with sketches using morphological methods in vehicles	Criterion: Precision, mastery, exploratory Shape: Workshop Vehicle sketches	Shape: Lecture Response Workshop Method: Case methods Workshop Assignment: Sketch of a personal vehicle by morphological method Estimated Time : 1x3x50 = 150 minutes	-	Material: 'Morphological methods on creative exploration of vehicle forms (carstyling) Book: Dewey, Adrian (2017) "How to Illustrate and Design Concept Cars: New Edition", Veloce Publishing, Dorchester UK Martin, Bella and Bruce Hanington. 2010. Universal	7



						Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions. Massachusetts: Rockport Publishers	
3	Students are able to implement the biomimicry method in the creative process of carstyling (C3, A4, P3)	Accuracy of creative exploration with sketching using biomimicry method in vehicles	Criterion: Precision, mastery, exploratory Shape: Workshop Vehicle sketches	Shape: Lecture Response Workshop Method: Case methods Workshop Assignment: Sketch of a personal vehicle by biomimicry method Estimated Time : 1x3x50 = 150 minutes	-	Material: 'Biomimicry method on creative exploration of vehicle forms (carstyling) Book: Dewey, Adrian (2017)"How to Illustrate and Design Concept Cars: New Edition", Veloce Publishing, Dorchester UK Martin, Bella and Bruce Hanington. 2010. Universal Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and	7



						Design Effective Solutions. Massachusetts: Rockport Publishers	
4	Students are able to implement persona and imageboard methods in the creative process of carstyling (C4, A4, P3)	Accuracy of creative exploration with sketching using the persona imageboard method in vehicles	Criterion: Accuracy, mastery, systematics, Exploratory Shape: Workshop Vehicle sketches	Shape: Lecture Response Workshop Method: Student Centre Learning (SCL) – workshop Assignment: Sketch of a personal vehicle with the persona method Estimated Time : 1x3x50 = 150 minutes	-	Material: 'Persona (carstyling) Book: Meadows, jordan (2017), "Vehicle Design: Aesthetic Principles in Transportation Design"', Routledge, New York. Martin, Bella and Bruce Hanington. 2010. Universal Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions. Massachusetts: Rockport Publishers	7
5	Students are able to implement the trendforecasting method	The accuracy of creative exploration with sketches	Criterion: Accuracy, mastery, systematics, Exploratory	Shape: Lecture Response Workshop	-	Material: "Trendforecasting (carstyling)' Book:	7



	in the creative process of carstyling (C4, A4, P3)	using the trendforecasting method in vehicles	Shape: Workshop Vehicle sketches	Method: Student Centre Learning (SCL) – workshop Assignment: Sketch of a personal vehicle with the trendforecasting method Estimated Time : 1x3x50 = 150 minutes		Meadows, Jordan (2017), "Vehicle Design: Aesthetic Principles in Transportation Design", Routledge, New York. Martin, Bella and Bruce Hanington. 2010. Universal Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions. Massachusetts: Rockport Publishers	
6	Students are able to implement the brand identity method on the creative process of carstyling (C4,A4,P3)	The accuracy of creative exploration with sketches using the brand identity method in vehicles	Criterion: Accuracy, mastery, Exploratory Shape: Workshop Vehicle sketches	Shape: Lecture Response Workshop Method: Student Centre Learning (SCL) – workshop Assignment:	-	Material: "Brand identity- (carstyling)" Book: Meadows, Jordan (2017), "Vehicle Design: Aesthetic Principles in Transportation Design", Routledge, New York.	7



				Sketch of a personal vehicle with the brand identity method Estimated Time : 1x3x50 = 150 minutes		Martin, Bella and Bruce Hanington. 2010. Universal Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions. Massachusetts: Rockport Publishers	
7	Students are able to implement the brand identity method and give birth to brands on the creative process of carstyling (C4,A4,P3)	Accuracy of creative exploration with sketches using the brand identity method – a new brand in the vehicle	Criterion: Accuracy, mastery, Exploratory Shape: Workshop Vehicle sketches	Shape: Lecture Response Workshop Method: Case methods – workshop Assignment: Sketch of a personal vehicle with the brand identity method – a new brand Estimated Time : 1x3x50 = 150 minutes	-	Material: 'Branding- (carstyling)' Book: Meadows, Jordan (2017), "Vehicle Design: Aesthetic Principles in Transportation Design", Routledge, New York. Martin, Bella and Bruce Hanington. 2010. Universal Methods of Design- 100 Ways to Research Complex	7



						Problems, Develop Innovative Ideas, and Design Effective Solutions. Massachusetts: Rockport Publishers	
8	Midterm Evaluation / Midterm Exam: Collection of workshop design documents accompanied by revisions						
9	Students are able to implement the method of transforming the shape of vehicle products in one DNA on the creative process of carstyling (C4,A4,P3)	The accuracy of creative exploration with sketches using the method of transforming the shape of DNA in vehicles	Criterion: Accuracy, mastery, Exploratory Shape: Workshop Vehicle sketches	Shape: Lecture Response Workshop Method: Student Centre Learning (SCL) – workshop Assignment: Sketch of a personal vehicle with transformation forming method Estimated Time : 1x3x50 = 150 minutes	-	Material: "Transformation forming-(carstyling)" Book: Meadows, Jordan (2017), "Vehicle Design: Aesthetic Principles in Transportation Design", Routledge, New York. Martin, Bella and Bruce Hanington. 2010. Universal Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions. Massachusetts: Rockport Publishers	7



10	Students are able to implement shape development methods on the basis of iconic, signature and archetype products on the creative process of carstyling (C4,A4,P3)	The accuracy of creative exploration with sketches using the method of developing shapes on the basis of iconic products, signatures and archetypes on vehicles	Criterion: Accuracy, mastery, Exploratory Shape: Workshop Vehicle sketches	Shape: Lecture Response Workshop Method: Case methods – workshop Assignment: Sketch of a private vehicle with iconic, signature and archetype identification methods Estimated Time : 1x3x50 = 150 minutes	-	Material: "DNA formula- (carstyling)" Book: Meadows, jordan (2017), "Vehicle Design: Aesthetic Principles in Transportation Design", Routledge, New York. Martin, Bella and Bruce Hanington. 2010. Universal Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions. Massachusetts: Rockport Publishers	5
11	Students are able to implement the syntactic forming method on the creative process of carstyling (C4,A4,P4)	Accuracy of creative exploration with sketching using syntactic forming	Criterion: Accuracy, mastery, Form development Shape: Workshop Vehicle sketches	Shape: Lecture Response Workshop Method: Case methods – workshop	-	Material: 'Syntac: Morphology Complexity - (carstyling)' Book: Meadows, jordan (2017), "Vehicle	7



		method in vehicles		Assignment: Sketch of a personal vehicle with syntactic forming method Estimated Time : 1x3x50 = 150 minutes		Design: Aesthetic Principles in Transportation Design"", Routledge, New York. Martin, Bella and Bruce Hanington. 2010. Universal Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions. Massachusetts: Rockport Publishers	
12	Students are able to implement the semantic approach method on the creative process of carstyling (C4,A4,P4)	The accuracy of creative exploration with sketching using the semantic approach method in vehicles	Criterion: Accuracy, mastery, Form development Shape: Workshop Vehicle sketches	Shape: Lecture Response Workshop Method: Student Centre Learning (SCL) – workshop Assignment: Sketch of a personal vehicle with a semantic approach method	-	Material: 'Semantics: look a like – (carstyling)' Book: Meadows, jordan (2017), "Vehicle Design: Aesthetic Principles in Transportation Design"", Routledge, New York.	7



				Estimated Time : 1x3x50 = 150 minutes		Martin, Bella and Bruce Hanington. 2010. Universal Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions. Massachusetts: Rockport Publishers	
13	Students are able to implement the approach method of aerodynamic forms and diamond cutting on the creative process of carstyling (C4,A4,P4)	The accuracy of creative exploration with sketching using aerodynamic approach methods and diamond cutting in vehicles	Criterion: Accuracy, mastery, Exploration Shape: Workshop Vehicle sketches	Shape: Lecture Response Workshop Method: Team based project – workshop Assignment: Sketch of a personal vehicle with aerodynamic approach method and diamond cutting Estimated Time : 1x3x50 = 150 minutes	-	Material: 'Semantics ; forming look a like- (carstyling)' Book: Meadows, jordan (2017), "Vehicle Design: Aesthetic Principles in Transportation Design"", Routledge, New York. Stuart Macey, Geoff Wardley (2008), "H Point-The Fundamentals of Car Design & Packaging", Design Studio Press,	5



						Higuera Street, Culver City, California.	
14,15	Students are able to develop vehicle forms with predetermined case studies and choose methods that have been mastered with minor change and major change limitations (C4, A4, P5)	Innovation of ideas and ideas in good sketches along with the systematics of delivering the concept of creative exploration	Criterion: Accuracy Methodical Mastery Shape: Non test Presentation of design documents	Shape: Lecture Response Class exhibition Method: Team based project Assignment: Presentation and presentation of carstyling design documents Estimated Time : 2x3x50	-	Material: Team based project – electric vehicle indonesia Book: Meadows, jordan (2017), "Vehicle Design: Aesthetic Principles in Transportation Design", Routledge, New York.	7
16	End of Semester Evaluation / Final Semester Exam: Collection of work portfolio and discussion of lecture conclusions						15

**DP234528 ELECTIVE COURSE: JEWELRY**

		INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code	
SEMESTER LEARNING PLAN								
COURSE (MK)		CODE	MK CLUSTER		CREDIT (credit)		SEMESTER	Date of Compilation
ELECTIVE COURSE: JEWELRY		DP234528	Product Design		T=1	P=3	4	December 30, 2022
AUTHORIZATION 		RPS Developer		RMK Coordinator		Head of Study Program		
		Ari Dwi Krisbianto, S.T., M.Ds.		Ari Dwi Krisbianto, S.T., M.Ds.		Bambang Tristiyono, ST., M.Si		
Learning Outcomes (CP)	Study Program CPL charged to MK							
	CPL-4	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.						
	CPL-5	Able to understand and apply knowledge, insight and science related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural, economic and business, entrepreneurship, code of ethics and IPR.						
	CPL-6	Able to design products and systems with consideration of all aspects that influence them, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.						
	CPL-8	Able and skilled in using design process aids that include: manual or digital equipment according to technology and the times.						
	CPL-9	Able to present ideation design concepts through verbal communication, visual media, and prototypes (Models / mock-ups / prototypes) using various relevant technologies.						
	Course Learning Outcomes (CPMK)							



	CPMK-1	Able to use pragmatic design concepts (designs based on the use of materials and carried out experimentally, until an appropriate form is created) and constructive.																																														
	CPMK-2	Students know the basic technical aspects of jewelry																																														
	CPMK-3	Able to understand and plan the details of jewelry shapes in three dimensions																																														
	CPMK-4	Students know the values in jewelry products.																																														
	CPMK-5	Able to develop form ideas to enrich alternatives and explore design																																														
	CPMK-6	Students are able to make lightweight models with substitution materials as a representation of concepts																																														
		CPL matrix – CPMK <table><tr><th>CPMK</th><th>CPL-4</th><th>CPL-5</th><th>CPL-6</th><th>CPL-8</th><th>CPL-9</th></tr><tr><td>CPMK-1</td><td>V</td><td></td><td>V</td><td></td><td></td></tr><tr><td>CPMK-2</td><td>V</td><td>V</td><td></td><td></td><td></td></tr><tr><td>CPMK-3</td><td></td><td>V</td><td></td><td>V</td><td>V</td></tr><tr><td>CPMK-4</td><td>V</td><td></td><td>V</td><td></td><td></td></tr><tr><td>CPMK-5</td><td></td><td></td><td>V</td><td>V</td><td>V</td></tr><tr><td>CPMK-6</td><td></td><td></td><td></td><td>V</td><td>V</td></tr></table>					CPMK	CPL-4	CPL-5	CPL-6	CPL-8	CPL-9	CPMK-1	V		V			CPMK-2	V	V				CPMK-3		V		V	V	CPMK-4	V		V			CPMK-5			V	V	V	CPMK-6				V	V
CPMK	CPL-4	CPL-5	CPL-6	CPL-8	CPL-9																																											
CPMK-1	V		V																																													
CPMK-2	V	V																																														
CPMK-3		V		V	V																																											
CPMK-4	V		V																																													
CPMK-5			V	V	V																																											
CPMK-6				V	V																																											
Brief Description MK	Courses that study styling-jewelry category products through a studio learning system in the form of idea searching, concept formulation and drawing practice according to creative design rules through processing design elements and principles into aesthetic ornaments and motifs and are expected to be able to interact with the human body that wears it.																																															
Study Material: Learning Material	1. Collecting attractive objects around to be used as a point of interest of jewelry products 2. Processing attractive materials that have been taken to have a higher level of functionality for the next stage of exploration. At least it has the function of attractive material protection from external impact and ergonomics. 3. The industry-standard system of sketching and drawing in stone arrangement for each case of plane shape. 4. Mechanism and chains system in jewelry as a function of series and decoration 5. Explore jewelry shapes and motifs by sketching alternative jewelry (pendants or rings) 6. Evaluation of alternative sketch tasks. Shrinking towards the final design to be modeled 7. Assistance in the development of selected alternatives 8. Polymer Clay Jewelry 9. Jewelry values 10. Variety design 11. Popular Materials from Time to Time																																															



	12. Jewelry Inspiration 13. Basics of drafting 14. Jewelry trends 15. Mix and match fashion 16. Final presentation						
Book	Main:						
	· Untracht, O. (2011). Jewelry concepts & technology. Doubleday. · Gollberg, J. (2010). The ultimate jeweler's guide: the illustrated reference of techniques, tools & materials. · Morton, P. (1976). Contemporary jewelry: A studio handbook. Holt McDougal.						
	Supporter:						
Lecturer		Ari Dwi Krisbianto, Gunanda Tiara Maharany					
Subject requirements							
Mg To-	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assessm ent Weight (%)
		Indicators	Criteria & Forms	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students are able to recognize materials that can be used as attractive materials in jewelry	Students are able to show attractive materials that have the potential to be packaged in the form of jewelry	Material is a simple material and is around. The challenge is to pack materials that previously didn't look attractive to be packaged into attractive Shape: sketch the material by determining the side of the material point of interest	Lectures, responses and discussions.150 minutes		Untracht, O. (2011), Morton, P (1976) & Gollberg, J. (2010)	5



2	Students know how to use attractive materials and provide protection to jewelry	Students are able to provide alternative techniques for holding attractive materials and connecting with jewelry components	Attractive materials still look dominant. Hold tight and secure Form: discussion and exploration of making alternative holders	Lectures, responses and discussions.150 minutes		Untracht, O. (2011), Morton, P (1976) & Gollberg, J. (2010)	5
3	Students understand the ergonomics of jewelry	Students are able to plan a form of jewelry that is safe to use, both when worn and other people who come into contact	Jewelry is not stuck, stable, balanced and does not hurt Shapes: Reference search and shape exploration	Lectures, responses and discussions.150 minutes		Untracht, O. (2011), Morton, P (1976) & Gollberg, J. (2010)	5
4	Students are able to arrange and carry out stone placement plans (stone setting)	Students are able to arrange stones tightly and use minimal fastening teeth	There is no remaining space between the wide stone and the neatly arranged stone Form: stone structuring practice	Lectures, responses, discussions.150 minutes		Untracht, O. (2011), Morton, P (1976) & Gollberg, J. (2010)	5
5	Students are able to sketch jewelry designs based on jewelry design rules and	Students are able to make clear sketches of shapes, colors, textures and fillings of attractive materials in the field in jewelry	Unbroken connected lines, clear shape, coloring (finishing) and supply Shapes: sketching practice and alternative search for details	Lectures, responses, discussions.150 minutes		Untracht, O. (2011), Morton, P (1976) & Gollberg, J. (2010)	5
6	Students know the components of jewelry	Students are able to determine the components of jewelry to be used and put on a series of jewelry	The components of jewelry are neatly arranged, in accordance with the rules of good shaping Form: the practice of making alternative forms of jewelry	Lectures, responses, discussions.150 minutes		Untracht, O. (2011), Morton, P (1976) & Gollberg, J. (2010)	5



7	Students know the mechanical system in jewelry	Students are able to plan an appropriate mechanical system based on case studies of jewelry shapes	Jewelry is depicted with proportions and visually balanced Shape: sketch of structuring and determining connection points between components	Lectures, responses, discussions.150 minutes		Untracht, O. (2011), Morton, P (1976) & Gollberg, J. (2010)	5
8	Midterm Evaluation / Midterm Exam						15
9	Students are able to practice the application of simple jewelry motion systems	Students are able to use appropriate mechanical systems based on case studies of jewelry shapes	Jewelry can be worn and moved well and balanced Form: the practice of structuring and determining connection points between components	Lectures, responses and discussions.150 minutes		Untracht, O. (2011), Morton, P (1976) & Gollberg, J. (2010)	5
10	Students know the aspects of thickness and distance of arrangement of jewelry components with dimensional purposes for ergonomics and construction	Students know the critical point and can place reinforcement treatment on the side of the jewelry component	Jewelry is balanced and there are additional structures that can be in the form of components or reinforcement planes that are also arranged Shape: alternate sketching and determination of critical points	Lectures, responses, discussions.150 minutes		Untracht, O. (2011), Morton, P (1976) & Gollberg, J. (2010)	5
11	Students are able to explore the shapes and motifs of jewelry	Students are able to make alternative motifs and forms of jewelry	Students are able to design several good and new alternatives in accordance with the rules that have been conveyed Shapes: alternate sketches with detailed motifs	Lectures, responses, discussions.150 minutes		Untracht, O. (2011), Morton, P (1976) & Gollberg, J. (2010)	5



12	Students know the details of the jewelry form	Students are able to present various combinations of jewelry form details	Students are able to sketch shiny, textured, curved, oblique, convex jewelry fields etc. Shape: design sketching practice	Lectures, responses, discussions. 150 minutes		Untracht, O. (2011), Morton, P (1976) & Gollberg, J. (2010)	5
13	Students know the values in jewelry	Students are able to mention the value of jewelry and are able to categorize cases according to value	Students are able to conclude and determine the type of jewelry according to its value Form: discussion	Lectures, responses, discussions.150 minutes		Morton, P (1976)	5
14	Students are able to develop alternative jewelry designs	Students are able to make several types of alternative variations of jewelry shapes and motifs	Students are able to adjust the form of the technical aspects that follow Form: simulation practice	Lectures, responses, discussions.150 minutes		Untracht, O. (2011), Morton, P (1976) & Gollberg, J. (2010)	5
15	Students are able to analyze trends and motifs of jewelry design	Students are able to apply the results of trend analysis and jewelry motifs from other fashion system references	Students are able to present a jewelry that matches and fits with the fashion design that is used as a reference Form: discussion and practice of sketching	Lectures, responses, discussions.150 minutes		Untracht, O. (2011), Morton, P (1976) & Gollberg, J. (2010)	10
16	End of Semester Evaluation / End of Semester Exam						10

**DP234529 ELECTIVE COURSE: TOYS**

	INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code
SEMESTER LEARNING PLAN						
COURSE (MK)	CODE	MK CLUSTER	CREDIT (credit)		SEMESTER	Date of Compilation
ELECTIVE COURSE: TOYS	DP234529	Product Design	T=1	P=4	5	December 25, 2022
AUTHORIZATION 	RPS Developer		RMK Coordinator		Head of Study Program	
	Primaditya		Ari Dwi Krisbianto, S.T., M.Ds.		Bambang Tristiyono, ST., M.Si	
Learning Outcomes (CP)	Study Program CPL charged to MK					
	CPL-4	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.				
	CPL-8	Able and skilled in using design process aids that include: manual or digital equipment according to technology and the times.				
	CPL-9	Able to present ideation design concepts through verbal communication, visual media, and prototypes (Models / mock-ups / prototypes) using various relevant technologies.				
	Course Learning Outcomes (CPMK)					
	CPMK-1	Students have insight into the design and product categories of toys in general				
	CPMK-2	Students are able to conceptualize character designs, visualize and develop them into three-dimensional toy models				
	CPMK-3	Students are able and skilled in using manual or digital equipment when making simple toy products				
	CPMK-4	Students are able to make mock-ups/prototypes of three-dimensional toys manually				
	CPMK-5	Students have oral, written and visual presentation skills when communicating simple toy product designs				



		CPL matrix – CPMK			
		CPMK	CPL-4	CPL-8	CPL-9
		CPMK-1	V	V	
		CPMK-2	V	V	V
		CPMK-3	V	V	V
		CPMK-4	V	V	
		CPMK-5	V	V	
Brief Description MK	Integration of theory & training of aesthetic applications, tri-matra design as well as introduction to product object planning with simple functional aspects.				
Study Material: Learning Material	Introduction to toy design Toy product categories Designer profile & his work Description of character-persona profile Image & mood board Design Ideation Design Development Character poster Manual / digital modeling Prototyping Toy design portfolio				
Book	Main:				
		1. Bou, Louis, We Are Indie Toys: Make Your Own Resin Characters, 2014 2. Budnitz, Paul, I am plastic: the designer toy explosion, Abrams - 2006 3. Hakim, Primaditya, Development of Designer-toy by Utilizing Wood-Waste, 2013 4. Lawson, B., How Designers Think. London: The Architectural Press Ltd, 2012 5. Phoenix, W, Plastic culture: how Japanese toys conquered the world, 2006			
	Supporter:				



		1. Ledden, E., The Presentation Book. London: Pearson, 2017 2. Eissen, Koos & Roselien S., Sketching Product Design Presentation. Amsterdam: BIS Publisher, 2014 3. Leondes, C. T., Computer-Aided Design, Engineering, and Manufacturing: Systems Techniques and Applications, Volume III, Operational Methods in Computer-Aided Design. CRC Press, 2000					
Lecturer		Primaditya					
Subject requirements		None					
Mg To-	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assesment Weight (%)
		Indicators	Criteria & Forms	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students get to know the scope, rules and plans of the Toy Designer Lecture	Students remember the scope, rules and plans of the Designer Toy course	Students can mention the scope, rules and plans of the Designer Toy course	Lectures, responses and discussions.150 minutes			0
2	Students know the types, types, product categories, toy categories in general	Students can remember types, types, product categories, toy categories in general	Students can rewrite a summary of types, types, product categories, toy categories in general in the form of descriptions of 2-4 pages.	Lectures, responses and discussions.150 minutes		Hakim, Primaditya, 2013	5
3	Students know the designer's profile, work and concept of toy products.	Students can remember designer profiles, works and product concepts.	Students can rewrite a summary of the designer's profile, work and concept of their toy products, in a power point presentation format or equivalent, as many as 5-10 slides in	Lectures, responses and discussions.150 minutes		Bou, Louis, 2014 Budnitz, Paul, 2006 Phoenix, W, 2006	5



4	Students apply the stages of compiling archetype and persona descriptions of the characters to be created	Students can compile archetype and persona descriptions of the characters to be created	Students are able to write archetype and persona descriptions of the characters to be created in the form of descriptions of 3-5 pages.	Lectures, responses, discussions. Perform archetype and persona descriptions of characters to be created 150 minutes		Hakim, Primaditya, 2013 Phoenix, W, 2006	5
5	Students apply the stages of making an image board of the characters to be created	Students can compile and assemble image boards of characters to be created	Students are able to create an image consisting of a collection of at least 10 images or photos of reference shapes of the characters to be created	Lectures, responses, discussions. Arrange and assemble an image board of characters to be created in 150 minutes		Ledden, 2017 Eissen, 2014	5
6	Students apply the stages of making a moodboard from the character to be created	Students can compose and assemble moodboards from the characters to be created	Students are able to create a moodboard consisting of a collection of at least 10 visual reference images or photos of the characters to be created	Lectures, responses, discussions. Compose and assemble the moodboard of the character to be created 150 minutes		Ledden, 2017 Eissen, 2014	5
7	Students carry out the visual ideation stage of the character to be created	Students can do visual ideation of the characters created	Students are able to make a minimum of 30 sketches (<i>thumbnail sketches</i>) from characters that will be created a number of 5 A4 things	Lectures, responses, discussions. Explore visual forms 150 minutes		Ledden, 2017 Eissen, 2014	5
8	Students carry out the stages of visual development of the characters created	Students can develop designs from the characters created	Students are able to make at least 15 character drawings with more detail and proportional from the characters created by a number of 3 A4 things	Lectures, responses, discussions. Develop the visual form of the character 150 minutes		Ledden, 2017 Eissen, 2014	7



9	Midterm Evaluation / Midterm Exam						8
10	Students carry out the stages of visual development of the characters created	Students can develop designs from the characters created	Students are able to make at least 7 images look in color with more detail and proportional from the characters created by a number of 3 things A4	Lectures, responses, discussions. Develop the visual form of the character 150 minutes		Ledden, 2017 Eissen, 2014	7
11	Students are able to make character posters	Students can create poster designs from the characters created	Students are able to make visual presentations in the form of posters from characters created in A4 format	Lectures, responses, discussions. Create a character design poster 150 minutes		Ledden, 2017 Eissen, 2014	7
12	Students are able to make Manual / digital modeling	Students can make Manual / digital modeling of the characters created	Students are able to realize character designs in three dimensions with manual techniques or digital modeling	Lectures, responses, discussions. Create three-dimensional modeling of character designs 150 minutes		Leondes, C.T., 2000	8
13	Students apply the Manual / digital modeling stage	Students can make Manual / digital modeling of the characters created	Students are able to realize character designs in three dimensions with manual techniques or digital modeling	Lectures, responses, discussions. Create three-dimensional modeling of character designs 150 minutes		Leondes, C.T., 2000	8
14	Students apply the stages of Manual / digital modeling Prototyping	Students can make Manual / digital modeling of the characters created	Students are able to realize character designs in three dimensions with manual techniques or digital modeling	Lectures, responses, discussions. Create three-dimensional modeling of character designs 150 minutes		Leondes, C.T., 2000	8



15	Students are able to make presentations and character design portfolios	Students can compile all stages of design from character designs created in a design portfolio	Students are able to compile all stages of design from character designs created in a design portfolio consisting of a minimum of 15 pages	Lectures, responses, discussions. Create a designer toy portfolio 150 minutes		Ledden, 2017 Eissen, 2014	8
16	End of Semester Evaluation / End of Semester Exam						8

**DP234530 ELECTIVE COURSE: MEDICAL DEVICES**

	INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code	
SEMESTER LEARNING PLAN							
COURSE (MK)		CODE	MK CLUSTER	CREDIT (credit)		SEMESTER	Date of Compilation
ELECTIVE COURSE: MEDICAL DEVICE		DP234530	Product Design Technology	T=?	P=?	5	Nov 10, 2022
AUTHORIZATION		RPS Developer		RMK Coordinator		Head of Study Program	
		Djoko Kuswanto, ST., M.Biotech.		Djoko Kuswanto, ST., M.Biotech.		Bambang Tristiyono, ST., M.Si.	
Learning Outcomes (CP)	Study Program CPL charged to MK						
	CPL-5	Able to understand and apply knowledge, insight and science related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural, economic and business, entrepreneurship, code of ethics and IPR.					
	CPL-7	Able to research problems, formulate and publish design needs and solutions for the present or future using relevant design and research methodologies.					
	CPL-9	Able to present ideation design concepts through verbal communication, visual media, and prototypes (Models / mock-ups / prototypes) using various relevant technologies.					
	Course Learning Outcomes (CPMK)						
	CPMK-1	Able to understand and apply insights and science related to design reviews, design systems, technological developments for medical device design.					
	CPMK-2	Able to understand and apply insights and knowledge related to economics and business, codes of ethics and IPR, for the design of medical devices					
	CPMK-3	Able to understand the stages of the digital fabrication process for medical device products					
	CPMK-4	Able to understand the design needs of medical devices that are custom and appropriate and can apply them in a limited way through prototypes to users.					



		CPL matrix – CPMK			
		CPMK	CPL-5	CPL-7	CPL-9
		CPMK-1		V	V
		...	V		
			V	V	
		...			
Brief Description MK	This course aims to teach students to know and provide alternative designs for various types of assisitive/adaptive technologies that answer various needs of people with disabilities, appropriate custom medical device technology, understand and be able to perform rapid prototyping & additive manufacturing, as well as an understanding of ethical trials and clinical trials in medical device design				
Study Material: Learning Material	Indonesia Health Profile (MoH) Fractures, Healing and Principles of Management Injury Surveillance Guidelines Medical Device Product Development Process Applying Product Design Methods to Medical Device Design Digital Fabrication: Integrated Digital Design Additive Manufacturing &; Rapid Prototyping IPR & ethical clearances				
Book	Main:				
	Write down the main literature used, including teaching materials compiled by this MK lecturer. Use up-to-date references				
	Supporter:				
	Write down supporting libraries, if any, as literacy enrichment				
Lecturer	Djoko Kuswanto, ST., M.Biotech.				
Subject requirements	CAD				



Mg To-	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assessment Weight (%)
		Indicators	Criteria & Forms	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1							
2							
...							
8	Midterm Evaluation / Midterm Exam						
9							
...							
16	End of Semester Evaluation / End of Semester Exam						

**UG234912 BAHASA INDONESIA**

		SEPULUH NOPEMBER INSTITUTE OF TECHNOLOGY SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, PRODUCT DESIGN STUDY PROGRAM					
COURSE (MK)		CODE	MK CLUSTER		CREDIT (sks)	SEMESTER	Date of Compilation
BAHASA INDONESIA		UG234912	SKPB		2	VI/VII	28 October 2022
AUTHORIZATION 		Developer RP		Coordinator RMK		Head of Study Program	
		Eka Dian Savitri, S.Hum., M.A. Dra. Enie Hendrajati, M.Pd. Dra. Siti Zahrok, M.Pd.		Eka Dian Savitri, S.Hum., M.A.		Bambang Tristiyono, ST., M.Si	
Learning Outcomes (LO)	LO Range						
	S8: Internalizing values, norms, and academic attitude.						
	KU9: Documenting, storing, securing, and recovering data to ensure validity and prevent plagiarism.						
	KU1: Able to apply logical, critical, systematic, and innovative thinking in the context of developing or implementing science and technology that pays attention to and applies humanities values in accordance with their field of expertise.						
	CLO1 / LLO1: Students are able to explain concepts and benefits of understanding the application of academic ethics correctly.						
	CLO2 / LLO2: Students are able to apply reference and citation techniques appropriately.						



	CLO3 / LLO3: <i>Students are able to explain the systematics and formulations of Indonesian used in KTI by paying attention to the rules of grammar, PUEBI, and KBBI.</i> CLO4 / LLO4: <i>Students are able to compile KTI in the title and introduction well as a form of logical, critical, systematic, and innovative logical thinking ability using good and correct Indonesian.</i> CLO5 / LLO5: <i>Students are able to apply logical, critical, systematic, and innovative thinking in the compilation of the KTI results and discussion sections using good and correct Indonesian.</i> CLO6 / LLO6: <i>Students are able to compile KTI conclusions and abstracts well as a form of logical, critical, systematic, and innovative thinking skills using good and correct Indonesian.</i> CLO7 / LLO7: <i>Students are able to present the results of the preparation of KTI properly according to the principles of effective communication.</i>
Short Description Course	<i>The Indonesian language course is one of the general / national compulsory courses, therefore students will explore lecture materials including: (a) academic ethics; (b) referencing techniques; (c) Systematics of Scientific Writing (KTI) and Indonesian language formulations used in KTI with due observance of grammar, PUEBI, and KBBI principles; (d) structuring KTI logically, critically, systematically, and innovatively by using good and correct Indonesian; (e) effective presentation techniques. The material studied is useful in compiling scientific papers in the form of lecture assignments, research reports, as well as competed scientific papers.</i>



Language Tree / Study Materials	1. <i>Academic writing of scientific papers.</i> 2. <i>Reference techniques and Mendeley applications for reference systems.</i> 3. <i>Systematics, writing style, and grammatical rules for the Indonesian language in KTI. Effective presentation.</i>	
References	Main:	1. Alwi, Hasan, 2007, <i>Tata Bahasa Baku Bahasa Indonesia</i>, Third Edition, Balai Pustaka: Jakarta. 2. Director General of Learning and Student Affairs Kemenristekdikti, <i>Indonesian untuk Perguruan Tinggi</i>, 2016, Jakarta, Director General of Belmawa. 3. <i>Kamus Besar Bahasa Indonesia</i> (online or offline), Ministry of Education and Culture of the Republic of Indonesia, https://kbbi.kemdikbud.go.id/ 4. <i>Pedoman Umum Ejaan Bahasa Indonesia</i> (PUEBI), 2016, http://badanbahasa.kemdikbud.go.id/lamanbahasa/sites/default/files/PUEBI.pdf
	Supporter:	Pratapa, Suminar, 2018, <i>Scientific ethics, Copyright, and Plagiarism.</i> Rosmawaty, 2017, <i>Menulis Karya Ilmiah</i>, 2017. The Structure, Format, Content, and Style of a Journal-Style Scientific Paper, Bates Collage, http://jrtd.com/wpcontent/uploads/2018/05/How-to-Write-a-Paper-in-Scientific-Journal-Style-and-Format.pdf
Learning Media	Preliift :	Hardware:
Team Teaching	Eka Dian Savitri, S. Hum., M.A. Dra. Siti Zahrok, M.Pd. Dra. Enie Hendrajati, M.Pd.	
Subject requirements		



Mg Ke-	Final skills at each stage of learning (LLO)	Valuation		Learning Forms, Learning Methods and Mhs Assignments		Learning Materials	Appraisal Weight (%)
		Assessment Indicators	Criteria & Forms of Assessment	(online)	(offline)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)



1 s.d. 2	LLO 1						10
	Students are able to explain concepts and benefits of understanding the application of academic ethics correctly.	1.1 Accuracy explains the concepts of scientific ethics, copyright, and plagiarism 1.2 Accuracy explains the benefits of applying academic ethics	Criteria: Rubrics of understanding academic ethics and plagiarism Nontest techniques: Observation and performance of group discussions on ethics and plagiarism	1. Lecture 2. Group discussions 3. Task 1: Answering material questions of scientific ethics, copyright, and plagiarism	Virtual face-to-face lectures. MyITS-Classroom: synchronous and asynchronous; Group discussions Task 1: Answering material questions of scientific ethics, copyright, and plagiarism	• Lecture contract • The purpose of learning KTl • article "Scientific ethics, copyright, and plagiarism" by Prof. Suminar. • Franz Magnis Suseno's writings "Basic Ethics Problems Pokok Filsafat Moral"	



3 s.d. 4	LLO 2						10
	Students are able to apply reference and citation techniques appropriately.	1.1 Accuracy of tracing credible references 1.2 Accuracy of quoting references correctly	Criteria: Practice rubrics tracing credible references and citing using mendeley Technical nontes Observation and performance Browse credible research articles	• Lecture • Tutorial • Discussion • Task 2 Correctly citing and using references in scientific papers.	• Virtual face-toface lectures. - MyITSClassroom: synchronous and asynchronous • Tutorial • Discussion • Task 2 Correctly citing and using references in scientific papers.	• Types of citations. • Tutorial mendeley: https://www.youtube.com/watch?v=Gv6HuCYExM • Reference search link: http://gen.lib.rus.ec/scimag/	



5 s.d. 6	LLO 3 <i>Students are able to explain the systematics and formulations of Indonesian used in KTI by paying attention to the rules of grammar, PUEBI, and KBBI.</i>	1.1 Accuracy of identifying the systematics of KTI (scientific journal articles) 1.2 Accuracy of identifying the writing style of KTI (scientific journal articles) 1.3 Activeness of group work.	Criteria: <i>Rubric</i> Nontest techniques: <i>1. Observation & performance</i> <i>Identify the systematics of KTI (scientific journal articles).</i> <i>Identifying the cheating style of</i>	• Lectures: • Group discussions. • Task 3: • Review of research articles based on their systematics and writing style. Virtual face-toface lectures. MyITS-Classroom: synchronous and asynchronous; • Group discussions. • Task 3: <i>Reviewing research articles based on their systematics and cheating style.</i> TM = [2mggx(2sksx50")] PT = [2mggx(2sksx60")] BM = [2mggx(2sksx60")]	<i>Material "Writing Scientific Papers" by Prof. Rosmawati (available at MyITSClassroom)</i> <i>Link to writing scientific journal articles:</i>	10



			writing KTI (scientific journal articles).		https://www.youtube.com/watch?v=MTYcPNQzBCq Search for scientific journal articles in www.sciencedirect.com , www.sagepublication.com , www.springer.com , http://sinta.ristekbrin.go.id/journals	



7 s.d. 8	LLO 4	<i>Students are able to compile KTI in the title and introduction well as a form of logical, critical, systematic, and innovative logical thinking ability using good and</i>	1.1 Accuracy of composing the title and introduction containing the background, purpose, and method 1.2 Accuracy of using Indonesian	Criteria <i>Rubric preparation of scientific journal articles in the title and introduction section</i> Nontest technique	- Lecture, - Group discussions - Task 4: Compile essays in the form of titles, backgrounds, objectives, literature reviews / literature	Virtual face-toface lectures. MyITS-Classroom:	Material: -Kamberlis Handout (available in MyITSClassroom)	10



	correct Indonesian.	formulations according to scientific principles Indonesian	Observation and performance Composing the title and introductory chapter	studies, and methods. synchronous and asynchronous; • Group discussion, Task 4: Compile essays in the form of titles, backgrounds, objectives, literature reviews / literature studies, and methods.		
				TM = [2mggx(2sksx50")] PT = [2mggx(2sksx60")] BM = [2mggx(2sksx60")]		



9 s.d. 10	LLO 5 <i>Students are able to apply logical, critical, systematic, and innovative</i>	<i>1.1 Accuracy of compiling results and discussion 1.2 Accuracy of using Indonesian formulations according to scientific principles</i>	Criteria <i>Rubric of preparation of scientific journal articles part of</i>	• Lecture • Group discussions • Task 4: <i>Compile a chapter essay of results and discussion</i>	• Virtual face-toface lectures. MyITS-Classroom: synchronous and asynchronous;	<i>PPT review sample journal articles section results and discussion (available at MyITSClassroom)</i>	10
	<i>thinking in the compilation of the KTI results and discussion sections using good and correct Indonesian.</i>	<i>Indonesian language</i>	<i>results and discussion</i> Nontest technique <i>Observation and performance</i>		• Group discussion, Task 4: <i>Compile chapter essays and discussions.</i>		
				TM = [2mggx(2sksx50’)] PT = [2mggx(2sksx60’)]			



			<i>Compile chapters of results and discussions</i>	BM = [2mggx(2sk sx60")]			
11	LLO 6 <i>Students are able to compile KTI conclusion and abstract parts well as a form of logical, critical, systematic, and innovative logical thinking ability using good and correct Indonesian.</i>	1.1 Accuracy of drawing conclusions 1.2 Accuracy of using Indonesian formulations according to scientific principles Indonesian	Criteria <i>Rubric preparation of scientific journal articles conclusion section</i> Nontest Technique <i>Observation and performance</i> <i>Drafting the conclusion chapter</i>	- Lecture - Group discussions - Task 5: Compiling a conclusion chapter essay	- Virtual face-toface lectures. MyITS-Classroom: synchronous and asynchronous; - Group discussions Task 5; - Compiling a conclusion chapter essay	<i>PPT review sample journal articles conclusion section (available at MyITSClassroom)</i>	10
				TM = [1mggx(2sksx50")] PT = [1mggx(2sksx60")] BM = [1mggx(2sksx60")]			



12 s.d. 14	LLO7 <i>Students are able to present the results of the preparation of KTI properly according to the principles of effective communication.</i>	1.1. Accuracy inexplaining the results of the preparation of scientific papers in accordance with the rules of grammatics, cohesion and coherence, systematic, and interesting. 1.2 Effectiveness of oral communication 1.3 Activeness of group work	Criteria <i>Presentation rubric</i> Nontest technical <i>Observation and performance</i> <i>Make presentations according to the principles of effective communication</i>	• Kuliah,	• Virtual face-toface lectures. MyITS-Classroom: synchronous and asynchronous; • Group discussions. • Presentation: <i>Delivering the results of the preparation of scientific articles, presentations are uploaded to Youtube.</i>	<i>Interesting presentation link:</i> https://www.youtube.com/watch?v=bbz2boNSeL0 https://www.youtube.com/watch?v=NSuJL6xN-!	15



				• Group discussions • Presentation: Convey the results of the preparation of scientific articles. • <i>Lectures,</i> • Group discussions • Presentation: <i>Conveying the results of the preparation of scientific articles.</i>		
				TM = [1mggx(2sksx50'')] PT = [1mggx(2sksx60'')]		
				BM = [1mggx(2sksx60'')]		
16	End of Semester Evaluation					25
Total						100



UG234913 CIVICS

	SEPULUH NOPEMBER INSTITUTE OF TECHNOLOGY SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, PRODUCT DESIGN STUDY PROGRAM					Document Code
SEMESTER LESSON PLAN						
COURSE (MK)	CODE	MK CLUSTER	CREDIT (sks)		SEMESTER	Date of Compilation
CIVICS	UG234913	Compulsory Courses Curriculum <i>Compulsory Curriculum</i>	2 SKS		6/7	
OTORIZATION/ VERIFICATION AUTHORIZATION/ ENDORSEMENT 	RPS Developer Lecturer <i>Semester Lecture Plan Developer Lecturer</i>		Coordinator RMK <i>Course Cluster Coordinator</i>		Head of Study Program	
	Lecturer TEAM		Suarmini		Bambang Tristiyono, ST., M.Si	
Achievements Learning	PLO Program Charged to The Course					



Outcomes	PLO 1 (S3)	Contribute to improving the quality of life in society, nation, state and civilization based on Pancasila.
	PLO 2 (S4)	Acting as citizens who are proud and love the country, have nationalism and a sense of responsibility to the state and nation.
	PLO 3 (S7)	Obeying the law and discipline in social and state life.
	PLO 4 (KU7)	Being responsible for the achievement of group work and supervise and evaluate the completion of work assigned to workers under their responsibility.
	Course Learning Outcome (CLO)	
	CLO 1/LLO1	Mastering the substance of citizenship education to have an Indonesian personality, build a sense of nationality and love the country, so that they become good and educated citizens (smart and good citizen) in the life of a democratic society, nation and state.
	CLO 2/LLO2	Understand the correlation of civic education with the values of life so that becoming a citizen with an Indonesian personality is competitive, disciplined and actively participates in building a peaceful life based on the Pancasila value system.
	CLO 3/LLO3	Able to apply the concept of citizenship to make good citizens who are able to support the nation and state in achieving national goals and to become democratic citizens, namely citizens who are intelligent, civilized and responsible for the survival of the Indonesian state in practicing scientific and technological abilities and his art.
	CLO4/LLO4	Able to contribute in the form of attitudes and values, namely respecting diversity, cooperating, having trustworthiness, social sensitivity and high love for the people, nation and state of Indonesia



Peta CPL – CP MK Map of PLO - CLO	<i>Matrix map between CPL and CPMK (Sub CP MK)</i>			
		CPL1	CPL2	CPL3
CLO 1 / LLO1			√	√
CLO 2 / LLO 2		√	√	√
CLO 3 / LLO 3		√		√
CLO 4 / LLO 4			√	
Short Description of Course	Citizenship (Kwn) basically discusses Indonesia, namely: being a citizen with Indonesian personality, building a sense of nationality and loving the Indonesian homeland, thus will be able to become a good and educated citizen (<i>Smart and good citizen</i>) in the life of society, nation and democratic state			
Study Materials: learning materials	1. The nature and challenges of citizenship for the future of the nation 2. State: Constitution and Democracy 3. National Identity and Integration 4. Law Enforcement: Rights and Duties of Citizens, and Human Rights. 5. Anti-Corruption Education 6. Nusantara Insights and Regional Autonomy 7. National Resilience: The Position of the State in the Global Era and Defending the State			



References		Main:					
		Kemenristekdikti. 2016. Civic Education Module for Higher Education. Jakarta: Director General of Belmawa Kemenristekdikti					
		Supporting:					
		1. Armaidly Armawi, Geostrategi Indonesia, Jakarta, Directorate General of Higher Education, 2006 2. Azyumardi Azra, paradigma Baru Pendidikan Nasional dan Rekontruksi dan Demokratisasi, Kompas Publishers, Jakarta, 2002 3. Bahar, Dr. Saefrodin, “Konteks Kenegaraan, Hak Asasi Manusia, Pustaka Sinar Harapan”, Jakarta, 2000. 4. Kaelan, Pendidikan Kewarganegaraan, UGM Press, Yogyakarta 2005. 5. Slamet Soemiarno, Geopolitik Indonesia, Jakarta, Directorate General of Higher Education, 2006					
Lecturers		Team : Dyah Satya Yoga,Niken Prasetyawati,Ni Wayan Suarmini, Windiani, Tri Widyastuti,Tony Hanoraga,Banu Prastyo, Aurel Ratu,					
Prerequisites							
Mg To-Week..	Final ability of each learning stage (LLO)	Assessment		Form of Learning; Learning Method; Student Assignment; [Estimated Time]	Learning Material	Weight Assessment n (%) Assesment Load (%)	
		Indicator	Criteria & Techniques				



(1)	(2)	(3)	(4)	Offline (5)	Online (6)	(7)	(8)
1-4	CLO 1/LLO1: <i>Mastering the substance of citizenship education to have an Indonesian personality, build a sense of nationality and love the country, so that they become good and educated citizens (smart and good citizen) in the life of a democratic society, nation and state.</i>	<i>Performance, accuracy of collecting tasks</i>	<i>Rubric Instrument Techniques; Non-Test (Observation, presentations and assignments)</i>	TM: (8x50 min)	Synchronous /Unsynchronous Learning Link : https://classroom.its.ac.id/	<i>Lecture Contract: Types of evaluation and reference, forming groups.</i>	19
		<i>Presentation</i>		Lecture Contract Group formation Various lectures Problem solving		<i>The essence and challenges of KWN for the future of the nation</i> <i>Definition of Nation and State, the nature of the nature of the</i>	



				Task 1 (Individual): analyze cases with themes according to the material		• state and the purpose of the state. The constitution, values and constitutional norms • of the 1945 Indonesian Constitution and Constitution, constitutional values • and norms of the 1945 Constitution of the Republic of Indonesia and	



				Task 2 (Group) <i>analyzes cases on a national scale with a theme according to the material</i>		• constitutionality per law under the 1945 Constitution • <i>Institutions and relationships between state government agencies and local government systems.</i> • The theory and concept of Indonesian democracy is based on Pancasila and	



						the 1945 Constitution.	

						- Indonesian democracy based on Pancasila and the 1945 Constitution. - The essence of democracy as a value system and political system, political parties, elections and	



						<i>representative systems, democratic education</i>	
						• <i>National identity as one of the determinants of national</i> • <i>development and national character</i> <i>The urgency of</i>	



						<i>national integration as one of the parameters of national unity and integrity</i>	



5-7	CLO 2/LLO2: Understand the correlation of civic education with the values of life so that becoming a citizen with an Indonesian personality is competitive,	<i>Forms of cooperation, social sensitivity.</i> <i>Performance, suitability of the work with the theme</i> <i>Presentation</i>	<i>Rubric Instrument</i> <i>Technique: Non Test (questions and answers, attitude, discussion, presentation, Essay Assessment</i>	<i>TM; (6x50 min)</i> <i>Lectures: Lectures vary</i> <i>Problem solving</i> Task 2 (Group) make papers with a case study theme according to the material	Synchronous /Unsyncronus Learning Link : https://classroom.its.ac.id/	• <i>Law enforcement : Legal Certainty and Justice</i> • <i>Rights and Duties of the State and Citizens, Dynamics, Challenges of the rights and obligations of the State and Citizens</i>	13



	<i>disciplined and actively participates in building a peaceful life based on the Pancasila value system.</i>					• <i>Recognition of Dignity and Equal Rights (HAM)</i>	
8	CLO 1/LLO1 and CLO2/LLO2	Ujian Tengah Semester/ Midterm examination					15



9-12	CLO 3/LLO3: <i>Able to apply the concept of citizenship to make good citizens who are able to support the nation and state in achieving national goals and to become democratic citizens, namely citizens who are intelligent, civilized and responsible for the survival of the Indonesian state in practicing scientific and technological abilities and his art.</i>	<i>Understanding diversity</i> <i>Show work, cooperate</i> <i>Understanding content</i> <i>Field findings</i>	<i>Instrument:</i> <i>Rubric</i> <i>Technique:</i> <i>Observation</i> <i>Discussion,</i> <i>Presentation</i> <i>Essay</i> <i>assessment,</i> <i>project</i> <i>assessment</i>	<i>TM; (8x50 min)</i> <i>Studying; various</i> <i>lectures</i> <i>Problem Solving</i> Task1 (Individual) <i>Analyze cases with</i> <i>themes according</i> <i>to the material</i> Task 3 (Group) <i>Project: survey</i> <i>with a theme</i> <i>according to the</i> <i>material</i>	Synchronous /unsynchronous Learning Link : https://classroom.its.ac.id/ (2x 50 mnt)	• <i>Anti-corruption education to create civilized and responsible</i> • <i>Citizens for the survival of the Indonesian nation and state.</i> • <i>Corruption laws and regulations.</i>	20



						• <i>Indonesian archipelago insight as a collective conception and viewpoint of the Indonesian nationality in the context of world relations</i> • <i>regional autonomy in the context of the unity of the Indonesian nation</i>	



13-15	CLO 4/LLO4 <i>Able to contribute in the form of attitudes and values, namely respecting diversity, cooperating, having trustworthiness, social sensitivity and high love for the people, nation and state of Indonesia</i>	<i>Understanding content</i> <i>Work method</i> <i>Cooperation</i> <i>Project related findings.</i>	<i>Rubric Instrument</i> <i>Techniques:</i> <i>Nontest (question and answer, attitude, discussion, presentation, essay assessment, project assessment, presentation)</i>	<i>TM; (6x50 min)</i> <i>Studying; Lecture</i> <i>Discussion / Debate / role play / Problem & Solving</i> <i>Task 3 (Group):</i> <i>Project to make a video / with a theme according to the material</i>	Synchronous /Unsyncronus Learning Link : https://classroom.its.ac.id/ [6X50 min)	<i>National resilience and state defense in building a collective national commitment.</i> <i>Challenges of national security and national defense in the global area</i>	18
16	CLO 3/LLO3 and CLO 4/LLO4	FINAL EXAMS					15

**UG234916 TECHNOLOGY APPLICATIONS AND DIGITAL TRANSFORMATION**

		INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FAKULTAS DESAIN KRETIF DAN BISNIS DIGITAL, PRODI DESAIN PRODUK				
COURSE (MK)		CODE	MK CLUSTER	CREDIT (sks)	SEMESTER	Date of Compilation
TECHNOLOGY APPLICATIONS AND DIGITAL TRANSFORMATION		Kode MK UG. 184916	SPKB	3 SKS	6 dan 7	Tgl revisi / penyusunan RPS
AUTHORIZATION		RP Developer		RMK Coordinator	Ka PRODI	
		1. Dra. Sukriyah Kustanti Moerad.MSi. 2. Dra, Endang Susilowati, M.Kes. 3. Lienggar Rahardiantino, SE.,M.Sc. 4. Deti Rahmawati, S.IP. M.T 5. Dr. Tridani Widyastuty, MSi.MT 6. Yudha Prasetyawan, ST. M.Eng. 7. Endarko, MSi. Ph.D 8. Gogor Arif Handiwibowo, ST.,MMT 9. Lissa Rosdianna ST.,MT 10. Gita Widi Bhawika, ST.,MT 11. Dr. Dra. Dian Saptarini, MSc. 12. Herdayanto S Putro, SSi, MSi. 13. Zjahra Vianita Nugraheni, SSi.,MSi. 14. Moh Singgih Purwanto, SSi.,MT. 15. Dr. Ir. Lily Pudjiastuti, MT. 16. Dr.Ir. Hasan Ikhwani, MSc. 17. Dr.Ir. Niniek Fajar Puspita, M.Eng.		Dra. Sukriyah Kustanti Moerad, MSi	Bambang Tristiyono, ST., M.Si	



		18. Dyah Savitri, ST.,MT 19. Dr. Irhamah SSi., MSi. 20. Ir. Eko Nurmianto, M.Eng., Sc. 21. M. Riduwan, S.Kom.M. Kom.		
		22. Ir. Arief Abdurachman, MT. 23. Dr. Atria Pradityana, ST. MT. 24. Ciptian Weried P, SST., 25. Ir. Joko Susilo, MT 26. Ir. Arief Musthofa , MT. 27. Muhammad Hafiihz Imaaduddiin, MT.		
Learning Outcome	CPL-PRODI			
	CPL	Description Learning outcomes		
	S6	Able to cooperate and have social sensitivity, as well as concern for the community and the environment		
	KU1	Able to apply logical, critical, systematic, and innovative thinking in the context of the development or implementation of science and technology that pays attention to and applies humanities values in accordance with their field of expertise		
	KU3	Able to use Technology Applications for the development or implementation of science and technology based on scientific rules, procedures and ethics in order to produce solutions, and ideas		
	KU4	Able to compile a final report / Proposal or research / innovation project / Student Creativity Program (PKM).		
	CP MK			



CP MK	Description CPMK
CPMK 1	Students understand the outline of the lecture from beginning to end, are able to understand the Knowledge and Concepts of Digital Literacy by thinking systematically in solving general problems properly and correctly
CPMK 2	Students able to utilize research centers both locally and nationally with technological applications and innovative products that are competitive
CPMK 3	Able to have conservation insights into natural and human resources in applying science and technology for the benefit of Sustainable Development with SDG's Theories and Concepts.
CPMK 4	Able to complete the making of Student Creativity Program Proposals (PKM) and similar programs in preparing project-based innovations along with PKM Proposal Outputs (Articles, Posters and Videos)

Brief description of the course	The Technology Application and Digital Transformation Courses (APTEKTRANSIDI) is one of the Institute's content courses that must be taken. This course is an ITS character, which will inspire students in developing insights into science, technology and innovative products that are competitive and the form of application in society and the environment. Students will receive material 1) Digital Literacy Knowledge and Concepts; 2) Systems Theory and Systemic Thinking; 3) Knowledge of the National Research Roadmap and ITS; 4) Introduction to Science Technopark (STP); 5) Knowledge and Concepts of Sustainable Development Goals (SDGs); 6) Opensource Mobile Application Technology, E Commerce; 7) Creative and Innovative Knowledge; and 8) Making Proposals for Student Creativity Programs (PKM) and similar programs in preparing project-based innovations along with PKM Proposal Outputs (Articles and Videos). At the end of the lecture, students are able to compile a Student Creativity Program Proposal (PKM) based on the knowledge that has been given in this lecture. The benefits of learning the APTEKTRANSIDI Course are: Students are able to explain, explain and implement problems in society and the



	environment with a Technology Application approach and expertise in their fields in accordance with the principles in the APTEKTRANSIDI teaching material.	
Subject Matter / Study Material	The material of the Technology Application and Digital Transformation course is 1. Digital Literacy Knowledge and Concepts 2. Theory of Systems Thinking and Information Transformation 3. Introduction and Knowledge of Science Technopark (STP) 4. Knowledge of ITS and National Research Roadmaps 5. The concept of SDGs (Sustainable Development Goals) 6. Open Source Technology and IT Ethics 7. Student Creative Program Proposal Concept (PKM)	
Bibliography	Main:	



1. Digital Literacy : Tools and Methodologies for Information Society. Pier Casera Rivoltella, Universitas Cottoica del Sacro Cuore, Italy
2. Akhmad Hidayatno, “BERPIKIR SISTEM”, Pola Pikir Untuk Pemahaman Masalah Yang Lebih baik. 2016. Universitay of Indonesia.
3. Gerakan Literasi Nasional, Kementrian Pendidikan dan Kebudayaan Jakarta, 2017
4. Buku Tim Pengembang Mata Kuliah Wawasan Teknologi dan Komunikasi Ilmiah , “Wawasan Teknologi & Komunikasi Ilmiah”, ITS Press, Surabaya, 2015.
5. Alfred Watkins and Michel Ehst, “Science, Technology and Innovation: Capacity Building for Sustainable Growth and Poverty Reduction”, The International Bank for Reconstruction and Development, Washington DC, 2008.
6. Frieder Meyer Krahmer, “Innovation and Sustainable Development-Lesson for Innovation Policies, “ A Springer-Verlag Company, Heidelberg, 1998.

7. Book : ARAHAN Pelaksanaan Tujuan Pembangunan Berkelanjutan/SDGsTeam Leader Sekretariat SDGs Kementerian PPN/Bappenas, 1 Februari 2018, Alamat Kontak: Website : sdgs.bappenas.go.id

Supporting :

1. ..
- 2.

Learning Media		Software:		Hardware:			
Team Teaching							
Subject							
Week-	Final ability at each stage of learning	Evaluation		Forms of Learning, Learning Methods and	Learning Materials	Bobot Penilaian	Lecture r



	(Sub-CP-MK)			Assignments Students			(%)	
		assessment indicators	Criteria & Forms of Assessment	Daring (online)	Luring (offline)			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
1	CPMK1 : Students understand the outline of the lecture from beginning to end, are able to understand the Knowledge and Concepts of Digital Literacy by thinking systematically in solving general problems properly and correctly Students are able :	Digital Literacy Knowledge and Concepts : Students able to analyze the concept of digital literacy Students able to analyze the concept of Social Networking, Transliteracy, Cybercrime, Digital identity	Criterion: Able to find Examples the problem that can be resolved with Digital Literacy Knowledge Bentuk penilaian :	My ITS Classroom TM = 3x50 menit PT = 1 x 60” BM = 1x60” Learning methods: Lectures small Group Discussion Frequently Asked Questions 2x 50 minutes : Lectures/Lectures 1 x50 minutes : Dskusi		Digital Literacy Knowledge and Concepts	0%	Class lecturers



	• Understand the outline of lectures • Able to explain						

	Digital Literacy Knowledge and Concepts						
2	CPMK1 : Students understand the	Being able to find examples the problem can be	Kriteria : Mampu menemukan	My ITS Classroom			5% Class lecturers



	outline of the lecture from beginning to end, are able to understand the Knowledge and Concepts of Digital Literacy by thinking systematically in solving general problems properly and correctly baik dan benar Students are able to explain the concept of systematic thinking in solving common problems	resolved with the concept of the system	contoh-contoh permasalahan yang dapat diselesaikan dengan konsep, system Bentuk penilaian :	TM = 3x50 menit PT = 1 x 60" BM = 1x60" Learning methods: Lectures small Group Discussion Frequently Asked Questions 2x 50 minutes : Lectures/Lectures 1x50 minutes : Dskusi	Systems Theory and Think Systemic			
3	CPMK2:		Kriteria :	My ITS Classroom		Knowledge Roadmap	0%	DRPM Lecturer



	Students able to utilize research centers both locally and nationally with	Able to discuss with groups problems that it's in the Centres Good research National as well as research at ITS	Mampu menemukan permasalahan yang ada di Pusat- Pusat Penelitian baik Nasional maupun			National Research and ITS		
	technological applications and innovative products that are competitive Students Able to utilize Research Centers at ITS and National		penelitian di ITS Bentuk penilaian	TM = 3x50 menit PT = 1 x 60" BM = 1x60"				
4	CPMK2: Students able to utilize research	Conducting group discussions to analyze Science Technopark	Kriteria : Able to find Examples the problem that	My ITS Classroom		Introduction to Science Technopark		Class Lecturer



	centers both locally and nationally with technological applications and innovative products that are competitive Students understand the problems in their environment with the Technology Application approach	(STP) Knowledge)	can be resolved with the concept of Knowledge Science Techno Park (STP) Bentuk penilaian	TM = 3x50 menit PT = 1 x 60" BM = 1x60" Learning methods: Lectures small Group Discussion Frequently Asked Questions 2x 50 minutes : Lectures/Lectures 1x50 minute s : Dskusi		(STP)		
5	CPMK 3 : Able to have	Conduct discussions with groups to find problems	Kriteria : Able to find each example	My ITS Classroom		Theory and Concept of Sustainable	5%	Class Lecturer



	conservation insights into natural and human resources in applying science and technology for the benefit of Sustainable Development with SDG's Theories and Concepts. -Students can explain problems in the environment with the Sustainable Development Approach	according to aspects of the SDG's.	existing problems as per the aspects in SDG's Bentuk penilaian	TM = 3x50 menit PT = 1 x 60" BM = 1x60" Learning methods: Lectures small Group Discussion Frequently Asked Questions 2x 50 minutes : Lectures/Lectures 1x50 minutes : Dskusi		Development Goals (SDGs)		
6	CPMK 3: Able to have conservation	Able to discuss with groups in Using WordPress CMS to	Criterion: Able to use Opensource Technology And	My ITS Classroom		Opensource Technology Mobile Applications, E	0%	Class Lecturer



	insights into natural and human resources in applying science and technology for the benefit of Sustainable Development with SDG's Theories and Concepts. Students Able to utilize opensource technology and	create, Videos, websites / web blogs, as well as E. Commerce Mobile Applications	Ecommerce mobile app to finish problems in society and the environment Bentuk penilaian	TM = 3x50 menit PT = 1 x 60" BM = 1x60" Learning methods: Lectures small Group Discussion Frequently Asked Questions 2x 50 minutes : Lectures/Lectures	Comerce		
	simple mobile applications			1x50 minutes : Dskusi			
7	CPMK2:	Conduct discussions with groups to find	Criterion: Able to find research results both nationally, ITS, and	My ITS Classroom	Knowledge of Roadmap	0%	DRPM Lecturer



	Students able to utilize research centers both locally and nationally with technological applications and innovative products that are competitive Students Able to utilize Research Centers at ITS and National	research problems according to the selected aspects	internationally with Innovation approach Bentuk penilaian	TM = 3x50 menit PT = 1 x 60" BM = 1x60" Learning methods: Lectures small Group Discussion Frequently Asked Questions 2x 50 minutes : Lectures/Lectures 1x50 minutes : Dskusi		National Research and ITS		
8	CPMK2: Students able to utilize research centers both locally and nationally with technological applications and	Conduct discussions in solving problems with innovative creative approaches.	Criterion: Able to find each example of existing problems according to creativity and innovative aspects Bentuk penilaian	My ITS Classroom TM = 3x50 menit PT = 1 x 60" BM = 1x60" Learning methods: Lectures small Group		Creative and Innovative Knowledge	0%	STP Lecturer



	innovative products that are competitive Able to make creative, innovative thinking concepts based on science technology			Discussion Frequently Asked Questions 2x 50 minutes : Lectures/Lectures 1x50 minutes : Dskusi				
9	Students Able to do the Midterm Exam well and on time	Doing the Midterm Exam questions (UTS)	Able to work Middle Exam questions Semester (UTS) well and On time		3 x 50 minutes	Midterm	25%	Class Lecturer
10	CPMK 4: Able to complete the making of	Conduct discussions with groups to find PKM Proposal Topics	Kriteria : Able to conduct group discussions in class to produce PKM Proposal Topics	My ITS Classroom	3 x 50 minute : Discussion of PKM proposals	Discussion on Pkm Proposal Guidance	0%	Class Lecturer



	Student Creativity Program Proposals (PKM) and similar programs in preparing projectbased innovations along with PKM Proposal Outputs (Articles, Posters and Videos).		Bentuk penilaian	TM = 3x50 menit PT = 1 x 60” BM = 1x60” Learning methods: Lectures small Group Discussion Frequently Asked Questions 2x 50 minutes : Lectures/Lectures 1x50 minutes : Dskusi				
	Students know the problem real in the surrounding environment							
11	CPMK 4: Able to complete the	Conducting discussions with the group Of work	Kriteria : Able to present group work results with good	My ITS Classroom		Presentation of pkm proposal	10%	Class Lecture r



	making of Student Creativity Program Proposals (PKM) and similar programs in preparing projectbased innovations along with PKM Proposal Outputs (Articles, Posters and Videos). Able to complete the making of Student Creativity Program (PKM) Proposals and similar	results of making PKM Proposals with PPT	coordination, and on time. Bentuk penilaian	TM = 3x50 menit PT = 1 x 60" BM = 1x60" Learning methods: Lectures small Group Discussion Frequently Asked Questions 2x 50 minutes : Lectures/Lectures : Dskusi 1x50 minute	group work in ppt form		



	programs in preparing innovation-based projects along with PKM Proposal Outputs (Articles, Posters and Videos)						



12	CPMK 4: Able to complete the making of Student Creativity Program Proposals (PKM) and similar programs in preparing projectbased innovations along with PKM Proposal Outputs (Articles, Posters and Videos).	Conducting discussions with the group Of work results of making PKM Proposals with PPT	Kriteria : Able to present group work results with good coordination, and on time Bentuk penilaian	My ITS Classroom		Presentation of pkm proposal group work in ppt form	10%	Class Lecture r



	Able to complete the making of Student Creativity Program (PKM) Proposals and similar programs in preparing innovation-based projects along with PKM Proposal Outputs (Articles, Posters and Videos).			TM = 3x50 menit PT = 1 x 60” BM = 1x60” Learning methods: Lectures small Group Discussion Frequently Asked Questions 2x 50 minutes : Lectures/Lectures 1x50 minutes : Dskusi				
13	CPMK 4:	Conducting discussions with the group Of	Kriteria :	My ITS Classroom		Presentation of pkm proposal group	10%	Class Lecture



	Able to complete the making of Student Creativity Program	work results of making PKM Proposals with PPT	Able to present group work results with good coordination, and on time. Bentuk penilaian	TM = 3x50 menit PT = 1 x 60” BM = 1x60”	work in Power Point		r
	Proposals (PKM) and similar programs in preparing projectbased innovations along with PKM Proposal Outputs (Articles, Posters and Videos). Able to complete the making of Student Creativity Program (PKM) Proposals and similar programs in preparing innovation-based			Learning methods: Lectures small Group Discussion Frequently Asked Questions 2x 50 minutes : Lectures/Lectures 1x50 minutes : Dskusi			



	projects along with PKM Proposal Outputs (Articles, Posters and Videos).							
14	Able to complete the making of	Conducting discussions with groups for the	Kriteria : Able to complete	My ITS Classroom		Guidance on Making Articles and	20%	Class Lecturer
	Student Creativity Program (PKM) Proposals and similar programs in preparing innovation-based projects along with PKM Proposal Outputs (Articles, Posters).	creation of PKM Articles and Proposal Posters	results of group work in the form of Articles and Posters Bentuk penilaian	TM = 3x50 menit PT = 1 x 60" BM = 1x60" Learning methods: Lectures small Group Discussion Frequently Asked Questions 2x 50 minutes : Lectures/Lectures 1x50 minutes : Dskusi		Posters from PKM Proposals		



15	CPMK 4: Able to complete the making of Student Creativity Program Proposals (PKM) and similar programs in preparing projectbased innovations along with PKM Proposal Outputs (Articles, Posters and Videos). -Able to complete the making of Student Creativity Program (PKM) Proposals and	Conducting discussions with the group to discuss the results of the work of making a PKM Proposal video	Kriteria : Able to complete results of group work in the form of Articles and Posters Bentuk penilaian	My ITS Classroom	Guidance on Making Videos from PKM Proposals and Collecting Final Proposals, Artikrl, Posters and Videos from PKM	15%	Class Lecturer
				TM = 3x50 menit PT = 1 x 60" BM = 1x60" Learning methods: Lectures small Group Discussion Frequently Asked Questions 2x 50 minutes : Lectures/Lectures 1x50 minutes : Dskusi			



	similar programs in preparing innovation-based projects along with PKM Proposal Outputs (Videos).						



16	CPMK 4 : Able to complete the making of Student Creativity Program Proposals (PKM) and similar programs in preparing projectbased innovations along with PKM Proposal Outputs (Articles, Posters and Videos). Able to complete the making of Student Creativity Program (PKM) Proposals and	Conducting discussions with groups for the collection of assignments2 aptektransidi courses	Proposal Evaluation	My ITS Classroom s		Final Proposals, Artikrl, Posters and Videos from PKM	0%	Class Lectur er



	similar programs in preparing innovation-based projects along with PKM			TM = 3x50 menit PT = 1 x 60" BM = 1x60" Learning methods: Lectures small Group Discussion Frequently Asked Questions 2x 50 minutes : Lectures/Lectures 1x50 minutes : Dskusi			
	Proposal Outputs (Videos).						
Total						100%	

**DP234631 ENRICHMENT: PRODUCT PLANNING**

	SEPULUH NOPEMBER INSTITUTE OF TECHNOLOGY SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code
SEMESTER LEARNING PLAN						
COURSE (MK)	CODE	MK CLUSTER	CREDIT (credit)		SEMESTER	Date of Compilation
PRODUCT PLANNING	DP234631	Product Design and Business Management	T=2	P=4	4	November 10, 2023
AUTHORIZATION 	RPS Developer Gunanda Tiara Maharany, S.Ds., M.Ds.		RMK Coordinator Arie Kurniawan, S.T, M.Ds		Head of Study Program Bambang Tristiyono, ST., M.Si.	
Learning Outcomes (CP)	Study Program CPL charged to MK					
	CPL-3	Able to manage self-learning, and develop themselves as lifelong learners to compete at the national, and international levels, in order to make a real contribution to solving problems by implementing information and communication technology and paying attention to sustainability principles and understanding technology-based entrepreneurship.				
	CPL-5	Able to understand and apply knowledge, insight and science related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural, economic and business, entrepreneurship, code of ethics and IPR.				
	CPL-7	Able to research problems, formulate and publish design needs and solutions for the present or future using relevant design and research methodologies.				
	Course Learning Outcomes (CPMK)					
	CPMK-1	Students are able to understand and explain the objectives, important aspects and scope of the industrial product design and development process				
	CPMK-2	Students are able to explain the various components inherent in a product.				
	CPMK-3	Students are able to identify, determine and analyze new opportunities for innovative product development				
	CPMK-4	Students are able to apply ideation methods, customer journey mapping to become finished products.				
CPMK-5	Students are able to understand and carry out the process of product design and development starting from the planning phase, design to the product launching phase					



		CPL matrix – CPMK			
		CPMK	CPL-3	CPL-5	CPL-7
		CPMK-1	V	V	
		CPMK-2	V	V	V
		CPMK-3	V	V	V
		CPMK-4	V	V	
		CPMK-5	V	V	
Brief Description of MK	Courses that study the stages of designing and developing products starting from the process of identifying market needs, product design processes, developing alternative concepts, to producing products that are in accordance with market needs and technological innovation				
Study Material: Learning Material	• Product design and planning process • Design development process • Design evaluation • Recent issues of product design and development				
Book	Main:				
		• Ulrich, K.T, Eppinger, S.D., Product Design & Development, 7nd Edition, McGrawHill, 2020 • Dormer, Peter, "The Art of the Maker: Skill and Its Meaning in Art, Craft, and Design", Thames and Hudson, 1994. • Walker, Stuart, "Sustainable by Design: Explorations in Theory and Practice" Earthscan, 2006			
	Supporter:				
		• Otto, K.N. and Wood, K.L, Product Design: Techniques in Reverse Engineering and New Product Development, Prentice Hall, 2001 • Cross, Nigel. Engineering Design Methods: Strategies for Product Design. York; John Wiley & Sons, 1996.			
Lecturer	-				
Subject requirements	None				



Mg To-	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assessment Weight (%)
		Indicators	Criteria & Forms	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Course Introduction	Students know and understand the content and rules of the lectures that will be followed	Criterion: Accuracy and insight Shape: Non test	Shape: Lecture Discussion Method: Response Assignment: - Estimated time : 1x3x50'		Introduction to lectures (Course description, lecture rules)	
2	Design-style way of thinking	Understand creative and unique ways of solving problems	Criterion: Accuracy and insight Shape: Non test	Shape: Lecture Discussion Method: Response Assignment: - Estimated time : 1x2x50'		Design concepts and creative thinking to solve problems Book: Dormer, Peter, "The Art of the Maker: Skill and Its Meaning in Art, Craft, and Design", Thames and Hudson, 1994.	



3	<i>Product Design and Development</i>		Criterion: Accuracy and insight Shape: Non test	Shape: Lecture Discussion Method: Response Assignment: - Estimated time : 1x2x50'		• Scope of product design and development • Definition and understanding of some basic concepts related to product, design and product design and development processes. • Product Functions and Added Value • Characteristics of successful product development, • Challenges in product development	
4	<i>Breakthrough and Opportunity Exploration</i>	Students are able to identify, determine and analyze new opportunities for innovative product development.	Criterion: Accuracy and insight Shape: Non test	Shape: Lecture Discussion Method: Response Assignment: -		• Innovative idea • Breakthrough concept • Successful Product • The Blue Ocean Concept in Product Innovation	



				Estimated time : 1x2x50'			
5	<i>Product Planning I</i>	Students are able to understand and explain the objectives, important aspects and scope of the industrial product design and development process	Criterion: Accuracy and insight Shape: Non test	Shape: Lecture Discussion Method: Response Assignment: Students conduct user identification and evaluation exercises by applying knowledge of user analysis methods that have been learned Estimated time : 1x2x50'		• Design Thinking • Product planning process • Business landscape and its challenges • Market Analysis and opportunities • Product Development Strategy and Process • Generic development process • Product development team Product development organization	
6	<i>Product Planning II</i>	Students are able to understand and explain the objectives, important aspects and scope of the industrial product design and development process	Criterion: Accuracy and insight Shape: Non test	Shape: Lecture Discussion Method: Response Assignment: -		• Design Thinking • Product planning process • Business landscape and its challenges • Market Analysis and opportunities	



				Estimated time : 1x2x50'		• Product Development Strategy and Process • Generic development process • Product development team Product development organization	
7	<i>Understanding the Customer Needs</i>		Criterion: Accuracy and insight Shape: Non test	Shape: Lecture Discussion Method: Response Assignment: Estimated time : 1x2x50'		• Voice of customer (VOC) • Customer Journey Mapping • Ethnography	
8	Midterm Evaluation / Midterm Exam						
9	<i>Product Planning Development Economy</i>	Students are able to evaluate the trade off cost against quality in product specifications.	Criterion: Accuracy and insight Shape: Non test	Shape: Lecture Discussion Method: Response		• Market analysis and determination of production volumes • Economic analysis of product concept	



				Assignment: Students conduct exercises to identify the operational functions of an interactive product based on the principles and requirements of interactivity.	development (COGS)	
				Estimated time : 1x2x50'		
10	<i>Design for Assembly I</i>		Criterion: Accuracy and insight	Shape: Lecture Discussion	• Product Architecture • Design For Manufacturin • Design For Assembly • Design For X	
			Shape: Non test	Method: Response		
				Assignment: -		
				Estimated time : 1x2x50'		
11	<i>Design for Assembly II</i>		Criterion: Accuracy and insight	Shape: Lecture Discussion	• Product Architecture • Design For Manufacturin • Design For Assembly	
			Shape: Non test	Method: Response		
				Assignment: -	Design For X	

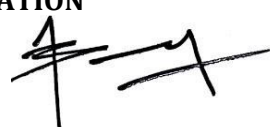


				Estimated time : 1x2x50'		
12	<i>Concept of Product</i>	Sharpen and propose creative ideas resulting from joint brainstorming on the reality of related product design planning problems .	Criterion: Accuracy and insight Shape: Non test	Shape: Lecture Discussion Method: Response Assignment: Students conduct interactive product proposal making exercises based on aspects of the <i>Interaction Design</i> process that have been learned Estimated time : 1x2x50'	Brainstorming concept maturation and design proposals Book: Walker, Stuart, "Sustainable by Design: Explorations in Theory and Practice" Earthscan, 2006	
13	<i>Product Planning Presentation I</i>	Students are able to review and convey the product solutions they produce.	Criterion: Accuracy and insight Shape: Presentation	Shape: Lecture Discussion Method: Presentation Assignment: - Estimated time : 1x2x50'	• Able to present and discuss group ideas • Understand the complexity of problems in product planning	



14	<i>Product Planning Presentation II</i>	Students are able to review and convey the product solutions they produce.	Criterion: Accuracy and insight Shape: Presentation	Shape: Lecture Discussion Method: Presentation Assignment: - Estimated time : 1x2x50'	• Able to present and discuss group ideas • Understand the complexity of problems in product planning	
15	<i>Closing course</i>	Evaluation of lecture materials and discussion	Criterion: Accuracy and insight Shape: Presentation	Shape: Lecture Discussion Method: Presentation Assignment: - Estimated time : 1x2x50'	Review tasks and implementation on product planning practices	
16	End of Semester Evaluation / End of Semester Exam					

**DP234632 PRODUCT DESIGN STUDIO 4**

	INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code	
SEMESTER LEARNING PLAN							
RACE (MK)	CODE	MK CLUSTER		CREDIT (sks)		SEMESTER	Date of Compilation
PRODUCT DESIGN STUDIO 4	DP234632	Product Planning		Theory = 1	Practice = 6	7	December 30, 2022
AUTHORIZATION 	RPS Developer Dr. And Windharto, DEA		Coordinator RMK Ari Dwi Krisbianto, S.T, M.Ds			Head of Study Program Bambang Tristiyono, ST., M.Si	
Learning Outcomes (CP)	CPL-PRODI charged to MK						
	CPL-3	V	Able to manage self-learning, and develop themselves as lifelong learners to compete at national, and international levels, in order to make a real contribution to solving problems by implementing information and communication technology and paying attention to sustainability principles and understanding technology-based entrepreneurship.				
	CPL-4	V	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.				
	CPL-5	V	Able to understand and apply knowledge, insight and science related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural, economic and business, entrepreneurship, code of ethics and IPR.				
	CPL-6	V	Able to design products and systems with consideration of all aspects that influence them, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.				
CPL-7	V	Able to research problems, formulate and publish design needs and solutions for the present or future using relevant design and research methodologies.					



	CPL-8	V	Able and skilled in using design process aids that include: manual or digital equipment according to technology and the times.						
	CPL-9	V	Able to present ideation design concepts through verbal communication, visual media, and prototypes (Models / mock-ups / prototypes) using various relevant technologies.						
	Course Learning Outcomes (CPMK)								
	CPMK-1	Product planning - Able to compile design concepts by identifying the source of the problem, analyzing, and synthesizing needs by considering aesthetic aspects, user comfort and safety on a product.							
	CPMK-2	Able to determine DR&O, Platform, technical specifications and concepts in product design or design along with analysis and related design methodologies							
	CPMK-3	Able to propose the best solution by evaluating alternative-designs, conducting tests and refining solutions to solve design problems based on user, operational, manufacturing, and production efficiency considerations.							
	CPMK-4	In-depth design and visualization skills 2 and 3 complemented by other design documents							
CPMK-5	Visual presentation of product design well with complete design in the form of scale models or prototypes, portfolios, animations and working drawings								
		Matrik CPL – CPMK							
		CPMK	CPL-3	CPL-4	CPL-5	CPL-6	CPL-7	CPL-8	CPL-9
		CPMK-1	V	V	V	V	V		
		CPMK-2	V	V	V	V	V		
		CPMK-3	V	V	V	V	V		
		CPMK-4	V			V		V	V
		CPMK-5	V					V	V
Brief Description MK	PRODUCT DESIGN STUDIO 4 is a core course that emphasizes knowledge, insight and expertise in product design and its systems by considering the complex aspects that accompany it, including: basic principles of design and aesthetics, utility and functional products, ergonomics, manufacturing including knowledge of materials and processes, technical and technological aspects, socio-cultural and economic. The required output targets are the formulation of product planning, <i>design requirements & objectives</i> , concept making, analysis and synthesis, producing design documents, models or prototypes, presentations and exhibitions of design project results. The areas of								



	interest of Product Design Studio 4 are the same as the previous product design studios including: Transportation Equipment, Workstations and Furniture, Apparel and Fashion, Appliances.	
Study Material: Learning Material	Study Materials : 1. Product Planning 2. Design Requirements & Objectives 3. Konseptual Design 4. Preliminary Design 5. Basic Design – Platform 6. Alternative Design 7. Detail Analysis – Design Development 8. Model Studies, Simulation & Evaluation 9. Final Design 10. Document visualization & presentation design	
References	Main:	1. Lawson, Bryan.2012. How Designers Think, London: The Architectural Press Ltd 2. Martin, Bella and Bruce Hanington. 2010. Universal Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions. Massachusetts: Rockport Publishers 3. LOverbeeke, K., Kiefer, C., Carroll, J. M., & Brown, B. (2018). Design Research: Theories, Methodologies, and Product Modelling. Springer 4. Ulrich, K.T, Eppinger, S.D., Product Design & Development, 7nd Edition, McGrawHill, 2020 5. Cross, Nigel. Engineering Design Methods: Strategies for Product Design. New York; John Wiley & Sons, 1996. 6. Hallgrimsson, Bjarki, 2019. Prototyping and Model Making for Product Design: Second Edition. Paperback 7. Mootee, I. (2013). Design thinking for strategic innovation: What they can't teach you at business or design school. John Wiley & Sons. 8. Brown, T. (2012). Design thinking: Integrating innovation, customer experience, and brand value. Oxford University Press. 9. Aulia Siti Aisjah at al. (2022), Guidebook: Preparation of Final Project Reports for Undergraduate and Applied Undergraduate Programs, Sepuluh Nopember Institute of Technology Surabaya, 2022.
	Supporter:	
		1. Cross, N. (2011). <i>Design thinking: Understanding how designers think and work</i>. Berg.



		2. Tilley, A. R. (2001). <i>The measure of man and woman: human factors in design</i>. John Wiley & Sons. 3. Ashby, M.F., & Johnson, K. (2013). <i>Material and Design: The Art and Science of Material Selection in Product Design</i>. Elsevier 4. Cross, N. (2011). <i>Design thinking: Understanding how designers think and work</i>. Berg. 5. Lidwell, William, Kritina Holden, Jill Butler. 2003. <i>Universal Principles of Design</i>. Massachusetts: Rockport Publishers, Inc. 6. Kurniawan, Arie. 2018. <i>Peek & Seek : System Design</i>. Surabaya : Despro ITS 7. Bambang Tristiyono., <i>Guidebook: Preparation of Final Project Report of Product Design Study Program</i>, Sepuluh Nopember Institute of Technology Surabaya, 2020. 8. O'Grady, J. V., & O'Grady, K. V. (2017). <i>A Designer's Research Manual, Updated and Expanded: Succeed in Design by Knowing Your Clients and Understanding what They Really Need</i>. Rockport.					
Lecturer		Dr. And Windharto , DEA					
Subject requirements		-					
Week of-	The final ability of each learning stage (Sub-CPMK)	Evaluation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [References]	Assessment Weight (%)
		Indicator	Criteria & Forms	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students are able to describe empathized results related to phenomena that are the background of the design (C2, A2, P2)	Sensitivity translates phenomena Accuracy summarizes the background , the subject of planning.	Criterion: Accuracy Sensitivity Shape: Non test [Assistance & Q&A]	Learning Forms: Stuido Lecture continued Field [2x7x50 = 700min] Learning Methods: Discovery Learning Self Direct learning Student Assignments: Empatized related to the phenomenon that	-	Material: Introduction, Syllabus, college contract and Design thinking Book: Lawson, Bryan.2012. <i>How Designers Think</i> , London: The Architectural Press Ltd	



				became the background of the design. Literacy of previous research and determining the subject of research.		Cross, N. (2011). <i>Design thinking: Understanding how designers think and work</i> . Berg. Ulrich, K.T, Eppinger, S.D., Product Design & Development, 7nd Edition, McGrawHill, 2020	
2	Students are able to understand problems and make product planning schemes (C2, A3, P3)	Accuracy formulates the background as the urgency of the title. Mastery of making product planning schemes including research and design schemes	Criterion: Accuracy Sensitivity Mastery Shape: Non test [Assistance & Q&A]	Learning Forms: Stuido Lecture [2x7x50 = 700min] Learning Methods: Project based Learning Student Assignments: Membuat skema product planning. Create a research and product design flow diagram along with the implementation schedule	-	Material: Product planning Design thinking Book: Lawson, Bryan.2012. How Designers Think, London: The Architectural Press Ltd Cross, N. (2011). <i>Design thinking: Understanding how designers think and work</i> . Berg. Ulrich, K.T, Eppinger, S.D., Product Design & Development, 7nd	20%



						Edition, McGrawHill, 2020	
3	Students are able to make initial analyses related to product planning, describe the background in writing, describe problems, scope including determining design objectives. (C3, A3,P3)	Sensitivity identifies problems according to phenomena Accuracy in compiling the background, problem formulation, scope and purpose of compounding	Criterion: Accuracy Sensitivity Mastery Shape: Non test [Presentation & Q&A]	Learning Forms: Stuido Lecture [2x7x50 = 700min] Learning Methods: Self Direct learning Project based Learning Student Assignments: Make a brief presentation of the product design proposal containing: Background, study and initial analysis related to primary data the urgency of the title, description of the title, methodology, problem formulation and scope.	-	Material: Product Planning & Research Methodology Design Book: LOverbeeke, K., Kiefer, C., Carroll, J. M., & Brown, B. (2018). Design Research: Theories, Methodologies, and Product Modelling. Springer Bambang Tristiyono., Guidebook: Preparation of Final Project Report of Product Design Study Program, Sepuluh Nopember Institute of Technology Surabaya, 2020.	
4	Students are able to examine Design Requirements & objectives and design success benchmarks (C4, A4, P4)	Sensitivity in setting benchmarks for compounding success	Criterion: Accuracy Sensitivity Mastery Shape:	Learning Forms: Stuido Lecture [2x7x50 = 700min] Learning Methods: Self Direct learning	-	Material: Product Planning & Design Requirements Objectives	



		Accuracy of making <i>design requirements</i>	Non test [Assistance & Q&A]	Project based Learning Student Assignments: Create Design Requirements & Objectives as well as benchmarks (criteria) for design success in the form of (dimensions, features, and design)		Book: Ulrich, K.T, Eppinger, S.D., Product Design & Development, 7nd Edition, McGrawHill, 2020 Martin, Bella and Bruce Hanington. 2010. Universal Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions. Massachusetts: Rockport Publishers	
5	Students are able to make Conceptual Design as well as present the results of initial research related to conceptual design (C4, A4, P4)	Accuracy in making design concepts Depth in crafting concepts according to user and operational targets Mastery in presenting the results of initial	Criterion: Accuracy Sensitivity Mastery Depth Shape: Non test [Assistance & Q&A]	Learning Forms: Studio Lecture [2x7x50 = 700min] Learning Methods: Self Direct learning Project based Learning Student Assignments: Create a design concept from primary data approaches, previous research, field reviews, center reviews, and field	-	Material: Conceptual design Book: Ulrich, K.T, Eppinger, S.D., Product Design & Development, 7nd Edition, McGrawHill, 2020 Martin, Bella and Bruce Hanington. 2010. Universal	



		research related to conceptual design		reviews in the form of concept visualization or general description.		Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions. LOverbeeke, K., Kiefer, C., Carroll, J. M., & Brown, B. (2018). Design Research: Theories, Methodologies, and Product Modelling. Springer	
6	Students are able to evaluate conceptual design by considering the complexity of analysis related to basic principles of design and aesthetics, utility and functional products, ergonomics, manufacturing including knowledge of materials and processes, technical and technological aspects, socio-cultural and economic. (C5,A4,P4)	Accuracy in evaluating conceptual design by considering the complexity of analysis related to basic principles of design and aesthetics, utility and functional products, ergonomics,	Criterion: Accuracy Sensitivity Mastery Depth Shape: Non test [Assistance & Q&A]	Learning Forms: Stuido Lecture [2x7x50 = 700min] Learning Methods: Self Direct learning Project based Learning Student Assignments: Conceptual design evaluation by considering the complexity of analysis related to basic principles of design and aesthetics, product	-	Material: Konseptual design & Principal design methods Book: Ulrich, K.T, Eppinger, S.D., Product Design & Development, 7nd Edition, McGrawHill, 2020 Martin, Bella and Bruce Hanington. 2010. Universal Methods of Design-	



		manufacturing including knowledge of materials and processes, technical and technological aspects, socio-cultural and economic		utility and functionality, ergonomics, manufacturing including knowledge of materials and processes, technical and technological aspects, socio-cultural and economic.		100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions. Lidwell, William, Kritina Holden, Jill Butler. 2003. Universal Principles of Design. Massachusetts: Rockport Publishers, Inc.	
7	Students are able to produce visualization of ideas in the preliminary design stage (C5, A4, P4)	Sensitivity and mastery in visualizing initial ideas in sketches Accuracy in generating initial idea ideas to solve problems in design	Criterion: Accuracy Sensitivity Mastery Depth Shape: Non test [Presentation & Q&A]	Learning Forms: Stuido Lecture [2x7x50 = 700min] Learning Methods: Self Direct learning Project based Learning Student Assignments: Preliminary design in the form of sketches of initial ideas related to the idea of solving design problems in the form of product sketches with good quality and quantity that	-	Material: Preliminary design Book: Martin, Bella and Bruce Hanington. 2010. Universal Methods of Design- 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions.	10%



				has been agreed at the beginning of the lecture.		Kurniawan, Arie. 2018. Peek & Seek : System Design . Surabaya : Despro ITS	
8	Students are able to analyze and determine basic design as a product platform (C5, A4, P4)	Accuracy in determining the platform (basic design) Depth and mastery of technical aspects that accompany platform selection / basic design	Criterion: Accuracy Sensitivity Mastery Depth Shape: Non test [Assistance & Q&A]	Learning Forms: Stuido Lecture [2x7x50 = 700min] Learning Methods: Self Direct learning Project based Learning Student Assignments Determining basic design as a product platform can be in the form of studying existing platforms, selecting existing platforms, or creating new platforms with DRnO and Conceptual design considerations. Complete basic design with anatomy, technical specifications and basic design selection criteria.		Material: Platform , Anatomy & Basic Design Book: Cross, Nigel. Engineering Design Methods: Strategies for Product Design. New York; John Wiley & Sons, 1996. Kurniawan, Arie. 2018. Peek & Seek : System Design . Surabaya : Despro ITS	
9	Students are able to create alternative designs using a predetermined platform	Mastery of technical aspects	Criterion: Accuracy Sensitivity	Learning Forms: Stuido Lecture [2x7x50 = 700min]	-	Material: Alternative Design	



	including adjusting to the design concept (C5, A4, P4)	Sensitivity Aesthetic aspects Accuracy in producing design alternatives Depth in unraveling alternative design solutions	Mastery Depth Shape: Non test [Assistance & Q&A]	Learning Methods: Self Direct learning Project based Learning Student Assignments: Create alternative designs using a predetermined platform in the form of design visualization (sketches) that lead to alternative solutions to design problems.		Book: Lidwell, William, Kritina Holden, Jill Butler. 2003. Universal Principles of Design. Massachusetts: Rockport Publishers, Inc. Kurniawan, Arie. 2018. Peek & Seek : System Design . Surabaya : Despro ITS	
10	Students are able to carry out advanced analysis as design development (C5, A4, P4)	Accuracy in completing advanced analysis related to design development. Depth and mastery of technical aspects	Criterion: Accuracy Sensitivity Mastery Depth Shape: Non test [Assistance & Q&A]	Learning Forms: Studio Lecture [2x7x50 = 700min] Learning Methods: Self Direct learning Project based Learning Student Assignments: Design development by conducting further studies and analysis such as: form analysis (forming development), technical analysis, market analysis (segmentation, targeting, positioning,	-	Material: Product Development & Analysis Book: Lidwell, William, Kritina Holden, Jill Butler. 2003. Universal Principles of Design. Massachusetts: Rockport Publishers, Inc. Kurniawan, Arie. 2018. Peek & Seek : System Design .	



				brand, business etc.), production (materials, materials, and manufacturing processes), analysis of parts and components selection, other analysis that supports product development.		Surabaya : Despro ITS	
11	Students are able to produce a study model as part of advanced analysis for evaluation towards the final design (C5, A4, P5)	Accuracy in realizing ideas into study models Mastery of model study evaluation, usability testing or user testing	Criterion: Accuracy Mastery Depth Shape: Non test [Assistance & Q&A]	Learning Forms: Stuido Lecture [2x7x50 = 700min] Learning Methods: Self Direct learning Project based Learning Student Assignments: Study models by adjusting the subject of design, some of which conduct usability testing, user testing or digital simulation as a form of evaluation of functions, designs and features towards the final design.	-	Material: Study Model, usability testing, user testing Book: LOverbeeke, K., Kiefer, C., Carroll, J. M., & Brown, B. (2018). Design Research: Theories, Methodologies, and Product Modelling. Springer Brown, T. (2012). Design thinking: Integrating innovation, customer experience, and brand value. Oxford University Press.	



12	Students are able to determine the final design (C6, A5, P5)	Accuracy in determining the final design according to the design success benchmarks and conceptual design that have been determined at the beginning of the design	Criterion: Accuracy Mastery Shape: Non test [Assistance & Q&A]	Learning Forms: Stuido Lecture [2x7x50 = 700min] Learning Methods: Self Direct learning Project based Learning Student Assignments: Determine the final design and criteria that have been determined as a benchmark for design success.	-	Material: Evaluation of model studies and final design Book: LOverbeeke, K., Kiefer, C., Carroll, J. M., & Brown, B. (2018). Design Research: Theories, Methodologies, and Product Modelling. Springer Brown, T. (2012). Design thinking: Integrating innovation, customer experience, and brand value. Oxford University Press.	
13	Students are able to complete product attributes as final design completeness such as branding, packaging, color scheme, etc. (C6, A5, P5)	Accuracy and mastery in completing product attributes as the final completeness of the design.	Criterion: Accuracy Mastery Depth Shape: Non test [Assistance & Q&A]	Learning Forms: Stuido Lecture [2x7x50 = 700min] Learning Methods: Self Direct learning Project based Learning Student Assignments:	-	Material: Final design Book: LOverbeeke, K., Kiefer, C., Carroll, J. M., & Brown, B. (2018). Design	



				Complete product attributes as final design completeness such as branding, packaging, color scheme, etc		Research: Theories, Methodologies, and Product Modelling. Springer Brown, T. (2012). Design thinking: Integrating innovation, customer experience, and brand value. Oxford University Press.	
14	Students are able to visualize the final product on a certain scale (C6, A5, P5)	Accuracy and mastery realize product visualization that becomes the final design in the form of scaled products or prototyping	Criterion: Accuracy Mastery Shape: Non test [Presentation & Q&A]	Learning Forms: Studio Lecture [2x7x50 = 700min] Learning Methods: Self Direct learning Project based Learning Student Assignments: The scale model or final prototype adjusts the subject of research and the equivalence of manufacturing costs	-	Material: Final design Book: LOverbeeke, K., Kiefer, C., Carroll, J. M., & Brown, B. (2018). Design Research: Theories, Methodologies, and Product Modelling. Springer Brown, T. (2012). Design thinking: Integrating innovation, customer experience, and brand value. Oxford University Press.	20%



15	Students are able to complete design documents as an accompaniment to the final design in the form of: Technical drawings, process documentation & final making of squilla designs, posters, exhibition slides, animations / product prpfil videos, IPR and public articles. (C6,A5,P5)	Completeness completes the design document as an accompaniment to the final design in the form of: Technical drawings, process documentation & final manufacture of stubular designs, posters, exhibition slides, animations / product prpfil videos, IPR and publication articles according to the provisions of the product design department.	Criterion: Accuracy Mastery Equipment Shape: Non test [Presentation & Q&A]	Learning Forms: Stuido Lecture [2x7x50 = 700min] Learning Methods: Self Direct learning Project based Learning Student Assignments: complete the design document as an accompaniment to the final design in the form of: Technical drawings, process documentation & final manufacture of sakala designs, posters, exhibition slides, animations / product prpfil videos, IPR and publication articles according to lecture contracts and class agreements.	-	Material: Final design Pustaka : LOverbeeke, K., Kiefer, C., Carroll, J. M., & Brown, B. (2018). Design Research: Theories, Methodologies, and Product Modelling. Springer Bambang Tristiyono., Guidebook: Preparation of Final Project Report of Product Design Study Program, Sepuluh Nopember Institute of Technology Surabaya, 2020.	50%
16	PRODUCT DESIGN STUDIO WORK EXHIBITION 4						



DP234633 ELECTIVE COURSE: USER EXPERIENCE DESIGN

		INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM				
SEMESTER LEARNING PLAN						
RACE (MK)		CODE	MK CLUSTER	CREDIT (sks)	SEMESTER	Date of Compilation
ELECTIVE COURSE: USER EXPERIENCE DESIGN		DP234633	Design and Human Factors Study	T=2 P=1		10 November 2023
OTORIZATION / VERIFICATION		RPS Developer Lecturer		RMK Coordinator	Head of Study Program	
		Gunanda Tiara Maharany, S.Ds., M.Ds.		Hertina Susandari, S.T., M.T.	Bambang Tristiyono, ST., M.Si.	
Learning Outcomes	CPL-PRODI charged to MK					
	CPL 1	S9	Show an attitude of responsibility for work in their field of expertise independently			
	CPL 2	S11	Strive to the maximum to achieve perfect results			
	CPL 3	KU1	Able to examine the implications of the development or implementation of science and technology that pay attention to and apply humanities values in accordance with their expertise based on scientific rules, procedures and ethics in order to produce solutions, ideas, designs or art criticism			
	CPL 4	KK2	Able to present designs orally, in writing, and multimedia in the form of abstraction and visual, in detail their functions			
	CPL 5	KK5	Able to create models to solve complex design problems creatively based on design and engineering principles, taking into account economic factors, Security, Safety and Environmental Sustainability			



	CPL 6	P1	Mastering the theoretical concepts of design: 1. function, 2. aesthetics, 3. economic, 4. social and, 5. technology in general																																																					
	CPL 7	P3	In-depth 2 and 3 dimensions design and visualization skills																																																					
	Course Learning Outcomes (CPMK)																																																							
	CP MK 1	Students are able to define and explain the basic concepts of user experience design, process stages and techniques in user experience design; in class discussions and through practice exams																																																						
	CP MK 2	Students are able to define and explain the application of UX Design; through tasks in groups or individually.																																																						
	CP MK 3	Students are able to demonstrate proficiency in using UX Design tools and methods and show how to choose the most appropriate method or approach for a particular project; by completing projects and presenting their work processes.																																																						
	CP MK 4	Students are able to define and compile an activity plan for user experience testing.																																																						
	CP MK 5	Students are able to describe, analyze, and conclude the concept of value and user experience in the design of the service / service they design.																																																						
Peta CPL – CP MK	<table><tr><td></td><td>CPL1</td><td>CPL2</td><td>CPL3</td><td>CPL4</td><td>CPL5</td><td>CPL6</td><td>CPL7</td></tr><tr><td>CPMK 1 / SUB CPMK 1</td><td></td><td></td><td>√</td><td>√</td><td></td><td>√</td><td></td></tr><tr><td>CPMK 2 / SUB CPMK 2</td><td>√</td><td>√</td><td></td><td></td><td></td><td></td><td>√</td></tr><tr><td>CPMK 3 / SUB CPMK 3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>CPMK 4 / SUB CPMK 4</td><td></td><td>√</td><td></td><td></td><td>√</td><td></td><td>√</td></tr><tr><td>CPMK 5 / SUB CPMK 5</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td><td>√</td></tr></table>									CPL1	CPL2	CPL3	CPL4	CPL5	CPL6	CPL7	CPMK 1 / SUB CPMK 1			√	√		√		CPMK 2 / SUB CPMK 2	√	√					√	CPMK 3 / SUB CPMK 3								CPMK 4 / SUB CPMK 4		√			√		√	CPMK 5 / SUB CPMK 5	√	√	√	√	√	√	√
	CPL1	CPL2	CPL3	CPL4	CPL5	CPL6	CPL7																																																	
CPMK 1 / SUB CPMK 1			√	√		√																																																		
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CPMK 5 / SUB CPMK 5	√	√	√	√	√	√	√																																																	
Brief Description MK	Courses that study <i>usercentered approaches and co-design methods in making</i> intangible products <i>that are useful, usable and in accordance with user experience with creative, effective, and sustainable service solutions.</i>																																																							
Study Material: Learning materials	1. Basic introduction to user experience design 2. User experience design development process 3. User experience design prototyping																																																							



Book		Main:					
		1. Marsh, J, 2016. UX for Beginners. Canada: O'Reilly Media, Inc. 2. Saffer, Dan. 2007. Chapter 8: Service Design in Designing for interaction. AIGA: New Riders 3. Unger, R, Chandler, C, 2012. A Project Guide to UX Design: For User Experience Designers in the Field or in the Making (2nd Edition). Berkeley: New Riders.					
		Supporter:					
		1. Coleman, R., Clarkson, J., Dong, H, & Cassim, J. 2007. Design for Inclusivity: A practical guide to accessible, innovative, and user-centered design. UK: Gower Publishings					
Lecturer							
Subject requirements		-					
Week of-	Final ability of each learning stage (Sub-CPMK)	Evaluation		Forms of Learning; Learning Methods; Student Assignments; [Time Estimate]		Learning Materials [Library]	Assessment Weight (%)
		Indicator	Criteria & Techniques				
(1)	(2)	(3)	(4)	Face to Face (5)	Non Daring (6)	(7)	(8)



1	<i>Course Introduction</i>	Students know and understand the content and rules of the lecture that will be followed	Criterion: Accuracy and insight Shape: Non test	Shape: Lecture Discussion Method: Response Assignment: - Estimated time : • 1x3x50'		Introduction to lectures (Course description, lecture rules)	
2	<i>User Experience Design: An Introduction</i>	Students know and understand the definition of <i>User Experience Design</i> and the theoretical knowledge base related to User Experience Design	Criterion: Accuracy and insight Shape: Not your	Shape: Discussion Method: Response Assignment: - Estimated time : 1x3x50'		• <i>What Is UX?</i> • <i>The Five Main Ingredients of UX Perspective</i> • <i>The Pyramid of UX Impact</i>	



						Pustaka: Marsh, J, 2016. UX for Beginners. Canada: O'Reilly Media, Inc.	
3	<i>Principles UX Design I</i>		Criterion: Accuracy and insight Shape: Not your	Shape: Discussion Method: Response Assignment: - Estimated time : 1x3x50'		• <i>Principles and characteristics of UX Design</i> • <i>Design models to address customers' needs</i> Pustaka: • Meroni-Sangiorgi (2009): Section 1 • Saffer (2007): Ch 8	



4	<i>Principles UX Design II</i>	Students are able to understand and identify the concept of user-centered design and the context of creating value.	Criterion: Accuracy and insight Shape: Not your	Shape: Discussion Method: Response Assignment: - Estimated time : 1x3x50'		<i>User-centered and direction in service design research</i> Pustaka: • Coleman et al (2007): Ch 9 • Saffer (2007): Ch 8	
5	<i>User Experience Design Process I</i>	Students are able to understand, identify, and apply various methods and strategies of user experience analysis (users' experiences) such as customer journey maps, cultural probes, personas, mobile ethnography, etc.	Criterion: Accuracy and insight Shape: Not your	Shape: Discussion Method: Response Assignment: - Estimated time : 1x3x50'		<i>Methods and strategies to identify meaningful users' experiences on service</i> Book: Stickdorn-Schneider (2012): Ch 4 & 5	
6	<i>User Experience Design Process II</i>	Students are able to understand,	Criterion:	Shape: Discussion		<i>Managerial and</i>	



		identify, and describe 5 (five) aspects of managing the service design process: design aspects, service solutions, supporting systems, technology architecture, and measurement systems.	Accuracy and insight Shape: Not your	Method: Response Assignment: Students conduct user identification and evaluation exercises by applying knowledge of user analysis methods that have been learned Estimated time : 1x3x50'		<i>supervisory aspects of service design processess</i> Book: Stickdorn-Schneider (2012): Ch 4 & 5 Edman (2010): Ch 5	
7	Prototyping <i>UX Design</i>	Students are able to understand, describe, and map the user experience (simulative and anticipatory) as a basis for defining a service blueprint for customers (<i>customer service blueprint</i>)	Criterion: Accuracy and insight Shape: Non test	Shape: Discussion Method: Response Assignment: Estimated time : 1x3x50'	•	• <i>Idenifying simulated and anticipated experiences</i> • <i>Defining customers' service blueprints</i>	



						Book: Stickdorn-Schneider (2012): Ch 4 & 5	
8	Midterm Evaluation / Midterm Exam						
9	<i>Service, Innovation, and Enterprise</i>	Students are able to understand and describe sectoral aspects and through exposure to various enterprise service cases that are considered successful (successful)	Criterion: Accuracy and insight Shape: Not your	Shape: Discussion Method: Response Assignment: Estimated time : 1x3x50'		• <i>Sectoral and commercial aspects of service design</i> • <i>Case of service enterprise</i> Pustaka: Stickdorn-Schneider (2012): Ch 6	
10	<i>User Experience Design Studio I</i>	Students know and understand the user experience design (UX) project	Criterion: Accuracy and insight Shape:	Shape: Discussion Method: Response		• <i>Introduction of UX design project</i>	



		they will be working on Students are able to understand, identify, and evaluate various aspects of touchpoints based on the 4 phase doublediamond method for product design	Not your	Assignment: Estimated time : 1x3x50'		• <i>Double-diamond design process</i> Pustaka: • <i>Unger, R, Chandler, C, 2012. A Project Guide to UX Design: For User Experience Designers in the Field or in the Making (2nd Edition). Berkeley: New Riders.</i> • <i>Design Methods for Developing Services (UK Design</i>	



						<i>Council, 2011) Stickdorn-Schneider (2012): Ch 4 & 5</i>	
11	<i>User Experience Design Studio II</i>	Students are able to understand, identify, and evaluate user needs & experiences using various appropriate user identification methods, to determine aspects of the product to be developed		Shape: Discussion Method: Response Assignment: Estimated time : 1x3x50'		<i>Phase of discovery: exploring users' needs and developing initial ideas of service</i> Pustaka: Design Methods for Developing Services (UK Design Council, 2011) Stickdorn-Schneider (2012): Ch 4 & 5	



12	<i>User Experience Design Studio III</i>	Students are able to identify, classify, and conclude alternative solutions in the form of the best products that suit their needs and user experience		Shape: Discussion Method: Response Assignment: Estimated time : 1x3x50'		<i>Phase of definition: identifying possibilities and identifying briefs of service solution</i> Pustaka: Design Methods for Developing Services (UK Design Council, 2011)	
13	<i>User Experience Design Studio IV</i>	Students are able to identify, classify, and conclude alternative solutions in the form of the best products that suit their needs and user experience		Shape: Discussion Method: Response Assignment: Estimated time : 1x3x50'		<i>Phase of development: developing and refining service solution</i> Pustaka: Design Methods for	



						Developing Services (UK Design Council, 2011) Stickdorn-Schneider (2012): Ch 4 & 5	
14	<i>User Experience Design Studio V</i>	MAMP students analyze, synthesize, conclude and design final product solutions that fit the needs & user experience	Criterion: Accuracy and insight Shape: Not your	Shape: Lecture Discussion Method: Response Assignment: - Estimated time : 1x3x50'		<i>Phase of delivery: finalizing product solution</i>	
15	<i>User Experience Design Presentation</i>	Students are able to review and convey the product solutions they produce.	Criterion: Accuracy and insight Shape: Presentation	Shape: Lecture Discussion Method: Presentation		<i>Presentation</i>	



				Assignment: - Estimated time : 1x3x50'			
16	End of Semester Evaluation / End of Semester Exam						

1	Students are able to understand the introduction, syllabus, tuition contract.	-	Criterion: Shape:	Learning Forms: Lecture [1x2x50 = 100 minutes] Learning Methods: Student Assignments:	-	Material: Introduction, syllabus, tuition contract. Book:	
2	Students are able to understand, apply and explain the understanding of professional ethics and the importance of understanding ethics in the product design profession.	Accuracy and completeness in understanding, applying and explaining the understanding of professional ethics and the importance of understanding ethics in the product design profession.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 menit] Student Assignments: Power point Presentations Word Document [1x2x50 = 100 minutes]	-	Material: Understanding professional ethics and the importance of understanding ethics in the product design profession. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	
3	Students are able to understand, apply and	Accuracy and completeness	Criterion:	Learning Forms:	-	Material:	



	explain the basic principles of professional ethics, such as integrity, professionalism, and social responsibility.	in understanding, applying and explaining the basic principles of professional ethics.	The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 menit] Student Assignments: Power point Presentations Word Document [1x2x50 = 100 minutes]		Basic principles of professional ethics. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	
4	Students are able to understand, apply and explain the Code of Product Design Ethics that applies in the product design industry.	Accuracy and completeness in understanding, applying and explaining the Code of product design ethics applicable in the product design industry.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 menit] Student Assignments: Power point Presentations Word Document [1x2x50 = 100 minutes]	-	Material: A code of product design ethics that applies in the product design industry. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	
5	Students are able to understand, apply and	Accuracy and completeness	Criterion:	Learning Forms:	-	Material:	



	analyze ethical issues that are often faced by product designers, such as plagiarism, abuse of power, and conflicts of interest.	in understanding, applying and analyzing ethical issues that are often faced by product designers.	The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 menit] Student Assignments: Power point Presentations Word Document [1x2x50 = 100 minutes]		Ethical issues are often faced by product designers. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	
6	Students are able to understand, apply and analyze the social and environmental responsibilities of a product designer, including how to pay attention to the rights of others and maintain confidentiality.	Accuracy and completeness in understanding, applying and analyzing the social and environmental responsibility of a product designer.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 menit] Student Assignments: Power point Presentations Word Document [1x2x50 = 100 minutes]	-	Material: Social and environmental responsibility of a product designer. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	
7	Students are able to understand, apply and	Accuracy and completeness	Criterion:	Learning Forms:	-	Material:	20%



	explain the rights and responsibilities of a product designer to society.	in understanding, applying and explaining the rights and responsibilities of a product designer to society.	The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 menit] Student Assignments: Power point Presentations Word Document [1x2x50 = 100 minutes]		The rights and responsibilities of a product designer towards society. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	
8	Midterm Evaluation						30%
9	Students are able to understand, apply and explain the rights and responsibilities of a product designer to the profession carried.	Accuracy and completeness in understanding, applying and explaining the rights and responsibilities of a product designer to the profession carried.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 menit] Student Assignments: Power point Presentations Word Document [1x2x50 = 100 minutes]	-	Material: The rights and responsibilities of a product designer to the profession carried. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	



10	Students are able to understand, apply and explain ethics in carrying out product design work and respect the rights of others.	Accuracy and completeness in understanding, applying and explaining ethics in carrying out product design work and respecting the rights of others.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 menit] Student Assignments: Power point Presentations Word Document [1x2x50 = 100 minutes]	-	Material: Ethics in carrying out product design work and respecting the rights of others. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	
11	Students are able to understand, apply and explain how to become an ethical product designer in carrying out work.	Accuracy and completeness in understanding, applying and explaining How to be an ethical product designer in carrying out work.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 menit] Student Assignments: Power point Presentations Word Document [1x2x50 = 100 minutes]	-	Material: How to become an ethical product designer in carrying out work. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	



12	Students are able to understand, apply and explain products that are environmentally friendly and do not harm the community.	Accuracy and completeness in understanding, applying and explaining products that are environmentally friendly and do not harm the community.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 menit] Student Assignments: Power point Presentations Word Document [1x2x50 = 100 minutes]	-	Material: Products that are environmentally friendly and do not harm the community. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	
13	Students are able to understand, apply and explain the rights of copyright holders and respect these rights in using the work of others and the rights of people involved in the product production process, such as workers' rights and suppliers' rights.	Accuracy and completeness in understanding, applying and explaining the rights of copyright holders and people involved in the product production process.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 menit] Student Assignments: Power point Presentations Word Document [1x2x50 = 100 minutes]	-	Material: Rights of copyright holders and persons involved in the product production process. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	



14	Students are able to understand, apply and explain social and cultural factors in the product design process.	Accuracy and completeness in understanding, applying and explaining social and cultural factors in the product design process.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 menit] Student Assignments: Power point Presentations Word Document [1x2x50 = 100 minutes]	-	Material: Social and cultural factors in the product design process. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	
15	Students are able to understand, apply and explain the ability to work ethically in teams and in collaboration with other colleagues.	Accuracy and completeness in understanding, applying and explaining the ability to work ethically in teams and in collaboration with other colleagues.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 menit] Student Assignments: Power point Presentations Word Document [1x2x50 = 100 minutes]	-	Material: Ability to work ethically in a team and in cooperation with other colleagues. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	20%
16	End of Semester Evaluation						30%



ELECTIVE COURSE: DESIGN AND METAVERSE

		INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM				Document Code	
SEMESTER LEARNING PLAN							
RACE (MK)		CODE	MK CLUSTER	CREDIT (sks)		SEMESTER	Date of Compilation
ELECTIVE COURSE: DESIGN AND METAVERSE		DP234634	Product Design Technology	T=3	P=	1	10 Nov 2022
AUTHORIZATION		RPS Developer		Coordinator RMK		Head of Study Program	
		Ahmad Rieskha Harseno, S.T,M.Ds		Djoko Kuswanto, ST., M.Biotech		Bambang Tristiyono, ST., M.Si.	
Learning Outcomes (CP)	CPL-PRODI charged to MK						
	CPL-3	Able to manage self-learning, and develop themselves as lifelong learners to compete at national, and international levels, in order to make a real contribution to solving problems by implementing information and communication technology and paying attention to sustainability principles and understanding technology-based entrepreneurship.					
	CPL-4	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.					
	CPL-5	Able to understand and apply knowledge, insight and science related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural, economic and business, entrepreneurship, code of ethics and IPR.					



	CPL-7	Able to research problems, formulate and publish design needs and solutions for the present or in the future using relevant design and research methodologies.				
	Course Learning Outcomes (CPMK)					
	CPMK-1	Students are able to understand digital innovation (C2, A2, P2)				
	CPMK-2	Students are able to identify the components of digital innovation (C2, A3, P3)				
	CPMK-3	Students are able to apply digital innovation (C3, A4, P3)				
	CPMK-4	Students are able to explain digital innovation (C2, A2, P2)				
	CPMK-5	Students are able to integrate digital innovation (C4, P4, A4)				
		Metric CPL – CPMK				
		CPMK	CPL-3	CPL-4	CPL-5	CPL-7
		CPMK-1	V			
		CPMK-2	V	V	V	
		CPMK-3		V	V	V
		CPMK-4	V	V		V
		CPMK-5			V	V
Brief Description MK	Application of physical product design to the realm of digital products with the application of AR VR MR so that students have the ability to innovate the process in digital product design					
Study Material: Learning Material	Introduction of innovation in the world of product design in the digital realm					
Pustaka	Main:					
	Write down the main literature used, including teaching materials compiled by this MK lecturer. Use up-to-date references					
	Supporter:					
	Write down supporting libraries, if any, as literacy enrichment					



Lecturer	Ahmad Rieskha Harseno, S.T., M.Ds.						
Required courses	-						
Week of	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assessment Weight (%)
		Indicator	Criteria & Forms	Luring (offline)	Daring (online)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	CPMK-1 Students are able to understand digital innovation (C2, A2, P2)		Criterion: Accuracy, mastery, neatness Technique: non test	Shape: Lecture Responsi Method: Lectures Case Based Learning Time estimate: 1x3x50'	Assignment: 1. What is the reason for pursuing the field of digital innovation? 2. Name examples of designs, events or exhibitions related to the field of digital innovation? 3. Name and describe a field that you find interesting and growing at the moment and you are interested in developing it?	Pengenalan & Sejarah Digital Innovation / Metaverse (AR, VR, MR, Wearables & Senses)	5



					4. Name all the apps you're good at or want to learn, here's why?		
2	CPMK-2 Students are able to identify the components of digital innovation (C2, A3, P3)		Criterion: Accuracy, mastery, neatness Technique: non test	Shape: Responsi Tutorial Method: Lectures Case Based Learning Time estimate: 1x3x50'	Assignment: 1. What do you want to develop through VR? 2. Create a Brainstorming Idea of the VR Media You Want to Develop . Top five . Find Themes . Brainstorming 2. Collection of 3D asset lists for VR tasks	VR introduction and application materials	5
3 4 5	CPMK-3 Students are able to apply digital innovation (C3, A4, P3)		Criterion: Accuracy, mastery, neatness Technique: non test	Shape: Responsi Method: Case Based Learning Time estimate: 1x3x50'	Big Theme: Virtual Exhibition Assignment: Amplify VR media by paying attention to: . Storyboard . Role Playing . Persona . Prototyping . Get Feedback	Simple application of VR	10



6	CPMK-2 Students are able to identify the components of digital innovation (C2, A3, P3)		Criterion: Accuracy, mastery, neatness Technique: non test	Shape: Responsi Tutorial Method: Lectures Case Based Learning Time estimate: 1x3x50'	Assignment: 1. What do you want to develop through AR? 2. Create a Brainstorming Picture of ideas from AR media that you want to develop . Top five . Find Themes . Brainstorming 2. Collection of 3D asset lists for AR tasks	Introduction and Application of AR digital products	5
7	Midterm Evaluation / Midterm Exam						15
8 9 10	CPMK-3 Students are able to apply digital innovation (C3, A4, P3)		Criterion: Accuracy, mastery, neatness Technique: non test	Shape: Responsi Method: Case Based Learning Time estimate: 1x3x50'	Big Theme: Historical objects of Indonesia Assignment: Amplify VR media by paying attention to: . Storyboard . Role Playing . Persona . Prototyping . Get Feedback	Simple application of digital product AR	10



11	CPMK-2 Students are able to identify the components of digital innovation (C2, A3, P3)		Criterion: Accuracy, mastery, neatness Technique: non test	Shape: Responsi Tutorial Method: Lectures Case Based Learning Time estimate: 1x3x50'	Assignment: 1. What do you want to develop through AR face recognition? 2. Create an Idea Brainstorm ideas from AR face recognition media that you want to develop . Top five . Find Themes . Brainstorming 2. Collection of 3D asset lists for AR tasks	Material on the application of AR face recognition on social media	5
12 13	CPMK-3 Students are able to apply digital innovation (C3, A4, P3)		Criterion: Accuracy, mastery, neatness Technique: non test	Shape: Responsi Method: Case Based Learning Time estimate: 1x3x50'	Big Theme: Faces/Characteristics of Indonesian Heroes Assignment: Amplify VR media by paying attention to: . Storyboard . Role Playing . Persona . Prototyping . Get Feedback	Application of AR face recognition on social media	10



14	CPMK-4 Students are able to explain digital innovation (C2, A2, P2)		Criterion: Accuracy, mastery, neatness Technique: non test	Shape: Responsi Method: Case Based Learning Time estimate: 1x3x50'	Assignment: Presentation and evaluation of the work . Future Digital Innovation in the Future How . Recommendations for improvement	Presentation of each student / group of 3 projects that have been done	10
15	CPMK-5 Students are able to integrate digital innovation (C4, P4, A4)		Criterion: Accuracy, mastery, neatness Technical: Not your	Shape: Responsi Method: Group Project Time estimate: 1x3x50'	Assignment: Preparation and collection of all tasks	Organizing and collecting all tasks on Canva, Behance and Social Media Accounts	10
16	End of Semester Evaluation / End of Semester Exam						15

**DP234635 ELECTIVE COURSE: MILITARI PRODUCTS**

	INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code
SEMESTER LEARNING PLAN						
RACE (MK)	CODE	MK CLUSTER	CREDIT (sks)		SEMESTER	Date of Compilation
ELECTIVE COURSE: MILITARI PRODUCTS	DP234635	Product Planning	T=1	P=3	5	December 31, 2022
AUTHORIZATION 	RPS Developer Andhika Estiyono	Coordinator RMK Ari Dwi Krisbianto, S.T., M.Ds.			Head of Study Program Bambang Tristiyono, ST., M.Si	
Learning Outcomes (CP)	CPL-PRODI charged to MK					
	CPL-4	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.				
	CPL-5	Able to understand and apply knowledge, insight and science related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural, economic and business, entrepreneurship, code of ethics and IPR.				
	CPL-6	Able to design products and systems with consideration of all aspects that influence them, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.				
	CPL-7	Able to research problems, formulate and publish design needs and solutions for the present or future using relevant design and research methodologies.				
Course Learning Outcomes (CPMK)						



	CPMK-1	Able to understand human factors, ergonomics and basic principles in military products				
	CPMK-2	Able to apply the results of human factor studies, ergonomics and basic needs of military equipment for product performance				
	CPMK-3	Able to analyze design needs for each unit case study of military activities				
	CPMK-4	Students are able to sketch and make models and prototypes of military products				
		Matrik CPL – CPMK				
		CPMK	CPL-4	CPL-5	CPL-6	CPL-7
		CPMK-1	V			
		CPMK-2		V		
		CPMK-3				V
		CPMK-4			V	
Brief Description MK	Courses that study products for defense and military needs which include physical design and operational characteristics					
Study Material: Learning Material	1. Introduction to Military Product Design Course. Explanation of the first tasks of Military Product Design 2. Study of activity and Human Factors on military equipment 3. Co-topic determination 4. Reverse engineering military product design from reference products 5. Study and review of existing products 6. Military product materials 7. Technical aspects of military products 8. Ergonomics of military products 9. Structure and construction of military products 10. Knowledge of military product specifications 11. Military product design ideation and sketches 12. Low-fi alternative models of military products 13. User testing and feedback from military users 14. Design evaluation 15. Final design 16. Prototypes and models					
Book	Main:					



		- Adedeji B. Badiru, Marlin U. Thomas - Handbook of Military Industrial Engineering (Industrial Innovation Series) (2009) - Military Handbook - MIL-HDBK-17-4A_ Composite Materials Handbook, Volume 4 - Metal Matrix Composites-U.S. Department of Defense (2002)					
		Supporter:					
Lecturer		Andhika Estiyono					
Subject requirements		-					
Week of	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assessment Weight (%)
		Indicator	Criteria & Forms	Luring (offline)	Daring (online)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students understand the scope of military product design	Students are able to determine the realm of design of military products developed	Students are able to express the areas worked on in military product design Form: discussion and exploration	Lectures, responses and discussions. 150 minutes		Badiru, A. B., & Thomas, M. U. (2009); dan Miracle, D. B. (2005)	5
2	Students discover the special activities and human factors found in military products and their designations	Students are able to distinguish common products from military products in terms of use, time and place	Students are able to express the specificity of military products so that there are more levels that must be applied to products Form: discussion and exploration	Lectures, responses and discussions. 150 minutes		Badiru, A. B., & Thomas, M. U. (2009); dan Miracle, D. B. (2005)	5
3	Students understand the types of products found in the defense and military fields	Students are able to name military products that are specifically used for certain purposes	Students are able to provide examples of military products as well as reference material	Lectures, responses and discussions. 150 minutes		Badiru, A. B., & Thomas, M. U. (2009); dan	5



			Shapes: Reference search and shape exploration			Miracle, D. B. (2005)	
4	Students are able to choose products that will be designed with the limitations that have been given	Students are able to determine the military products to be studied	Products used in military activities Form: reference search and benchmarking	Lectures, responses, discussions. 150 minutes		Badiru, A. B., & Thomas, M. U. (2009); dan Miracle, D. B. (2005)	5
5	Students are able to apply the basics of manufacturing to create military product designs	Students are able to estimate the processes applied to the manufacture of military products	Students are able to provide alternative product assembly and disassembly processes Form: sketching practice and discussion	Lectures, responses, discussions. 150 minutes		Badiru, A. B., & Thomas, M. U. (2009); dan Miracle, D. B. (2005)	5
6	Students are able to analyze the interface configuration, form and operation of existing products	Students are able to determine the components and tools of product operation	Students are able to plan deepening, review, search, innovation, and development Forms: sketches, 3D simulations and discussions	Lectures, responses, discussions. 150 minutes		Badiru, A. B., & Thomas, M. U. (2009); dan Miracle, D. B. (2005)	5
7	Students know the types of military product materials	Students are able to name specific types of materials for military products	Students are able to summarize the types of material obtained from literature and secondary data sources Form: exploration and discussion	Lectures, responses, discussions. 150 minutes		Badiru, A. B., & Thomas, M. U. (2009); dan Miracle, D. B. (2005)	5
8	Midterm Evaluation / Midterm Exam						15
9	Students know the features and design criteria of military products	Students are able to name the features of the case	Students summarize and record the features of existing products and	Lectures, responses and discussions. 150 minutes		Badiru, A. B., & Thomas, M. U. (2009); dan	5



		study of the military product being developed	are able to provide alternative development offers Form: exploration and discussion			Miracle, D. B. (2005)	
10	Students know how to operate, activities and comfort of using military products	Students know how products are used and can receive feedback on deficiencies or that can be included in products related to military product operations	Students are able to get input data to be used as development Form: trial practice and discussion	Lectures, responses, discussions. 150 minutes		Badiru, A. B., & Thomas, M. U. (2009); dan Miracle, D. B. (2005)	5
11	Students know the basic specifications of military products	Students are able to explain the specifications of military products	Specification based on data from input results for development Form: discussion	Lectures, responses, discussions. 150 minutes		Badiru, A. B., & Thomas, M. U. (2009); dan Miracle, D. B. (2005)	5
12	Students are able to design sketches of military products from the results of study and analysis	Students are able to present alternative forms of new designs	Clear design, form and function of its operation Shape: design sketching practice	Lectures, responses, discussions. 150 minutes		Badiru, A. B., & Thomas, M. U. (2009); dan Miracle, D. B. (2005)	5
13	Students are able to create simple models to test	Students are able to make a lo-fi model to be tested before being made final	The model must clearly present its operation and features plan Form: practice and discussion	Lectures, responses, discussions. 150 minutes		Badiru, A. B., & Thomas, M. U. (2009); dan Miracle, D. B. (2005)	5
14	Students are able to observe and can make	Students are able to capture new input	New input according to problem constraints	Lectures, responses, discussions. 150 minutes		Badiru, A. B., & Thomas, M. U. (2009); dan	5



	improvements from user input		Form: simulation practice			Miracle, D. B. (2005)	
15	Students are able to make the final design of military products in the form of models / prototypes	Students are able to apply the results of analysis and study along with input to be applied to military products	Students are able to present a final design model / prototype that is more suitable for their activities and operations Form: practice	Lectures, responses, discussions. 150 minutes		Badiru, A. B., & Thomas, M. U. (2009); dan Miracle, D. B. (2005)	10
16	End of Semester Evaluation / End of Semester Exam						10

**DP234636 ELECTIVE COURSE: PRODUCT PHOTOGRAPHY****INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA,
FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS,
INDUSTRIAL DESIGN PROGRAM****Document
Code****SEMESTER LEARNING PLAN**

RACE (MK)		CODE	MK CLUSTER	CREDIT (sks)		SEMESTER	Date of Compilation
ELECTIVE COURSE: PRODUCT PHOTOGRAPHY		DP234636	PRODUCT DESIGN TECHNOLOGY	T = 1	P=2	6 (more)	10 Nopember 2022
AUTHORIZATION		RPS Developer		Coordinator RMK		Head of Study Program	
		Audit Yulardi, S.T, M.Ds		Djoko Kuswanto, ST., M.Biotech		Bambang Tristiyono, S.T., M.Si	
Learning Outcomes (CP)	CPL-PRODI charged to MK						
	CPL-5	Able to understand and apply knowledge, insight and science related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural, economic and business, entrepreneurship, code of ethics and IPR.					
	CPL-8	Able and skilled in using design process aids that include: manual or digital equipment according to technology and the times.					
	CPL-9	Able to present ideation design concepts through verbal communication, visual media, and prototypes (Models / mock-ups / prototypes) using various relevant technologies.					
	Course Learning Outcomes (CPMK)						
	CPMK-1	Understand the basic techniques of digital photography for product photo purposes.					
	CPMK-2	Know the types of product photography equipment and be able to operate.					
	CPMK-3	Able to produce and present product catalog photos.					
	CPMK-4	Able to produce and present photos of commercial products.					



		Matrik CPL – CPMK			
		CPMK	CPL-5	CPL-8	CPL-9
		CPMK-1	v		
		CPMK-2		v	
		CPMK-3			v
		CPMK-4			v
Brief Description MK	This course provides students with knowledge related to basic knowledge of digital photography for product photo purposes. After understanding and understanding the basic techniques, then students apply the basic theory by making product catalog photo projects and conceptual product photos. Upon completion of this course, students have the ability to plan concepts, shoot preparation and post-production of product photos.				
Study Material: Learning Material	Study Materials : 1. The basics of digital photography 2. Product photography equipment and equipment 3. The basics of lighting in photography 4. Shooting techniques in product photography 5. Catalogue photography 6. Conceptual photography				
Book	Main:				
	7. Peterson, Bryan. (2016). <i>Understanding Exposure, Fourth Edition: How to Shoot Great Photograph With Any Camera</i> . Paperback. 8. Sakura, Nath. (2022). <i>Product Photography: Lighting, Composition, and Shooting Techniques</i> . Rocky Nook, USA. 9. Wijaya, Typhoon. (2016). <i>Photo Story handbook: A Guide to Making Photo Stories</i> . Gramedia. Jakarta.				
	Supporter:				
	-				
Lecturer	Audit Yulardi, S.T., M.Ds.				
Subject requirements	-				



Week of	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assessment Weight (%)
		Indicator	Criteria & Forms	Luring (offline)	Daring (online)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Know the lecture lesson plan. Know the types and functions of photographic equipment.	Students remember lesson plans Students remember the types and functions of photographic equipment. Students can operate digital cameras.	Able to explain lesson plans Able to mention the types and functions of photographic equipment. Can operate digital cameras, understand the basic settings.	Lecture Discussion 150 minutes	-	Understanding Exposure, Fourth Edition: How to Shoot Great Photograph With Any Camera	
2	Understand the basis of the exposure triangle.	Students are able to apply the basis of the exposure triangle in photographic works.	Able to create photo works by applying exposure triangles according to the provisions.	Lecture Demonstration Discussion 150 minutes	-	Understanding Exposure, Fourth Edition: How to Shoot Great Photograph With Any Camera	4
3	Understand the direction and characteristics of light in photography	Students understand the various directions and characters of light.	Able to present previous photo works with a focus on discussing the use of light direction and character.	Demonstration Discussion 150 minutes	-	Understanding Exposure, Fourth Edition: How to Shoot Great Photograph With Any Camera	4



4	Understand the basic techniques of photography: point of view, composition and framing.	Students understand photo composition and framing techniques	Able to create photo works with composition and framing according to the provisions.	Demonstration Practice Discussion 150 minutes	-	Understanding Exposure, Fourth Edition: How to Shoot Great Photograph With Any Camera	4
5	Understand photo making techniques with artificial lighting.	Knowing the types of artificial lighting types Know the types of studio lighting equipment, accessories and their functions.	Able to explain the types of artificial lighting types and their accessories. Able to operate artificial light.	Demonstration Practice Discussion 150 minutes	-	Understanding Exposure, Fourth Edition: How to Shoot Great Photograph With Any Camera	4
6	Understanding photo creation using 1 artificial light source	Able to apply the basic theory of photography and produce photos with 1 artificial light source	Produce photos with 1 artificial light source according to the conditions	Practice, Discussion 150 minutes	-	Product Photography: Lighting, Composition, and Shooting Techniques.	4
7	Understand photo creation using more than 1 artificial light source	Able to apply the basic theory of photography and produce photos with more than 1 artificial light source	Produce photos with more than 1 artificial light source according to the conditions	Practice, Discussion 150 minutes	-	Product Photography: Lighting, Composition, and Shooting Techniques.	4
8	Midterm Evaluation						6
9	Understand the theory of product catalog photos	Given the understanding of product photos, catalogs and their functions.	Able to explain the meaning of product photos, catalogs, and their functions. Presenting previous catalog product photo works with discussions related to shooting	Lectures, Discussions 150 minutes	-	Product Photography: Lighting, Composition, and Shooting Techniques.	8



			techniques and lighting settings.				
10	Catalog product photos	Able to plan catalog photo projects	Produce detailed story board and shoot plans for the project	Practice, Discussion 150 minutes	-	Photo Story handbook: A Guide to Creating Photo Stories	8
11	Catalog product photos	Able to produce catalog product photos according to case studies	Shooting angle of view, proper lighting.	Practice, Discussion 150 minutes	-	Product Photography: Lighting, Composition, and Shooting Techniques.	9
12	Commercial product photos: conceptual	Able to plan conceptual commercial photo projects	Present concept planning, moodboard, lighting, and props well	Practice, Discussion 150 minutes	-	Product Photography: Lighting, Composition, and Shooting Techniques.	8
13	Commercial product photos: conceptual	Able to carry out commercial product photos	Carry out the shoot according to plan and on time.	Discussion Presentation Quiz 150 minutes	-	Product Photography: Lighting, Composition, and Shooting Techniques.	9
14	Post-production of commercial product photos	Able to process and correct photos	The results of photo correction are in accordance with the concept and needs of the presentation.	Discussion Presentation Quiz 150 minutes	-	Fiell, C., & Fiell, P. (2016). <i>The Story of Design: From the Paleolithic to the Present</i> . The Monacelli Press, LLC. Sparke, P. (2002). <i>A century of car design</i> . Mitchell Beazley.	9
15	Commercial product photos: conceptual	Able to process and correct photos	The results of photo correction are in accordance	Discussion Presentation Quiz	-	Fiell, C., & Fiell, P. (2016). <i>The Story of Design: From the</i>	9



			with the concept and needs of the presentation.	150 minutes		<i>Paleolithic to the Present.</i> The Monacelli Press, LLC.	
16	End of Semester Evaluation						10

**DP234637 ELECTIVE COURSE: MARKETING AND BUSINESS DESIGN**

	INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM						Document Code	
SEMESTER LEARNING PLAN								
COURSE (MK)	CODE		MK CLUSTER		CREDIT (sks)		SEMESTER	Date of Compilation
ELECTIVE COURSE: MARKETING AND BUSINESS DESIGN	DP234637		Product Management and Development		Teori= 1	Practice = 2	7	December 30, 2022
AUTHORIZATION 	RPS Developer			Coordinator RMK			Head of Study Program	
	Bambang Tristiyono, ST., M.Si			Arie Kurniawan, S.T, M.Ds			Bambang Tristiyono, ST., M.Si	
Learning Outcomes (CP)	CPL-PRODI charged to MK							
	CPL-3	V	Able to manage self-learning, and develop themselves as lifelong learners to compete at national, and international levels, in order to make a real contribution to solving problems by implementing information and communication technology and paying attention to sustainability principles and understanding technology-based entrepreneurship.					
	CPL-5	V	Able to understand and apply knowledge, insight and science related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural, economic and business, entrepreneurship, code of ethics and IPR.					
	CPL-9	V	Able to present ideation design concepts through verbal communication, visual media, and prototypes (Models / mock-ups / prototypes) using various relevant technologies.					
	Course Learning Outcomes (CPMK)							
	CPMK-1		Able to understand and analyze product marketing strategies, markets and market segmentation.					
	CPMK-2		Able to understand and analyze products, branding, and packaging, pricing strategy					
	CPMK-3		Able to understand, apply and analyze Distribution and channel management, promotion and marketing communications.					



	CPMK-4	Able to understand, apply and create business models and business plans, product design business case studies.			
	CPMK-5	Able to understand, apply product design business ethics.			
		Matrik CPL – CPMK			
		CPMK	CPL-3	CPL-5	CPL-9
		CPMK-1		V	V
		CPMK-2		V	V
		CPMK-3		V	V
		CPMK-4	V	V	V
		CPMK-5	V	V	
Brief Description MK	The Marketing and Product Design Business course provides the students with knowledge of how to manage product and business design from the marketing side. This course will provide the insights and skills needed to manage product and business design effectively and assist students in understanding how to create products that suit market needs and develop appropriate marketing strategies to increase product sales. Students will learn about marketing concepts and strategies, market analysis, market segmentation, products, branding, packaging, pricing strategy, distribution, channel management, promotion and marketing communication, product management, product development, business model, business plan, entrepreneurship, product innovation, SWOT analysis and marketing planning, product case studies and business design, design thinking, design management, business ethics and corporate social responsibility in product design.				
Study Material: Learning Material	Study Materials : 1. Product marketing strategy 2. Market analysis and market segmentation 3. Products, branding, and packaging 4. Pricing strategy 5. Distribusi dan channel management 6. Promotion and marketing communications 7. Business model and business plan 8. Product design business case study 9. Product design business ethics				



Pustaka		Main:		8. Kotler, P., & Keller, K. L. (2016). Marketing management (15th ed.). Pearson. 9. Ulrich, K. T., & Eppinger, S. D. (2018). Product design and development (6th ed.). McGraw-Hill Education. 10. Martin, R. L. (2009). The design of business: Why design thinking is the next competitive advantage. Harvard Business Review Press. 11. Burns, P. (2013). Entrepreneurial marketing: An effectiveness-driven approach. Routledge. 12. Shenkar, O. (2017). The new product development game. Oxford University Press. 13. Lockwood, T. (2010). Marketing strategies for design-driven companies. Rockport Publishers. 14. Foote, C. S. (2010). The business of design: Balancing creativity and profitability. HOW Books. 15. Mootee, I. (2017). Design thinking for strategic innovation: What they can't teach you at business or design school. John Wiley & Sons.			
		Supporter:					
				1. Hermawan, K. (2015). Marketing revolution: Changing the way we think, compete, and win the market. PT Gramedia Pustaka Utama. 2. Wahyudi, A. (2010). Product design marketing. PT Gramedia Pustaka Utama. 3. Santoso, H. (2010). Product design: From concept to production. PT Gramedia Pustaka Utama. 4. Kurniawan, Y. (2018). Innovative product design: Understand and apply design thinking. PT Gramedia Pustaka Utama.			
Lecturer		Bambang Tristiyono, ST., M.Si					
Subject requirements		-					
Week of	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assessm ent Weight (%)
(1)	(2)	Indicator	Criteria & Forms	Luring (offline)	Daring (online)	(7)	(8)



1	Students are able to understand the introduction, syllabus, tuition contract.	-	Criterion: Shape:	Learning Forms: Lecture [1x3x50 = 150 minutes] Learning Methods: Student Assignments:	-	Material: Introduction, syllabus, tuition contract. Book:	
2	Students are able to understand, analyze and express product marketing strategies	Accuracy and completeness in understanding, analyzing and submitting product marketing strategies	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Discovery Learning [1x3x50 = 150 menit] Student Assignments: Power point Presentation [1x3x50 = 150 minutes]	-	Material: Product marketing strategy Book: Kotler, P., & Keller, K. L. (2016). Ulrich, K. T., & Eppinger, S. D. (2018). Martin, R. L. (2009). T Burns, P. (2013). Foote, C. S. (2010). Hermawan, K. (2015). Wahyudi, A. (2010).	
3	Students are able to understand, analyze and present market analysis and market segmentation	Accuracy and completeness in understanding, analyzing and presenting market analysis and market segmentation.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape:	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Discovery Learning [1x3x50 = 150 menit] Student Assignments:	-	Material: Market analysis and market segmentation Library : Kotler, P., & Keller, K. L. (2016). Ulrich, K. T., & Eppinger, S. D. (2018). Martin, R. L. (2009). T	



			Non Test [Presentation & Q&A]	Power point Presentation [1x3x50 = 150 minutes]		Burns, P. (2013). Foote, C. S. (2010). Hermawan, K. (2015). Wahyudi, A. (2010).	
4	Students are able to understand, analyze and present products, branding, and packaging	Accuracy and completeness in understanding, analyzing and presenting products, branding, and packaging	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Discovery Learning [1x3x50 = 150 menit] Student Assignments: Power point Presentation [1x3x50 = 150 minutes]	-	Material: Products, branding, and packaging Book: Kotler, P., & Keller, K. L. (2016). Ulrich, K. T., & Eppinger, S. D. (2018). Martin, R. L. (2009). T Burns, P. (2013). Foote, C. S. (2010). Hermawan, K. (2015). Wahyudi, A. (2010).	
5	Students are able to understand, analyze and present products, branding, and packaging	Accuracy and completeness in understanding, analyzing and presenting products, branding, and packaging	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape:	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Discovery Learning [1x3x50 = 150 menit] Student Assignments:	-	Material: Products, branding, and packaging Book: Kotler, P., & Keller, K. L. (2016). Ulrich, K. T., & Eppinger, S. D. (2018). Martin, R. L. (2009). T Burns, P. (2013).	



			Non Test [Presentation & Q&A]	Power point Presentation [1x3x50 = 150 minutes]		Foote, C. S. (2010). Hermawan, K. (2015). Wahyudi, A. (2010).	
6	Students are able to understand, analyze and present products, branding, and packaging	Accuracy and completeness in understanding, analyzing and presenting products, branding, and packaging	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Discovery Learning [1x3x50 = 150 menit] Student Assignments: Power point Presentation [1x3x50 = 150 minutes]	-	Material: Products, branding, and packaging Book: Kotler, P., & Keller, K. L. (2016). Ulrich, K. T., & Eppinger, S. D. (2018). Martin, R. L. (2009). T Burns, P. (2013). Foote, C. S. (2010). Hermawan, K. (2015). Wahyudi, A. (2010).	
7	Students are able to understand, analyze and express Pricing strategy	Accuracy and completeness in understanding, analyzing and submitting Pricing strategies	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape:	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Discovery Learning [1x3x50 = 150 menit] Student Assignments: Power point Presentation [1x3x50 = 150 minutes]	-	Material: Pricing strategy Book: Kotler, P., & Keller, K. L. (2016). Ulrich, K. T., & Eppinger, S. D. (2018). Martin, R. L. (2009). T Burns, P. (2013). Foote, C. S. (2010).	



			Non Test [Presentation & Q&A]			Hermawan, K. (2015). Wahyudi, A. (2010).	
8	Midterm Written Exam-Evaluation						20%
9	Students are able to understand, analyze and express distribution and channel management	Accuracy and completeness in understanding, analyzing and presenting Distribution and channel management	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Discovery Learning [1x3x50 = 150 menit] Student Assignments: Power point Presentation [1x3x50 = 150 minutes]	-	Material: Distribusi dan channel management Book: Kotler, P., & Keller, K. L. (2016). Ulrich, K. T., & Eppinger, S. D. (2018). Martin, R. L. (2009). T Burns, P. (2013). Foote, C. S. (2010). Hermawan, K. (2015). Wahyudi, A. (2010).	
10	Students are able to understand, analyze and present Promotion and marketing communications	Accuracy and completeness in understanding, analyzing and submitting Promotions and marketing communication s	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape:	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Discovery Learning [1x3x50 = 150 menit] Student Assignments: Power point Presentation [1x3x50 = 150 minutes]	-	Material: Promotion and marketing communications Book: Kotler, P., & Keller, K. L. (2016). Ulrich, K. T., & Eppinger, S. D. (2018). Martin, R. L. (2009). T Burns, P. (2013).	20%



			Non Test [Presentation & Q&A]			Foote, C. S. (2010). Hermawan, K. (2015). Wahyudi, A. (2010).	
11	Students are able to understand, apply and create business models and business plans	Accuracy and completeness in understanding, implementing and making business models and business plans	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Contextual Learning [1x3x50 = 150 menit] Student Assignments: Power point Presentation [1x3x50 = 150 minutes]	-	Material: Business model and business plan Book: Kotler, P., & Keller, K. L. (2016). Ulrich, K. T., & Eppinger, S. D. (2018). Martin, R. L. (2009). T Burns, P. (2013). Foote, C. S. (2010). Hermawan, K. (2015). Wahyudi, A. (2010).	
12	Students are able to understand, apply and create product design business case studies	Accuracy and completeness in understanding, applying and making product design business case studies	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape:	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Contextual Learning [1x3x50 = 150 menit] Student Assignments: Power point Presentation [1x3x50 = 150 minutes]	-	Material: Product design business case study Book: Kotler, P., & Keller, K. L. (2016). Ulrich, K. T., & Eppinger, S. D. (2018). Martin, R. L. (2009). T Burns, P. (2013). Foote, C. S. (2010).	



			Non Test [Presentation & Q&A]			Hermawan, K. (2015). Wahyudi, A. (2010).	
13	Students are able to understand, apply and create product design business case studies	Accuracy and completeness in understanding, applying and making product design business case studies	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Contextual Learning [1x3x50 = 150 menit] Student Assignments: Power point Presentation [1x3x50 = 150 minutes]	-	Material: Product design business case study Book: Kotler, P., & Keller, K. L. (2016). Ulrich, K. T., & Eppinger, S. D. (2018). Martin, R. L. (2009). T Burns, P. (2013). Foote, C. S. (2010). Hermawan, K. (2015). Wahyudi, A. (2010).	40%
14	Students are able to understand, apply and create product design business case studies	Accuracy and completeness in understanding, applying and making product design business case studies	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Contextual Learning [1x3x50 = 150 menit] Student Assignments: Power point Presentation [1x3x50 = 150 minutes]	-	Material: Product design business case study Book: Kotler, P., & Keller, K. L. (2016). Ulrich, K. T., & Eppinger, S. D. (2018). Martin, R. L. (2009). T Burns, P. (2013). Foote, C. S. (2010).	



						Hermawan, K. (2015). Wahyudi, A. (2010).	
15	Students are able to understand, apply and create product design business ethics	Accuracy and completeness in understanding, applying and making product design business ethics	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Contextual Learning [1x3x50 = 150 menit] Student Assignments: Power point Presentation [1x3x50 = 150 minutes]	-	Material: Product design business ethics Book: Kotler, P., & Keller, K. L. (2016). Ulrich, K. T., & Eppinger, S. D. (2018). Martin, R. L. (2009). T Burns, P. (2013). Foote, C. S. (2010). Hermawan, K. (2015). Wahyudi, A. (2010).	
16	Final Evaluation						20%

**DP234638 ELECTIVE COURSE: DESIGN AND ETHNOGRAPHIC**

	INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code
SEMESTER LEARNING PLAN						
COURSE (MK)	CODE	MK CLUSTER	CREDIT (sks)		SEMESTER	Date of Compilation
ELECTIVE COURSE: DESIGN AND ETHNOGRAPHIC	DP234638	Kajian Desain dan Faktor Manusia	T=2	P=1	5	13 Desember 2022
OTORISATION	RPS Developer	RMK Coordiator	Head of Study Program			
	Irna Arlianti, S.T., M.Ds.	Hertina Susandari, S.T., M.T.	Bambang Tristiyono, S.T., M.Si			
Learning Outcomes	CPL study program charged to MK					
	CPL-1	Able to demonstrate attitudes and character that reflect: devotion to God Almighty, ethics and integrity, noble character, sensitivity and concern for social and environmental problems, respecting cultural differences and pluralism, upholding law enforcement that prioritizes the interests of the nation and wider community, through creativity and innovation, excellence, strong leadership, synergy, and other potential to achieve maximum results.				
	CPL-3	Able to manage one's learning, and develop oneself as a lifelong learner to compete at national and international levels, so that one can make a real contribution to solving problems by applying information and communication technology and paying attention to the principles of sustainability and understanding technology-based entrepreneurship.				
	CPL-4	Able to understand and apply knowledge about theoretical concepts of product design, including basic principles of design and aesthetics, material characteristics, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.				
	CPL-5	Able to understand and apply knowledge, insights and knowledge related to product design, including design history, design reviews, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, social culture, economics and business, entrepreneurship, code of ethics and HKI.				



	CPL-6	Able to design products and systems by considering all aspects that influence them, including basic design and aesthetic principles, material characteristics, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.							
	CPL-7	Able to research problems, and formulate and publish design needs and solutions for the present or future using relevant design and research methodologies.							
	CPL-8	Able and skilled in using design process tools that include manual or digital equipment according to technology and current developments.							
	CPL-9	Able to present design concept ideation through verbal communication, visual media, and prototypes (models/mock-ups/prototypes) using various relevant technologies.							
	Course Learning Achievements (CPMK)								
	CPMK-1	Students are able to understand ethnographic theory & principles in the design process (C2, P1, A2)							
	CPMK-2	Students are able to be sensitive to the order of socio-cultural values studied from habits, trends, history (C2, P1, A2)							
	CPMK-3	Students are able to formulate questions based on socio-cultural problems and phenomena (C3, P3, A3)							
	CPMK-4	Students are able to apply ethnographic methods to find solutions to design ideas (C3, P3, A3)							
	CPMK-5	Students are able to create design idea solutions in the form of design concepts (C4, A4, P4)							
		Matric CPL – CPMK							

CPMK	CPL-1	CPL-3	CPL-4	CPL-5	CPL-6	CPL-7	CPL-8	CPL-9
CPMK-1	V			V				
CPMK-2	V	V						
CPMK-3	V	V				V		
CPMK-4	V	V				V	V	
CPMK-5	V	V						V

MK Description	Course on integration of ethnographic theory and its application in creating product design idea solutions							
Learning Materials	1. Ethnographic theories and principles in product design (Fase Emphasize, Human behaviour & Persona) 2. Ethnographic theories and principles in product design (Local Genius, Indonesian Cultural Identity, Transformation of Traditions)							



	3. Ethnographic methods in product design 4. Ethnography application in product design	
References	Primary :	
	1. Müller, F. (2021). <i>Design ethnography: epistemology and methodology</i> (p. 93). Springer Nature. 2. Cantarella, L., Marcus, G. E., & Hegel, C. (2019). <i>Ethnography by design: Scenographic experiments in fieldwork</i> . Taylor & Francis.	
	Secondary:	
	1. Walker, S., Evans, M., Cassidy, T., Holroyd, A. T., & Jung, J. (Eds.). (2018). <i>Design roots: Culturally significant designs, products and practices</i> . 2. Nugraha, A. (2012). <i>Transforming tradition: A method for maintaining tradition in a craft and design context</i> .	
Supporting Lecturer		
Required courses	-	

Weeks	Final abilities of each learning stage (Sub-CPMK)	Evaluation		Forms of Learning, Learning Methods, Student Assignment, [Estimated Time]		Learning Materials [References]	Assessment Weight (%)
		Indicator	Criteria & Type	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students are able to understand ethnographic theories & principles in the design process (C2, P1, A2)	The accuracy of identifying the relationship between ethnographic theories & principles and product design science	Criteria : Precision and insight Type : Non test	Type : Lecture Discussion Method : Discussion Assignment : Create simple		Ethnographic theory and principles in product design – (Introduction of Ethnography x Product Design) Emphasize, Human Behaviour, Persona	5



				examples of the application of ethnographic theories & principles in everyday life along with target user personas (Task 1) Estimated time : 1x2x50'		References : 1. Müller, F. (2021). <i>Design ethnography: epistemology and methodology</i> (p. 93). Springer Nature. 2. Cantarella, L., Marcus, G. E., & Hegel, C. (2019). <i>Ethnography by design: Scenographic experiments in fieldwork</i>. Taylor & Francis.	
2	Students can be sensitive to the order of socio-cultural values studied from habits, trends, history (C2, P1, A2)	Sensitivity identifies the existence of local sources of genius in an area	Criteria : Insight and Assignment Type : Non test	Type : Lecture Discussion Method : Discussion Assignment : Conduct existing studies about local sources of genius in		Ethnographic theory and principles in product design – Local Genius References: Walker, S., Evans, M., Cassidy, T., Holroyd, A. T., & Jung, J. (Eds.). (2018). <i>Design roots:</i>	5



				an area (Task 2) Estimated time : 1x2x50'		Culturally significant designs, products and practices.	
3	Students can be sensitive to the order of socio-cultural values studied from habits, trends, history (C2, P1, A2)	The suitability of ethnographic application ideas to existing studies	Criteria : Sensitivity and assignment Type : Non test	Type: Workshop Method : Case based learning Assignment : Develop design idea solutions about local genius based on existing studies (Task 3) Estimated time : 1x2x50'		Ethnography application in product design – Local Genius References : Walker, S., Evans, M., Cassidy, T., Holroyd, A. T., & Jung, J. (Eds.). (2018). Design roots: Culturally significant designs, products and practices.	5
4	Students can be sensitive to the order of socio-cultural values studied from habits, trends, history (C2, P1, A2)	Sensitivity identifies the existence of Indonesian cultural identity in an area	Criteria : Insight and Assignment Type : Non test	Type : Lecture Discussion Methods : Discussion Assignment : Carrying out		Ethnographic Theory and principles in product design – Indonesian cultural identity References :	5



				existing studies on the Indonesian Cultural Identity of a region (Task 2) Estimated time : 1x2x50'		Walker, S., Evans, M., Cassidy, T., Holroyd, A. T., & Jung, J. (Eds.). (2018). Design roots: Culturally significant designs, products and practices.	
5	Students can be sensitive to the order of socio-cultural values studied from habits, trends, history (C2, P1, A2)	The suitability of ethnographic application ideas to existing studies	Criteria : Sensitivity and assignment Type : Non test	Type : Workshop Method : Case based learning Assignment : Develop design idea solutions about local genius based on existing studies eksisting (Task 3) Estimated Time: 1x2x50'		Ethnographic application in product design – Indonesian cultural identity References : Walker, S., Evans, M., Cassidy, T., Holroyd, A. T., & Jung, J. (Eds.). (2018). Design roots: Culturally significant designs, products and practices.	5
6	Students can be sensitive to the order of socio-cultural values studied from habits, trends, history (C2, P1, A2)	Sensitivity identifies the phenomenon of transformation of	Criteria : Insight and Assignment Type :	Type : Lecture Discussion Method :		Ethnographic theory and principles in product design –	5



		traditions that exist in an area	Non test	Discussion Assignment : Carrying out existing studies on the Transformation of Traditions in an area (Task 2) Estimated time : 1x2x50'		Transformation Tradition References : Nugraha, A. (2012). Transforming tradition: A method for maintaining tradition in a craft and design context.	
7	Students can be sensitive to the order of socio-cultural values studied from habits, trends, history (C2, P1, A2)	The suitability of ethnographic application ideas to existing studies	Criteria : Sensitivity and assignments Type : Non test	Type : Workshop Methods : Case based learning Assignments : Develop design idea solutions about local genius based on existing studies existing (Task 3) Estimated time : 1x2x50'		Ethnographic application in product design – Transformation Tradition References : Nugraha, A. (2012). Transforming tradition: A method for maintaining tradition in a craft and design context.	5
Mid Semester Evaluation							



9	Students can formulate questions based on socio-cultural problems and phenomena (C3, P3, A3)	Suitability of the topic raised to ethnographic methods	Criteria : Sensitivity, Creativity Type : Non test	Bentuk : Lecture Respond Method : Small group discussion Assignment : [Group project] Mapping alternative topics with typical cultural themes in mind-mapping (Task 4) Estimated time : 1x2x50'	Ethnographic method in design product – Brief Project Brainstorming topic (UKM ; workshop craftman) References : 1. Müller, F. (2021). <i>Design ethnography: epistemology and methodology</i> (p. 93). Springer Nature. 2. Cantarella, L., Marcus, G. E., & Hegel, C. (2019). <i>Ethnography by design: Scenographic experiments in fieldwork</i> . Taylor & Francis.	5
10, 11	Students can apply ethnographic methods to find solutions to design ideas (C3, P3, A3)	Accuracy in data collection methods, sensitivity in capturing	Criteria : Sensitivity and assignments	Type : Field practice Method : Discovery Learning	Ethnographic method in product design – Emphasize (Field Data Collection)	20



		phenomena, micro gestures, behavioral patterns	Type : Non test	Assignment : [Group project] Conduct field surveys using selected data collection methods (Task 5) Estimated Time : 2x2x50'		Participatory research ; shadowing ; diary studies Identify problems, determine extreme users based on Indonesian cultural values References : 1. Müller, F. (2021). <i>Design ethnography: epistemology and methodology</i> (p. 93). Springer Nature. 2. Cantarella, L., Marcus, G. E., & Hegel, C. (2019). <i>Ethnography by design: Scenographic experiments in fieldwork</i> . Taylor & Francis.	



12	Students can create design idea solutions in the form of design concepts (C4, A4, P4)	Suitability of idea solutions to problems; regional phenomenon	Criteria : Sensitivity, mastery, and innovation Type : Non test	Type : Workshop Method : Discovery Learning Assignment : Map out possible idea solutions based on field data collection – create a scrapbook report (Task 6) Estimated time : 1x2x50'		Ethnographic method in product design – Define Brainstorming idea solutions (How might we?) based on Indonesian cultural values References : 1. Müller, F. (2021). <i>Design ethnography: epistemology and methodology</i> (p. 93). Springer Nature. 2. Cantarella, L., Marcus, G. E., & Hegel, C. (2019). <i>Ethnography by design: Scenographic experiments in fieldwork</i> . Taylor & Francis.	10



13	Students can create design idea solutions in the form of design concepts (C4, A4, P4)	Presentation of ideas that are representative of the problem; regional phenomenon	Criteria : Sensitivity, mastery, and innovation Type : Non test	Type : Workshop Respond Method : Discovery Learning Assignment : [Group project] Make an ideation sketch based on the idea solution in the scrapbook report (task 7) Estimated time : 1x2x50'		Ethnographic method in product design – Ideation Ideation of designs (products, services, systems) based on Indonesian culture References : 1. Müller, F. (2021). <i>Design ethnography: epistemology and methodology</i> (p. 93). Springer Nature. 2. Cantarella, L., Marcus, G. E., & Hegel, C. (2019). <i>Ethnography by design: Scenographic experiments in fieldwork</i> . Taylor & Francis.	10
14	Students can create design idea solutions in the form of design concepts (C4, A4, P4)	Presentation of ideas that are representative of	Criteria :	Type : Workshop practice		Ethnographic methods in	10



		the problem; regional phenomenon	Sensitivity, Mastery, and innovation Type : Non test	Method : Case based Learning Assignment : [Group project] Make a design idea a reality (Task 8) Estimated time : 1x2x50'		product design – Prototype Manifestation of design (prototype; mock-up) References : 1. Müller, F. (2021). <i>Design ethnography: epistemology and methodology</i> (p. 93). Springer Nature. 2. Cantarella, L., Marcus, G. E., & Hegel, C. (2019). <i>Ethnography by design: Scenographic experiments in fieldwork</i> . Taylor & Francis.	
15	Students can create design idea solutions in the form of design concepts (C4, A4, P4)	Accuracy of testing methods for users and sensitivity to feedback	Criteria : Sensitivity and assignment	Type : Field practice Methods : User testing		Ethnographic method in product design – Testing Testing on craftsmen;	10



			Type : Non test	Assignment : [Group project] Present design results to users and test them (Task 9) Estimated time : 1x2x50'		businessman (User testing ; in depth interview ; FGD ; card sorting) References : 1. Müller, F. (2021). <i>Design ethnography: epistemology and methodology</i> (p. 93). Springer Nature. 2. Cantarella, L., Marcus, G. E., & Hegel, C. (2019). <i>Ethnography by design: Scenographic experiments in fieldwork</i> . Taylor & Francis.	
16	Final Semester Evaluation / Final Exams						100



UG234903 Islamic Religion

		INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FAKULTAS DESAIN KRETIF DAN BISNIS DIGITAL, PRODI DESAIN PRODUK				
COURSE (MK)		CODE	MK CLUSTER	CREDIT (sks)	SEMESTER	Date of Compilation
Islamic Religion		UG234901	Rumpun MKWK	2 sks	6 / 7	28-10-2022 /
OTORISATION 		RP Coordinator		RMK Coordinator		Head of Study Program Bambang Tristiyono, ST., M.Si
		Ttd Koordinator		Ttd RMK		
Learning Outcomes	CPL-PRODI	1. Be devoted to God Almighty and be able to show a religious attitude (S.1); 2. Uphold human values in carrying out duties based on religion, morals and ethics (S.2); 3. Internalize academic values, norms and ethics (S.8); 4. Able to apply logical, critical, systematic and innovative thinking in the context of developing or implementing science and technology that pays attention to and applies humanities values by their field of expertise (KU.1				
	CP MK					



	1. Apply the Qur'ani (KK.1); 2. Skilled 3. Skilled at Ihsan 4.	The essence of human relations with God, with fellow humans and with the natural environment in the paradigm resents the results of conceptual and/or empirical studies related to the essence and urgency of Islamic spiritual values one of the determinannts in building a nation with character (KK.2); Act consistently towards ence of the main principles of Islamic teaching as the implementation of Faith, Islam, as well as g Islam <i>rahmatan lil alamin</i> (KK.3); iderstand the essence of Islamic Religious Education as a component of Compulsory Courses and spiritual values which are one of the determinants in building national character (P.1);
	5. Understand the correlation between Islamic teachings and their contextualization in modern life as <i>rahmatan lil alamin</i> (P.3); 6. Master the application of Islamic concepts regarding science, technology, social-humanities, and issues of people's welfare (P.4);	
MK Description	This Islamic Religious Education course discusses and explores material with the substance of human relations with Allah to create a generation of piety using the Qur'anic paradigm; human relations with fellow humans to integrate Faith, Islam and Ihsan; as well as human relations with their environment to ground Islam to realize prosperity. In this way, a religious, humanist, broad-minded and caring generation was born.	



Study Materials	1. Building a Qur'anic Paradigm 2. Human God as a Spiritual Need 3. Integration of Faith, Islam and Ihsan to Form Noble Morals 4. Religion Creates Happiness 5. Grounding Islam in Indonesia 6. Religious Moderation Creates Unity in Diversity 7. Islamic Philanthropy: Zakat, Alms and Waqf 8. Role and Function of Mosques for the Welfare of the Community 9. Islam facing the Development of Science, Technology and Art 10. Contribution of Islam in the Development of World Civilization	
References	Primary:	1. Wahyuddin, dkk., <i>Pendidikan Agama Islam Membangun Karakter Mahasiswa di Perguruan Tinggi</i>, Surabaya, Penerbit Litera Jannata Perkasa, 2019. 2. Dirjen Pembelajaran dan Kemahasiswaan Kemenristekdikti, <i>Pendidikan Agama Islam untuk Perguruan Tinggi</i>, Jakarta, Dirjen Belmawa, 2016. 3. Imarah, Muhammad, <i>Islam dan Pluralitas: Perbedaan dan Kemajemukan dalam Bingkai Persatuan</i>, Jakarta, Gema Insani, 1999.
	Secondary :	
Instructional Media	Software :	Hardware :
	MyITSclassroom Al-Qur'an, As-Sunnah, Zakat, Waris Application	Islamic Religious Education Textbook Supporting Reference Book



Team Teaching	Team of Lecturers on Islamic Religion

Required Course		-					
Weeks	Ability end of each stage learning (Sub-CP-MK)	Evaluation		Type of Learning, Learning Methods and Assignment [Estimated Time]		Learning Materials [References]	Assessment Weight (%)
		Assessment Indicator	Criteria & Type of Assessment	Online	Offline		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	P.1, KK.1	Assignment Accuracy application	Accuracy of task implementation Task results			• Introduction • College Contract • Assignment	5
2-3	P.1, KK.2, KK.3	• Quality of assignment • Presentation skills • Accuracy of answers and arguments	• Task results • Presentation of assignment results • Discussion			• Building the Qur'ani paradigm • Human have God as a necessity spiritual	15
4-5	P.2, KK.3	• Quality of assignment • Presentation skills • Accuracy of answers and arguments	• Task results • Presentation of assignment results • Discussion			• Ability to read the AlQur'an • Integration of Faith, Islam and Ihsan Shapes Morals Glorious	15



6-7	P.2, P.3, KK.3	Quality of assignment Presentation skills Accuracy of answers and arguments	Task results Presentation of assignment results Discussion		TM = 100 minute PT = 90 minute BM = 90 minute	- Religion creates happiness - Grounding Islam in Indonesia	15
8	Mid Semester Evaluation – is an evaluation activity of the achievements of sub CP MK						
9-10	P.2, P.3, KK.3	Quality of assignment Presentation skills	Task results Presentation of task results Discussion		TM = 100 minute PT = 90 minute BM = 90 minute	Religious Moderation Creates Unity in Diversity	15
		Accuracy of answer and arguments				Islamic Philanthropy: Zakat, Alms dan Waqf	
11-12	P.3, P.5, KK.4	Quality of assignment Presentation skills Accuracy of answers and arguments	Task results Presentation of task results Discussion		TM = 100 minute PT = 90 minute BM = 90 minute	- The ability to memorize the AlQur'an - The Role and Function of Mosques for the Welfare of the People	15
13-14	P.4, P.5, KK.4,		Task results				20



	KK.5	Quality of assignment Presentation skills Accuracy of answers and arguments	Presentation of task results Discussion	TM = 100 minute PT = 90 minute BM = 90 minute	Islam Facing the Development of Science, Technology and Art Contribution of Islam in the Development of Civilization World	
15-16	Review of Assignment Results & Final Semester Evaluation is an evaluation activity for the achievement of sub CP MK, CP MK and CPL which is charged to MK					
Total						100



UG234911 PANCASILA

 INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FAKULTAS DESAIN KRETIF DAN BISNIS DIGITAL, PRODI DESAIN PRODUK							
SEMESTER LEARNING PLANS							
COURSE (MK)		CODE	MK CLUSTER	CREDIT (sks)		SEMESTER	Date of Compilation
Pancasila		UG234911	SKPB	2 sks	0	VI/VII	28 Oktober 2022
AUTHORIZATION		RPS Development Lecturer		RMK Coordinator		Head of Study Program	
		Aurelius Ratu, S.S., M.Hum. Banu Prasetyo, S.Fil., M.Phil. Dr. Soedarso		Banu Prasetyo, S.Fil., M.Phil.		Bambang Tristiyono, ST., M.Si	
Learning Outcomes	Study Program CPL charged to MK						
	CPL 1 (S3)	Contribute to the advancement of civilization by improving the quality of life in society, nation, and state, and the progress of civilization based on Pancasila					
	CPL 2 (S5)	Respect the diversity of cultures, perspectives, religions, and beliefs, as well as the opinions or original discoveries of others					
	CPL 3 (S6)	Collaborate while maintaining social sensitivity and concern for society and the environment					
	CPL 4 (KU3)	Capable of examining the implications of science and technology development or implementation that pays attention to and applies humanities values based on scientific principles, procedures, and ethics in order to produce solutions, ideas, designs, or art criticisms					



	Study program CPL charged to MK – If CP MK is an ability at each learning stage CP MK = Sub CP MK					
	CP MK 1/Sub CPMK 1	1. ry in strengthening national identity and Indonesian national identity				
	CP MK 2/Sub CPMK 2	2. Capable of analyzing factual nationality issues from a Pancasila perspective				
	CP MK 3/Sub CPMK 3	3. Capable of analyzing the concept of developing science and technology in accordance with Pancasila values				
	CP MK 4/Sub CPMK 4	4. Capable of demonstrating social sensitivity, environmental stewardship, and patriotism for one's homeland				
Map CPL – CP MK						
		CPMK	CPL1	CPL2	CPL3	CPL4
		CPMK 1		X	X	X
		CPMK 2	X		X	X
		CPMK 3	X	X		X
		CPMK 4	X	X	X	



MK description	One of the general/national required subjects is the Pancasila course. Students will learn about Pancasila in this lecture and experience learning activities that will help them understand and be more aware of : a sense of nationality and love for the homeland; becoming competitive, highly disciplined, and actively contributing to the creation of a peaceful life based on the Pancasila value system. Students should be able to recognize themselves as decent citizens capable of supporting their country after this lesson. Intelligent, cultured, and responsible Indonesian citizens who use their skills in science, technology, and the arts to ensure the survival of the country.	
Student Materials: Learning materials	1. The urgency of Pancasila in higher education 2. Pancasila and Indonesia history 3. Pancasila as the Indonesia national principle and national ideology 4. Pancasila as philosophy system 5. Pancasila as ethic system 6. Pancasila as the foundation of science, technology and art development	
References	Primary:	
	1. Kemenristekdikti. 2016. <i>Pendidikan Pancasila Untuk Perguruan Tinggi</i>. Jakarta: Dirjen Belmawa Kementerian Dikti	



	Secondary: 1. Bahar, Saafroedin (ed). 1992. <i>Risalah Sidang Badan Penyelidik Usaha-Usaha Persiapan Kemerdekaan Indonesia (BPUPKI): Panitia Persiapan Kemerdekaan Indonesia (PPKI) 29 Mei – 19 Agustus 1945</i>. Jakarta: Sekretariat Negara Republik Indonesia. 2. Bertens, Kees. 2004. <i>Etika</i>. Jakarta: Gramedia. 3. Kattsof, Louis O. 1992. <i>Pengantar Filsafat</i>. Yogyakarta: Tiara Wacana. 4. Latif, Yudi. 2011. <i>Negara Paripurna</i>, Jakarta: PT. Gramedia Pustaka Utama. 5. Latif, Yudi. 2018. <i>Wawasan Pancasila: Bintang Penuntun Untuk Pembudayaan</i>. Jakarta: Mizan. 6. Magnis-Suseno, Franz. 2006. <i>Etika Politik: Prinsip-prinsip Moral Dasar Kenegaraan Modern</i>. Jakarta: Penerbit Gramedia Pustaka Utama. 7. Sukarno. 2001. <i>Tjamkan Pancasila Dasar Falsafah Negara</i>. Jakarta: Panitia Nasional Peringatan Lahirnya Pancasila 1 Juni 1945 – 1 Juni 1964. 8. Soedarso. 2014. <i>Filsafat Pancasila Identitas Indonesia</i>. Surabaya: Pustaka Radja.	
Assigned Lecturer	Pancasila Lecturer's Team ITS: Aurelius Ratu, S.S., M.Hum. Banu Prasetyo, S.Fil., M.Phil. Dr. Soedarso Deti Rahmawati, S.IP., M.T.	
Instructional Media	Software	Hardware
	My ITS Classroom	Laptop LCD
Required courses	-	



Weeks	The final ability of each learning ability (CPMK)	Evaluation		Form of Learning; Learning Methods; Student Assignments;		Learning Materials	Assessment Weight (%)
		Indicator	Assessment Instrument & Technique				
(1)	(2)	(3)	(4)	Offline (5)	Online (6)	(7)	(8)
1-3	CPMK1: Understanding the importance of national history and national identity of the Indonesian nation	1. Comprehensive in identifying the forms of local wisdom that exist in Indonesia 2. Accuration is explaining the chronology of the proposal, preparation, ratification of Pancasila and the 1945 constitution	• Assessment Instruments: Rubric • Technical Nontes: Observation (Attitude) Performance (Task)	• Type: Lecture • Method Discussion [(TM: 1 week x (2 credits x 50 minutes))] Task 1: Summarizing and describing the process of Proposing, Formulating, and Ratifying Pancasila from the BPUPKI History Book	• Type: Zoom • Method: Discusion [(TM: 1 week x (2credits x 50 minutes))] Task 1: Summarizing and describing the process of Proposing, Formulating, and Ratifying Pancasila from the BPUPKI History Book	• Reference: 1. Kemenristekdikti. 2016. <i>Pancasila Education for Higher Education</i>. Jakarta: Director General of Belmawa, Ministry of Higher Education. • Learning Materials: 1. Pancasila in the perspective of the Indonesia Nation	10



4-7	CPMK2: Able to analyze the actual problems of nationality	1. Accuracy in explaining the concept of Pancasila as the ideology and basis of the state 2. Accuracy in mentioning the relationship between Pancasila and the 1945 Constitution 3. Accuracy in mentioning and providing solutions to SARA problems in Indonesia	• Assessment Instruments: Rubric • Test Technique: Performance (Task)	• Type: 1. Lectures 2. Responses • Method 1. Discussion 2. <i>Discovery Learning</i> [(TM: 2 weeks x (2 credits x 50 minutes))] • Task 1: Making a review of the film "71 Into the Fire" in the perspective of ideology • Task 2: Group presentation with the theme "Pancasila as Ideology" [(PT+BM: (2+2) x (2sks x 60 minutes))]	• Type: 1. Lectures 2. Responses • Method 1. Discussion 2. <i>Discovery Learning</i> [(TM: 2 weeks x (2 credits x 50 minutes))] • Task 1: Making a review of the film "71 . Into the Fire" in the perspective of ideology • Task 2: Group presentation with the theme "Pancasila as Ideology" [(PT+BM: (2+2) x (2sks x 60 minutes))]	• Reference: 1. Kemenristekdikti. 2016. <i>Pancasila Education for Higher Education</i>. Jakarta: Director General of Belmawa, Ministry of Higher Education. 2. Bahar, Saafroedin (ed). 1992. <i>Minutes of the Session (BPUPKI): (PPKI)</i> Jakarta: State Secretariat of the Republic of Indonesia. • Learning Materials: Pancasila as the Basis of the Republic of Indonesia Pancasila as An Ideology	15



8	Mid-semester Evaluation is in The Form of a Mid-term Exam Assessment Instrument: Rubric Assessment Technique: Test						20
9-12	CPMK3: Able to analyze the actual problems of nationality	1. Accuracy in analyzing the notion of science 2. Completeness and accuracy in analyzing technological and scientific problems based on Pancasila Values	• Assessment Instrument: Rubric • Nontes Technical: 1. Observation 2. Performance	• Type: Lecture • Method: 1. Discussion 2. <i>Small Group Disussion</i> 3. <i>Project Based Learning</i>, [(TM: 2 weeks x (2 credits x 50))] • Task 1: Exploring videos from the perspective of https://www.youtube.com/watch?v=8dnVZibrV6g ethics • Task 2: Group presentation with the theme "Pancasila as an Ethical system"	• Type: Lecture • Method: 1. Discussion 2. <i>Small Group Disussion</i> 3. <i>Contextual Learning</i> [(TM: 2 weeks x (2 credits x 50 minutes))] • Task 1: Examining videos from the perspective of https://www.youtube.com/watch?v=8dnVZibrV6g • Task 2: Group presentation with the theme "Pancasila as an Ethical system" (via zoom)	• Reference: 1. Kemenristekdikti. 2016. <i>Pendidikan Pancasila Untuk Perguruan Tinggi</i>. Jakarta: Dirjen Belmawa Kementerian Dikti. 2. Latif, Yudi. 2018. <i>Wawasan Pancasila: Bintang Penuntun Untuk Pembudayaan</i>. Jakarta: Mizan. 3. Kattsof, Louis O. 1992. <i>Pengantar Filsafat</i>. Yogyakarta: Tiara Wacana. 4. Bertens, Kees. 2004. <i>Etika</i>. Jakarta: Gramedia. • Learning Materials: 1. Pancasila as a philosophical system 2. Pancasila as an Ethical system Pancasila as the basis for the	10



				[(PT+BM: (2+2) x (2sks x 60 minutes))]	[(PT+BM: (2+2) x (2sks x 60 minutes))]	Development of Science	

13-15	CPMK4: Having social sensitivity, environmental concern and love for the homeland	1. Accuracy in explaining the implementation 2. Completeness and accuracy in implementing the attitude of love for the homeland and environmental concerns as outlined in <i>the project</i>	1. Assessment Instruments: Rubric 2. Technical Nontes: Observation Performance	• Type: Lecture • Method 1. Discussion 2. <i>Project Based Learning</i>, [(TM: 1 week x (2sks x 50 minutes))] • Task 1: Group assignment by creating videos based on group themes with types: reportage, <i>short movie</i>, <i>documenter</i>. [(PT+BM: 1+1) x (1credit x 60 minutes)]	• Type: Zoom [(TM: 2 weeks x (2 credits x 50 minutes))] • Method: 1. Diskusi 2. <i>Small Group Disussion</i> 3. <i>Contextual Learning</i> [(TM: 2 minggu x (2sks x 50 menit))] • Task 1: Group assignment by creating videos based on group themes with types: reportage, <i>short movie</i>, <i>documenter</i>. https://www.youtube.com/watch?v=Xo2VjprfgEU	• Reference: 1. Kemenristekdikti. 2016. <i>Pendidikan Pancasila Untuk Perguruan Tinggi</i>. Jakarta: Dirjen Belmawa Kementerian Dikti. 2. Bertens, Kees. 2004. <i>Etika</i>. Jakarta: Gramedia. • Learning Materials: 1 Pancasila as an Ethical system 2 Pancasila as the basis for the Development of Science	20



16	Final Exams dan Final Semester Evaluation Assessment Instrument: RubricTechnique Assessment: Test	25
	Total Weighted Value	100



UG234914 ENGLISH LANGUAGE

		INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM				Document code	
SEMESTER LEARNING PLAN							
COURSE (MK)		CODE	MK CLUSTER	CREDIT (sks)		SEMESTER	Date of Compilation
ENGLISH LANGUAGE		UG234914		2 -		6 or 7	
AUTHORIZATION 		RPS - Developer		RMK Coordinator		Head of Study Program	
						Bambang Tristiyono, ST., M.Si	
Learning Outcome (CP)		Study Program CPL charged to MK					
		Attitude	Capable to show attitudes and characters that reflect: piety to God Almighty, ethics and integrity, virtuous character, sensitive and caring for social and environmental issues, respecting cultural differences and plurality, upholding law enforcement, prioritizing the interests of the nation and the wider community, through creativity and innovation, externality, strong leadership, synergy, and other potentials possessed to				



		achieve maximum results.	
	General skill	Able to study and utilize science and technology in order to apply it to the field of expertise of the study program, and able to make decisions precisely from the results of own work and group work in the form of final project reports or other forms of learning activities whose output is equivalent to the final project through logical, critical, systematic and innovative thinking.	
	Course Learning Outcomes (CLO)		
	CPMK-1	Students are able to analyze texts by applying reading strategies effectively.	
	CPMK-2	Students are able to write five-paragraph essays by applying the essay writing structure correctly.	
	CPMK-3	Students are able to make academic presentations by applying presentation strategies correctly.	
	CPMK-4	Students are able to integrate language skills for the needs of preparing for the world of work.	
Map of PLO - CLO	PLO-CLO Matrix Note: CPL is used by SN Dikti		
		S	KU
	CPMK 1	✓	✓
	CPMK 2	✓	✓
	CPMK 3	✓	✓
	CPMK 4	✓	✓
Course Description	The English course as an ITS characteristic course is designed to help students integrate English language skills to meet academic needs and language needs in the world of work.		



Study Materials	Reading Strategies: Skimming, Scanning, Reading for detail comprehension Vocabulary in context Text Organization/text structure Signal words for text organization Sentence Structure Paragraph Writing Process Essay Writing The Structure of an Essay Writing an Essay References Citation Academic Presentation Planning: Establishing the context Structuring Your Presentation Using Visual Aids Delivering your speech Dos and Don'ts English for Workplace Addressing Selection Criteria Writing Your CV/Resume Writing Your Application At The Interview	
References	Main :	



1. Hogue Ann, Oshima Alice, "Introduction to Academic Writing", Longman,1997
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3. Mikulecky, Beatrice S, "Advanced Reading Power", Pearson Education, New York, 2007
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3. Bonamy David, “Technical English,” Pearson Education, New York, 2011
4. Fellag Linda Robinson, “College Reading,” Houghton Mifflin Company, 2006
5. Fuchs Marjorie & Bonner Margaret, “ Focus on Grammar; An Integrated Skills Approach,” Pearson Education, Inc, 2006
6. Hague Ann, “ First Steps in Academic Writing,” Addison Wesley Publishing Company, 1996



Instructors		Dra. Endang Susilowati, M. Kes Ratna Rintaningrum, S.S., M.Ed., Ph.D Arfan Fahmi, S.S., M.Pd Umi Trisyanti, S.S., M.Pd Hermanto, S.S., M.Pd Adi Suryani, S.S., M.Ed., Ph.D Dr. Kartika Nuswantara, S.Pd., M.Pd					
Pre-required subject		Nothing					
Meeti n g	(Sub-CPMK) Learning outcome	Assessment		Learning Method, Teaching Method, Student Assignments Learning methods-time		Learning Materials (References)	Weight (%)
		Indicators	Criteria & Form				
(1)	(2)	(3)	(4)	Offline	Online	(7)	(8)
1 - 4	CPMK 1: Students are able to analyzetexts by applying reading strategies effectively.			- lecture - discussion (4 x 100 minutes)	- MyITS Classroom	Reading Strategies: Skimming: generalidea Scanning: specific information	20%



	Sub CPMK 1.1: Students are able to apply reading strategies scanning, skimming and reading for detail comprehension to analyze text.	1.1.1. Students are able to answer questions orally and in writing correctly.	Tes: -Exercise - Project: Group task (reading) report: comprehension,			reading for detail comprehension: analysing the content of the text, main idea, Predicting	



		1.1.2. Students are able to predict the content of the text. 1.1.3. Students are able to identify the main idea in each paragraph. 1.1.4. Students are able to explain the content of the text in general. 1.1.5. Students are able to explain the special information contained in the text.	vocabulary in context, text structure, summary: text/note taking: list, column, mind mapping/ Table/ Diagram) - Quiz			connecting (what I already know to what I am reading; previous part to what I am reading) Evaluating Asking questions Checking for answer to questions Translating Linguistics elements: Grammatical: sentence structure, clause types, tense Lexical/discourse: reference item, conjunction, linking expression Vocabulary in context: synonyms, contextual redefinition, what do you mean? (select words with multiple	



						meanings), categorising (which words belong to), prefixes text. Organization/text structure (chronological order,cause and effect, procedure/process, comparison and contrast, critique)	



	Students are able to identify the structure of the text.	1.2.2. Students are able to identify the structure of the text. 1.2.3. Students are able to analyze text, both in the form of written summaries, diagrams, and tables.					



5 - 9	CPMK 2: Students are able to write five paragraphs of essays writing structure correctly. Sub CPMK 2.1: Students are able to write sentences using Phrases toClauses correctly.	2.1.1. Students are able to write sentences using Phrases toClauses correctly.	Test and non-test: - Sentence structure test - Project: Group Tasks: Essay Writing	Group discussions and simulations (5 x 100 minutes)	MyITS Classroom	Sentence Structure, types of sentences, clauses types, phrases,cohesive devices, transitions Paragraph What is paragraph? Paragraph organization: Topic sentence Supporting sentences Concluding sentence Writing Process (Stages of Writing)Pre-writing: Step 1: Choose a topic	25%



	Sub CPMK 2.2: Students are able to use Cohesive devices in writing correctly.	2.2.1. Students are able to write sentences using cohesive devices in paragraphs.				Step 2: Gather ideas Step 3: Organise Drafting (Writing itself): Step 4: Write. Reviewing and Revising Step 5: Review Structure and Content rewriting. Step 6: Revise Structure and content Proofread Make final corrections Essay Writing What is an Essay? The Structure of an Essay Introductory Paragraph: General Introductory Statement Thesis Statement Order of	
	Sub CPMK 2.3: Students are able to write essays correctly.	2.3.1 Students are able to write a thesis statement in an essay paragraph. 2.3.2. Students are able to write according to the stages of writing an essay.					



		2.3.3. Students are able to write an introduction paragraph for an essay.				Argument Body: Paragraph 1 Paragraph 2 Paragraph 3	



		2.3.4. Students are able to write an introduction paragraph for an essay. 2.3.5. Students are able to write conclusions by making a summary of the main idea/idea, providing comments /views on the main idea? Ideas developed in the essay paragraphs.				Paragraph 4 Conclusion Restate Thesis General Conclusion Final Concluding Statement What is a thesis statement? Writing a thesis statement: Connecting thesis statement to the Essay Developing a thesis statement Stages of Essay Writing Generating ideas (Brainstorming ideas)(deciding	



						topic, title, understand the question) Planning (Outlining)Essay: Introduction, Body, Conclusion (how many words each, how many paragraphs) Introductor y Paragraph:	



		2.3.6. Students are able to choose and use references correctly. 2.3.7. Students are able to docitations correctly.				General Introductory Statement Thesis Statement Order of Argument References Using a book as a reference, and how it's written (APA) style Springer, C 1999, 'Thepleasure of the interface', in <i>Cybersexualities: A Reader on Feminist Theory, Cyborgs and Cyberspace</i>, ed Jenny Wolmark, Edinburgh University Press, Edinburgh, pp. 34-55. Citation 1. The author's surname 2. The year of publicatio	



						n 3. The page numbers (only necessary if you make a direct quote or paraphrase an idea from a particular page) Example: Smith (1999) indicates that there are significant pockets of diseases in country towns.	



10 - 12	CPMK 3: Students are able to make academic presentations. Sub CPMK 3.1: Students are able to apply the structure of academic presentations properly and correctly. Sub CPMK 3.2: Students are able to use presentation media effectively.	3.1.1. Students are able to make academic presentations by applying academic presentation techniques and strategies according to the structure of academic presentations. 3.2.1. Students are able to make presentations by using presentation media effectively.	Non tes/nontest: - Performance /oral test - Exercise - Assignment	- Lecture - Tutorial (3 x 100 minute)	MyITS Classroom	Academic Presentation (3 meetings) Planning: Establishing the context What is the purpose of your presentation? Who is your audience? Where are you going to talk? How long are you going to talk? Are you going to talk as a part of group or not? Structuring Your Presentation Introduction Reveal the topic of your speech Establish credibility and goodwill Relate everything to	20%



						the audience The Main Body Build your main body around 3 main ideas Link your main points together through what are known as 'connective' The Conclusion Using Visual Aids Ppt handouts Delivering your speech Practice not reading your speech Reshape your written information for the public presentation Dos and Don'ts Presentation Assessment	



14 - 15	CPMK 4: M Students are able to integrate language skills for the needs of preparing for the world of work.		- Exercise: role	- Lecture - Tutorial (4 x 100 minute)	MyITS Classroom	English for Workplace Addressing Selection Criteria Near the end of your degree: Top Tips YourCareer Success What are selectioncriteria? Examples of selection	20%



	Sub CPMK 4.1: Students are able to write a Curriculum vitae / personal profile correctly and interestingly. Sub CPMK 4.2: Students are able to write a job application letter correctly. Sub CPMK 4.3: Students are able to deal with job interviews.	4.1.1. Students are able to write a curriculum vitae / personal profile correctly and interestingly. 4.2.1. Students are able to carry out job interviews correctly. 4.3.1. Students are able to carry out job interviews correctly.	play interview - Assignment: Create a cv Project: Group video interview assignment			criteria instruction Examples of criteria and how to address responses to the criteria Writing Your CV/Resume Step 1: Define who you are through self-assessment Step 2: Research the employer and what they are looking for Step 3: Match yourself to the Employer's requirement Step 4: Plan the resume structure and what information to include Step 5: Present your resume	



						professionally Step 6: Create the content of your resume Writing Your Application What is a letter of application? Points to rememberSome DON'T'S A sample letter of application formatWriting your	



						application At The Interview Types of interview Presenting a professional image What happens at the interview Your body language and the job interview The STAR method After the interview The telephone/video interview The Panel interview How would you answer More practice	
16	UAS / Evaluasi Akhir Semester – <i>Final Exam</i>						15%

**UG234915 TECHNOLOGY BASED ENTREPRENEURSHIP**

		INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					
COURSE (MK)		CODE	MK CLUSTER		CREDIT (sks)	SEMESTER	Date of Compilation
TECHNOLOGY BASED ENTREPRENEURSHIP		UG23495	SKMB		2 (Two)	Semester 6 - 7	27 Oktober 2022
AUTHORIZATION		RPS Developer		RMK Coordinator		Head of Study Program	
		MUCHAMMAD NURIF, SE.MT					
Learning Outcomes (CP)	CPL-PRODI						
	S4 - Acting as a citizen that is proud and loves the country, has nationalism and a sense of responsibility to the state and nation S10 - Spirit of independence, struggle and entrepreneurship S11 – Aim the best to achieve perfect results S12 – Collaborate to make the most of potential KU2 - Able to demonstrate independent, quality and measurable performance KU7 - Able to be responsible for the achievement of group work results and supervise and evaluate the completion of work assigned to workers under their responsibility. KU13 - Able to apply entrepreneurship and understand technology-based entrepreneurship						

**CP MK**

CPMK1/ SubCPMK1, Able to adapt to the situations faced and survive in uncertain conditions

CPMK2/ SubCPMK2, Able to innovate and be creative to produce designs or prototypes of technology-based products/services by utilizing market-oriented science and technology (e-commerce/marketplace)

CPMK3/ SubCPMK3, Able to prepare a business plan proposal that is suitable for submission to investors/funders.

CPMK4/ SubCPMK4, Responsible for one's own work and can be given responsibility for achieving team work results by prioritizing business ethics.



	CPMK5/ SubCPMK5, Able and brave to take business risks with the right calculations.
Course description	This course provides students with the understanding and skills to be able to identify and evaluate technology-based business opportunities according to the student's field of expertise, as well as develop these business opportunities. This course combines an integrated introduction to theory and direct practice (hands-on experience) in developing business ideas and opportunities. In the end, students are expected to be able to translate business opportunities into effective and effective business plans has added value.
Study Materials: Learning Materials	1. Introduction to Technology and Business Based Entrepreneurship 2. Recognizing Opportunities and Creating Business Ideas 3. Business Feasibility 4. Develop an effective Business Model 5. Systematics of Writing a Business Plan 6. Marketing Management 7. Operational and HR Management 8. Financial Management
References	Primary: 1. Kewirausahaan Berbasis Teknologiship. Tim Pengembangan Kewirausahaan Berbasis Teknologiship ITS (2015). Surabaya: ITS Press. Secondary : 0. Barringer, B. R., & Ireland, R. D. (2010). Entrepreneurship: Successfully launching new ventures. Upper Saddle River, N.J: Prentice Hall. 1. Osterwalder, A., Pigneur, Y., & Clark, T. (2010). Business model generation: A handbook for visionaries, game changers, and challengers. Hoboken, NJ: Wiley. 2. William, B. K., Sawyer, S. C., Berston, S., (2013). Business: A Practical Introduction. Upper Saddle River, N.J: Prentice Hall 3. International Labor Organization., (2014) Start and Improve Your Business: Implemetation Guide. ISBN: 9789221288060; 9789221288077 (web pdf) 4. International Labor Organization., (2015). Generate Your Business Idea. ISBN: 9789221287575; 9789221287582 (web pdf)



	5. Kotler, Philip. 2010. Manajemen Pemasaran. Edisi tiga belas Bahasa Indonesia. Jilid 1 dan 2. Jakarta : Erlangga.	
Learning Media	Software :	Hardware :
	- MyITSClassroom - Jamboard - Miro - Kahoot - Click up	- Computer - Projector
Assigned Lecturer	Yuni Setyaningsih, S.K.Pm., M.Sc.	



		Muhammad Ubaidillah Al Mustofa, M.SEI ITS Technology Based Entrepreneurship Lecturer Team					
Required Courses		-					
Week of-	The final abilities of each learning stage (Sub-CP-MK)	Evaluation		Learning Method, Teaching Method, and Student Assignments [Time Estimation]		Learning Materials [References]	Weight (%)
		Evaluation Indicators	Criteria and Form Evaluation	Online	Offline		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	CPMK1/ SubCPMK1, Able to adapt to the situations faced and survive in uncertain conditions	Pengantar Kewirausahaan Berbasis Teknologidan Bisnis a. Able to explain Technopreneur principles and their role. b. Able to identify and explain the characteristics of successful Technology-Based Entrepreneurship c. Able to explain the process of becoming a Technology-Based Entrepreneur d. Able to explain the role of Technology-Based Entrepreneurship in society	Criteria: Mastery and Accuracy of answers Form of assessment: Interview report	Learning Form: Lecture TM = 2 SKS x 50" PT = 2 SKS x 50" BM = 2 SKS x 50" Learning Method: Small group discussion, collaborative learning, group presentation Assignments & Exercises: Environmental and Stakeholder Analysis of the business (strengths/potential	√	Technopreneur ITS Interview and analysis	5%



				development of examples of successful entrepreneurs).			
2	CPMK2/ SubCPMK2, Able to innovate and be creative to produce designs or prototypes of technology-based products/services	Recognizing Opportunities and Creating Business Ideas. a. Able to explain the importance of starting a new business b. Able to identify the personal characteristics needed to	Criteria: Mastery and Accuracy of answers Form of assessment: Group Presentation		√	1. ITS Technology Based Entrepreneurship book 2. Barringer 3. Task: develop business ideas – Problems and Solutions	5%
				Learning Method: Lecture TM = 2 SKS x 50” PT = 2 SKS x 50” BM = 2 SKS x 50”			



	utilizing market-oriented science and technology (e-commerce / marketplace)	Identify business opportunities c. Understand creative steps in identifying business opportunities		Learning Method: Small group discussion, collaborative learning, group presentation Assignments & Exercises: 1. Develop a business idea (group presentation) 2. Students are asked to present Pre-Assignment 1 (Problem and Solution) to be discussed together at the third meeting			
3	CPMK2/ SubCPMK2	Business Feasibility a. Able to explain the importance of business idea feasibility analysis b. Able to explain and apply concept statements and market feasibility c. Able to evaluate the feasibility of a business idea	Criteria: Mastery and Accuracy of answers Form of Assessment: Group Presentation		√	1. Buku Kewirausahaan Berbasis TeknologiITS 2. Barringer 3. Tugas : menyusun feasibility study	5%
4-5	CPMK2/	PRESENTATION AND	Criteria: Mastery		√	1. Entrepreneur	10%



	SubCPMK2	COLLECTION OF ASSIGNMENT 1: Creating Business Ideas	and Accuracy of answers Assessment Form: Group Presentation A business idea must answer three basic questions: 1. Problems	Learning Form: Lecture TM = 2 mg x 2 SKS x 50" PT = 2 mg x 2 SKS x 50" BM = 2 mg x 2 SKS x 50" Learning Method: Smallgroup discussion,	ship Book Based on ITS 2. Barringer 3. Presentation Task 1: Creating a Business Idea	



			2. Solutions 3. Benefits	collaborative learning, group presentation		
				Assignments & Exercises: Assignment 1		
6 - 7	CPMK2/ SubCPMK2	Develop an effective Business Model a. Able to explain business model innovation b. Able to arrange and designing a Business Model Canvas (BMC) based business ideas that have proposed. c. Able to evaluate	Criteria: Mastery and Accuracy of answers Assessment Form: Group Presentation	Learning Form: Lecture TM = 2 mg x 2 SKS x 50" PT = 2 mg x 2 SKS x 50" BM = 2 mg x 2 SKS x 50" Metode Pembelajaran: Small group discussion, collaborative learning, group presentation Assignments & Exercises: Compile BMC	1. Osterwalder 2. ITS Technology Based Entrepreneurship Team PPT	10%
8	CPMK2/ SubCPMK2	Marketing Management: a. Able to understand overall market aspects b. Understand marketing aspects and marketing strategies c. Understand the concept of 4P Place, Product,	Criteria: Mastery and Accuracy of answers Assessment Form: Group Presentation	√ Learning Form: Studying TM = 2 SKS x 50" PT = 2 SKS x 50" BM = 2 SKS x 50"	1. Marketing management Philip Kotler 2. Team PPT ITS Technopren	5%



		d. Price Promotion Able to apply marketing plans to business ideas		Learning Method: Small group discussion, collaborative learning, group presentation Assignments & Exercises: Market analysis and 4P exercises		eur	
9-10	CPMK2/ SubCPMK2	ASSIGNMENT PRESENTATION 2: Business Model, Marketing Plan, and Prototyping	Criteria: Mastery and Accuracy of answers		√	1. Osterwalder 2. Kotler	10%
				Learning Form: Lecture			



			Assessment Form: Group Presentation Task 2: 1. Business Model Canvas 2. Analysis of marketing strategies and market plans 3. Show the design or prototype of the product/service created	TM = 2 mg x 2 SKS x 50" PT = 2 mg x 2 SKS x 50" BM = 2 mg x 2 SKS x 50" Learning Method: Small group discussion, collaborative learning, group presentation Assignments & Exercises: Assignment 2	3. ITS Technology Based Entrepreneurship Team PPT	
11	CPMK3/ SubCPMK3, Able to prepare a business plan proposal that is suitable to be submitted to investors/funders.	Systematics of Writing a Business Plan a. Able to explain the purpose of the business plan b. Able to write a business plan systematically and effectively	Criteria: Mastery and Accuracy of answers Form of Assessment: Analysis and Draft Business Plan	√ Learning Form: Lecture TM = 2 SKS x 50" PT = 2 SKS x 50" BM = 2 SKS x 50" Learning Method: Smallgroup discussion, collaborative learning, group presentation Assignments & Exercises: Practice preparing a Business Plan	1. Example of PKM(K) and business proposal from the competition 2. ITS Technology Based Entrepreneurship Book 3. ITS Technology Based Entrepreneurs hip Team PPT	5%



12	CPMK3/ SubCPMK3,	Operational and HR Management a. Able to explain the process business from a designed business idea. b. Able to understand how to create an organizational structure and	Criteria: Mastery and Accuracy of answers Assessment Form: Group Presentation	Learning Form: Lecture TM = 2 SKS x 50" PT = 2 SKS x 50" BM = 2 SKS x 50" Learning Method: Smallgroup discussion,	a. ITS Technology Based Entrepreneurs hip Book b. ITS Technology Based Entrepreneurs hip Team PPT c. Independent learning tasks: HR management aspects	5%



		develop good organizational management.		collaborative learning, group presentation Assignments & Exercises: Practice creating a flow of business operational activities and developing an organizational structure		
13	CPMK5/ SubCPMK5: Able and brave to take business risks with the right calculations.	Financial Management a. Able to understand the function of the financial aspects of making a business plan b. Able to calculate break even point c. Able to calculate working capital requirements	Criteria: Mastery and Accuracy of answers Assessment Form: Group Presentation	Learning Method: Lecture TM = 2 SKS x 50" PT = 2 SKS x 50" BM = 2 SKS x 50" Learning methods: Small group discussion, collaborative learning, group presentation Assignments & Exercises: Practice making financial reporting simple	ITS Technology Based Entrepreneurship Book Team PPT ITS Technology Based Entrepreneurship Independent learning assignments: HR management aspects	5%



14	CPMK4/ SubCPMK4 : Responsible for own work and can be given responsibility for achievements the result of team work with	EXHIBITION OF TECHNOLOGY BASED ENTREPRENEURIAL PRODUCTS	Virtual /Hoppin	Learning Form: Exhibition TM = 2 SKS x 50" PT = 2 SKS x 50" BM = 2 SKS x 50" Learning Method: Exhibition	Pameran Produk	5%



	Prioritize business ethics					
15-16	CPMK3/ SubCPMK3, CPMK4/ SubCPMK4, CPMK5/ SubCPMK5	PRESENTATION ASSIGNMENT 3: Preparation of Business Plan	Criteria: Mastery and Accuracy of answers Assessment Form: Group Presentation Task 3 - Preparation of Business Plan: 1. Conception and background of the business idea along with justification (developed from	Bentuk Pembelajaran: Kuliah TM = 2 mg x 2 SKS x 50" PT = 2 mg x 2 SKS x 50" BM = 2 mg x 2 SKS x 50" Learning Method: Small group discussion, collaborative learning, group presentation	ITS Technology Based Entrepreneurship Book ITS Technology Based Entrepreneurship Team PPT	30%



			task 1) 2. Business Model and Marketing Plan (developed from assignment 2) 3. Operational analysis and HR needs 4. Analysis of start-up funding needs, and 5. Collect prototypes of products/services that have been made to class lecturers.	Assignments & Exercises: Assignment 3		
Total						100%

**DP234739 DESIGN MANAGEMENT**

		SEPULUH NOPEMBER INSTITUTE OF TECHNOLOGY SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code	
SEMESTER LEARNING PLAN								
COURSE (MK)		CODE	MK CLUSTER		CREDIT (credit)		SEMESTER	Date of Compilation
DESIGN MANAGEMENT		DP234739	Product Design and Business Management		Theory= 1	Practice= 2	7	December 30, 2022
AUTHORIZATION 		RPS Developer		RMK Coordinator		Head of Study Program		
		Bambang Tristiyono, ST., M.Si		Arie Kurniawan, S.T, M.Ds		Bambang Tristiyono, ST., M.Si		
Learning Outcomes (CP)	Study Program CPL charged to MK							
	CPL-1		Able to show attitudes and characters that reflect: piety to God Almighty, ethics and integrity, noble ethics, sensitivity and care for social and environmental problems, respect cultural differences and pluralism, uphold law enforcement prioritizing the interests of the nation and the wider community, through creativity and innovation, excellence, strong leadership, synergy, and other potentials possessed to achieve maximum results.					
	CPL-2		Able to study and utilize science and technology in order to apply it to the field of Product Design, and able to make appropriate decisions from the results of their own work or group work in the form of final project reports or other forms of learning activities whose output is equivalent to the final project through logical, critical, systematic and innovative thinking.					
	CPL-3	V	Able to manage self-learning, and develop themselves as lifelong learners to compete at national, and international levels, in order to make a real contribution to solving problems by implementing information and communication technology and paying attention to sustainability principles and understanding technology-based entrepreneurship.					
	CPL-4		Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.					



	CPL-5	V	Able to understand and apply knowledge, insight and science related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural, economic and business, entrepreneurship, code of ethics and IPR.												
	CPL-6		Able to design products and systems with consideration of all aspects that influence them, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.												
	CPL-7		Able to research problems, formulate and publish design needs and solutions for the present or future using relevant design and research methodologies.												
	CPL-8		Able and skilled in using design process aids that include: manual or digital equipment according to technology and the times.												
	CPL-9	V	Able to present ideation design concepts through verbal communication, visual media, and prototypes (Models / mock-ups / prototypes) using various relevant technologies.												
	Course Learning Outcomes (CPMK)														
	CPMK-1	Able to understand important aspects of product and management.													
	CPMK-2	Able to understand and analyze the product life cycle.													
	CPMK-3	Able to understand and analyze product strategy and brand strategy.													
	CPMK-4	Able to understand, apply and analyze consumer research.													
	CPMK-5	Able to understand, apply and create a business model canvas.													
	CPMK-6	Able to understand, apply and create documents about IPR; industrial design and patents.													
		CPL matrix – CPMK <table border="1"> <tr> <td>CPMK</td><td>CPL-3</td><td>CPL-5</td><td>CPL-9</td></tr> <tr> <td>CPMK-1</td><td></td><td>V</td><td>V</td></tr> <tr> <td>CPMK-2</td><td></td><td>V</td><td>V</td></tr> </table>		CPMK	CPL-3	CPL-5	CPL-9	CPMK-1		V	V	CPMK-2		V	V
CPMK	CPL-3	CPL-5	CPL-9												
CPMK-1		V	V												
CPMK-2		V	V												



		CPMK-3		V	V	
		CPMK-4	V	V		
		CPMK-5	V	V		
		CPMK-6	V	V		
Brief Description MK	Design management is a course that studies how to manage the product design process to suit company goals and strategies. The scope of the material studied includes; product meaning &; Product Management, Product Strategy, Product Life Cycle, Pricing, Brand &; Brand Strategy, Product Launching, Consumer Research, Questionnaire Method and Processing, Canvas Model, compiling IPR documents; Patents, Industrial Design, Copyright.					
Study Material: Learning Material	Study Material : 1. Product Meaning &; Product Management 2. Product Strategy, Product Life Cycle 3. Pricing, Brand & Brand Strategy 4. Product Launching 5. Consumer Research 6. Questionnaire and Management Method 7. Canvas Model 8. IPR; Patent 9. IPR; Industrial Design 10. IPR; Copyright					
Book	Main:					
		16. Debbie Millman (2011), Brand Thinking and Other Noble Pursuits, Allworth Press, New York, 2011 • 17. Grieves, Michael (2005). Product Lifecycle Management: Driving the Next Generation of Lean Thinking. McGraw-Hill. ISBN 978-0-07-145230-4. 18. Haris Munandar (2009), Knowing IPR (Intellectual Property Rights), Airlangga, ISBN; 9789790331952. 19. Karnie, Arie; Reich, Jehoram (2011). Managing the Dynamic of New Product Development Processes. A new Product Lifecycle Management Paradigm. Springer. p. 13. ISBN 978-0-85729-569-9. 20. Kathryn Best (2006), Design Management-Managing Design Strategy, Process and Implementation, AVA Publishing SA, Lausanne				
	Supporter:					



		5. Leon G. Schiffman, Leslie Lazar Kanuk (2007), "Consumer Behavior", Ninth Edition, Prentice Hall, Pearson Education, Inc., New Jersey.					
Lecturer		Bambang Tristiyono, ST., M.Si					
Subject requirements		-					
Mg To-	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assessment Weight (%)
		Indicators	Criteria & Forms	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students are able to understand the introduction, syllabus, tuition contract.	-	Criterion: Shape:	Learning Forms: Lecture [1x3x50 = 150 minutes] Learning Methods: Student Assignments:	-	Material: Introduction, syllabus, tuition contract. Book:	
2	Students are able to understand and express the meaning of products & product management.	Accuracy and completeness in understanding and expressing the meaning of product & product management	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape:	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Discovery Learning [1x3x50 = 150 minutes] Student Assignments:	-	Material: Product meaning & product management Library : Grieves, Michael (2005). Karnie, Arie; Reich, Jehoram (2011). Kathryn Best (2006).	25%



			Non Test [Presentation & Q&A]	Power point Presentation [1x3x50 = 150 minutes]		Debbie Millman (2011). Leon G. Schiffman, Leslie Lazar Kanuk (2007).	
3	Students are able to understand and express product strategies, product life cycles.	Accuracy and completeness in understanding and expressing product strategy, product life cycle	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Discovery Learning [1x3x50 = 150 minutes] Student Assignments: Power point Presentation [1x3x50 = 150 minutes]	-	Material: Product strategy, product life cycle Book: Grieves, Michael (2005). Karnie, Arie; Reich, Jehoram (2011). Kathryn Best (2006). Debbie Millman (2011). Leon G. Schiffman, Leslie Lazar Kanuk (2007).	
4	Students are able to understand and express pricing, brand & brand strategy.	Accuracy and completeness in understanding and expressing pricing, brand & brand strategy	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape:	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Discovery Learning [1x3x50 = 150 minutes] Student Assignments:	-	Material: Pricing, Brand & Brand Strategy Book: Grieves, Michael (2005). Karnie, Arie; Reich, Jehoram (2011). Kathryn Best (2006).	



			Non Test [Presentation & Q&A]	Power point Presentation [1x3x50 = 150 minutes]		Debbie Millman (2011). Leon G. Schiffman, Leslie Lazar Kanuk (2007).	
5	Students are able to understand and express product launching.	Accuracy and completeness in understanding and presenting product launching	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Discovery Learning [1x3x50 = 150 minutes] Student Assignments: Power point Presentation [1x3x50 = 150 minutes]	-	Material: Product launching Library : Grieves, Michael (2005). Karnie, Arie; Reich, Jehoram (2011). Kathryn Best (2006). Debbie Millman (2011). Leon G. Schiffman, Leslie Lazar Kanuk (2007).	
6	Able to understand, apply and analyze consumer research.	Accuracy and completeness in understanding, applying and analyzing consumer research.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape:	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Contextual Learning [1x3x50 = 150 minutes] Student Assignments:	-	Material: Consumer Research Library: Grieves, Michael (2005). Karnie, Arie; Reich, Jehoram (2011). Kathryn Best (2006). Debbie Millman (2011).	



			Non Test [Presentation & Q&A]	Power point Presentation [1x3x50 = 150 minutes]		Leon G. Schiffman, Leslie Lazar Kanuk (2007).	
7	Able to understand, apply and analyze questionnaire methods	Accuracy and completeness in understanding, applying and analyzing questionnaire methods	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Contextual Learning [1x3x50 = 150 minutes] Student Assignments: Power point Presentation [1x3x50 = 150 minutes]	-	Material: Library Questionnaire Method : Grieves, Michael (2005). Karnie, Arie; Reich, Jehoram (2011). Kathryn Best (2006). Debbie Millman (2011). Leon G. Schiffman, Leslie Lazar Kanuk (2007).	
8	Midterm Written Exam-Evaluation						15%
9	Able to understand, apply and analyze the making of questionnaires.	Accuracy and completeness in understanding, applying and analyzing the making of questionnaires.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape:	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Contextual Learning [1x3x50 = 150 minutes] Student Assignments:	-	Material: Making Library Questionnaires: Grieves, Michael (2005). Karnie, Arie; Reich, Jehoram (2011). Kathryn Best (2006). Debbie Millman (2011).	



			Non Test [Presentation & Q&A]	Power point Presentations Draft Questionnaire questions [1x3x50 = 150 minutes]		Leon G. Schiffman, Leslie Lazar Kanuk (2007).	
10	Able to understand, apply and analyze the distribution of questionnaires.	Accuracy and completeness in understanding, applying and analyzing the distribution of questionnaires.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Contextual Learning [1x3x50 = 150 minutes] Student Assignments: Power point Presentations [1x3x50 = 150 minutes]	-	Material: Analysis of the distribution of the Questionnaire Book: Grieves, Michael (2005). Karnie, Arie; Reich, Jehoram (2011). Kathryn Best (2006). Debbie Millman (2011). Leon G. Schiffman, Leslie Lazar Kanuk (2007).	30%
11	Able to understand, apply and analyze the processing and recapitulation of questionnaires	Accuracy and completeness in understanding, applying and analyzing the processing and recapitulation	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills.	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Contextual Learning [1x3x50 = 150 minutes]	-	Material: Processing Analysis and recapitulation of questionnaires Book: Grieves, Michael (2005). Karnie, Arie; Reich, Jehoram (2011).	



		of questionnaires	Shape: Non Test [Presentation & Q&A]	Student Assignments: Power point Presentations [1x3x50 = 150 minutes]		Kathryn Best (2006). Debbie Millman (2011). Leon G. Schiffman, Leslie Lazar Kanuk (2007).	
12	Able to understand, apply and compile Consumer Research Articles and Canvas Models.	Accuracy and completeness in understanding, applying and compiling Consumer Research Articles and Canvas Models.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Contextual Learning [1x3x50 = 150 minutes] Student Assignments: Power point Presentations Consumer Research articles and model canvas [1x3x50 = 150 minutes]	-	Material: Consumer Research Articles and Model Canvas. Book: Grieves, Michael (2005). Karnie, Arie; Reich, Jehoram (2011). Kathryn Best (2006). Debbie Millman (2011). Leon G. Schiffman, Leslie Lazar Kanuk (2007).	
13	Able to understand, apply and analyze IPR.	Accuracy and completeness in understanding, applying and analyzing IPR.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material.	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods:	-	Material: IPR Book: Grieves, Michael (2005).	



			The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Contextual Learning [1x3x50 = 150 minutes] Student Assignments: Power point Presentations [1x3x50 = 150 minutes]		Karnie, Arie; Reich, Jehoram (2011). Kathryn Best (2006). Debbie Millman (2011). Leon G. Schiffman, Leslie Lazar Kanuk (2007).	
14	Able to understand, apply and create Industrial Design documents	Accuracy and completeness in understanding, applying and making Industrial Design documents	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Contextual Learning [1x3x50 = 150 minutes] Student Assignments: Power point Presentations Industrial Design Documents [1x3x50 = 150 minutes]	-	Material: Industrial Design Documents Book: Grieves, Michael (2005). Karnie, Arie; Reich, Jehoram (2011). Kathryn Best (2006). Debbie Millman (2011). Leon G. Schiffman, Leslie Lazar Kanuk (2007).	
15	Able to understand, apply and create Patent documents	Accuracy and completeness in applying and making Patent documents	Criterion: The accuracy of the material discussion.	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods:	-	Material: Patent Documents Book: Grieves, Michael (2005).	



			Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Contextual Learning [1x3x50 = 150 minutes] Student Assignments: Power point Presentations Patent Documents [1x3x50 = 150 minutes]		Karnie, Arie; Reich, Jehoram (2011). Kathryn Best (2006). Debbie Millman (2011). Leon G. Schiffman, Leslie Lazar Kanuk (2007).	
16	Final Evaluation of IPR Documents						30%

**DP234740 PROFESSIONAL ETHICS**

		SEPULUH NOPEMBER INSTITUTE OF TECHNOLOGY SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code
SEMESTER LEARNING PLAN							
COURSE (MK)		CODE	MK CLUSTER	CREDIT (credit)		SEMESTER	Date of Compilation
PROFESSIONAL ETHICS		DP234740	Product Management and Development	Theory= 1	Practice = 1	7	December 30, 2022
AUTHORIZATION 		RPS Developer		RMK Coordinator		Head of Study Program	
		Bambang Tristiyono, ST., M.Si		Arie Kurniawan, S.T, M.Ds		Bambang Tristiyono, ST., M.Si	
Learning Outcomes (CP)	Study Program CPL charged to MK						
	CPL-1	V	Able to show attitudes and characters that reflect: piety to God Almighty, ethics and integrity, noble ethics, sensitivity and care for social and environmental problems, respect cultural differences and pluralism, uphold law enforcement prioritizing the interests of the nation and the wider community, through creativity and innovation, excellence, strong leadership, synergy, and other potentials possessed to achieve maximum results.				
	CPL-2		Able to study and utilize science and technology in order to apply it to the field of Product Design, and able to make appropriate decisions from the results of their own work or group work in the form of final project reports or other forms of learning activities whose output is equivalent to the final project through logical, critical, systematic and innovative thinking.				
	CPL-3	V	Able to manage self-learning, and develop themselves as lifelong learners to compete at national, and international levels, in order to make a real contribution to solving problems by implementing information and communication technology and paying attention to sustainability principles and understanding technology-based entrepreneurship.				
	CPL-4		Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.				



	CPL-5	V	Able to understand and apply knowledge, insight and science related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural, economic and business, entrepreneurship, code of ethics and IPR.			
	CPL-6	V	Able to design products and systems with consideration of all aspects that influence them, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.			
	CPL-7		Able to research problems, formulate and publish design needs and solutions for the present or future using relevant design and research methodologies.			
	CPL-8		Able and skilled in using design process aids that include: manual or digital equipment according to technology and the times.			
	CPL-9		Able to present ideation design concepts through verbal communication, visual media, and prototypes (Models / mock-ups / prototypes) using various relevant technologies.			
	Course Learning Outcomes (CPMK)					
	CPMK-1	Able to understand, apply and explain the understanding of professional ethics and the importance of understanding ethics in the product design profession.				
	CPMK-2	Able to understand, apply and explain the basic principles of professional ethics applicable in the field of product design.				
	CPMK-3	Able to understand, apply and explain ethical norms that apply in the product design industry.				
	CPMK-4	Able to understand, apply and analyze ethical problems faced in the field of product design using predetermined principles and norms.				
	CPMK-5	Able to understand, apply and explain being an ethical product designer in carrying out work, including paying attention to the rights of others, maintaining confidentiality, and always maintaining the trust given to someone.				
	CPMK-6	Able to understand, apply and explain the social and environmental responsibilities of a product designer, including how to produce products that are environmentally friendly and do not harm the community.				
		CPL matrix – CPMK				



		CPMK-3	V		V	
		CPMK-4			V	V
		CPMK-5			V	V
		CPMK-6			V	V
Brief Description MK	Professional ethics is a course that studies the principles and norms that must be followed by a professional in carrying out his work. This course aims to develop awareness and moral and ethical responsibility of a professional towards his work, society, and profession. Topics that may be covered in this course include: Basic principles of professional ethics, such as integrity, professionalism, and social responsibility. Ethical norms that apply in the world of product design, such as product design codes of ethics issued by professional associations or organizations related to product design. Ethical issues often faced by product designers, such as plagiarism, abuse of power, and conflicts of interest. How to solve the ethical problems at hand, using predetermined principles and norms. Being an ethical product designer in carrying out work, including paying attention to the rights of others, maintaining confidentiality, and always maintaining the trust given to someone.					
Study Material: Learning Material	Study Material : 1. Understanding professional ethics and the importance of understanding ethics in the product design profession. 2. Basic principles of professional ethics, such as integrity, professionalism, and social responsibility. 3. A code of product design ethics that applies in the product design industry. 4. Ethical issues often faced by product designers, such as plagiarism, abuse of power, and conflicts of interest. 5. The social and environmental responsibilities of a product designer, including how to pay attention to the rights of others and maintain confidentiality. 6. Know and understand the rights and responsibilities of a product designer to society. 7. Know and understand the rights and responsibilities of a product designer towards the profession carried. 8. Understand ethics in carrying out product design work and respect the rights of others. 9. How to become an ethical product designer in carrying out work. 10. Produce products that are environmentally friendly and do not harm the community. 11. Understand the rights of copyright holders and respect these rights in using the work of others and the rights of people involved in the product production process, such as workers' rights and suppliers' rights. 12. Understand and consider social and cultural factors in the product design process.					



		13. Develop the ability to work ethically in teams and in cooperation with other colleagues.					
Book		Main:					
		1. Teasley, M., & Teasley, S. (2006). Ethical considerations in product design. In G. T. Ford (Ed.), Product design: Techniques in reverse engineering and new product development (2nd ed., pp. 319-338). Upper Saddle River, NJ: Pearson Prentice Hall. 2. Aspinwall, E. (2005). Ethical issues in product design. In M. Fisher (Ed.), The Blackwell handbook of principles of organizational behavior (pp. 441-456). Oxford, England: Blackwell Publishing. 3. Rest, J. R. (1986). The foundations of moral development. Cambridge, MA: Harvard University Press. 4. Shaw, W. H. (2007). Business ethics: A textbook with cases (8th ed.). Boston, MA: Wadsworth.					
		Supporter:					
		Beauchamp, T. L., & Childress, J. F. (2001). Principles of biomedical ethics (5th ed.). New York: Oxford University Press.					
Lecturer		Bambang Tristiyono, ST., M.Si					
Subject requirements		-					
Mg To-	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assessment Weight (%)
		Indicators	Criteria & Forms	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students are able to understand the introduction, syllabus, tuition contract.	-	Criterion: Shape:	Learning Forms: Lecture [1x2x50 = 100 minutes] Learning Methods:	-	Material: Introduction, syllabus, tuition contract.	



				Student Assignments:		Book:	
2	Students are able to understand, apply and explain the understanding of professional ethics and the importance of understanding ethics in the product design profession.	Accuracy and completeness in understanding, applying and explaining the understanding of professional ethics and the importance of understanding ethics in the product design profession.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 minutes] Student Assignments: Power point Presentations Word Document [1x2x50 = 100 minutes]	-	Material: Understanding professional ethics and the importance of understanding ethics in the product design profession. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	
3	Students are able to understand, apply and explain the basic principles of professional ethics, such as integrity, professionalism, and social responsibility.	Accuracy and completeness in understanding, applying and explaining the basic principles of professional ethics.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape:	Learning Forms: Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 minutes] Student Assignments:	-	Material: Basic principles of professional ethics. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	



			Non Test [Presentation & Q&A]	Power point Presentations Word Document [1x2x50 = 100 minutes]			
4	Students are able to understand, apply and explain the Code of Product Design Ethics that applies in the product design industry.	Accuracy and completeness in understanding, applying and explaining the Code of product design ethics applicable in the product design industry.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 minutes] Student Assignments: Power point Presentations Word Document [1x2x50 = 100 minutes]	-	Material: A code of product design ethics that applies in the product design industry. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	
5	Students are able to understand, apply and analyze ethical issues that are often faced by product designers, such as plagiarism, abuse of power, and conflicts of interest.	Accuracy and completeness in understanding, applying and analyzing ethical issues that are often faced by	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills.	Learning Forms: Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 minutes]	-	Material: Ethical issues are often faced by product designers. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986)	



		product designers.	Shape: Non Test [Presentation & Q&A]	Student Assignments: Power point Presentations Word Document [1x2x50 = 100 minutes]		Shaw, W. H. (2007)	
6	Students are able to understand, apply and analyze the social and environmental responsibilities of a product designer, including how to pay attention to the rights of others and maintain confidentiality.	Accuracy and completeness in understanding, applying and analyzing the social and environmental responsibility of a product designer.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 minutes] Student Assignments: Power point Presentations Word Document [1x2x50 = 100 minutes]	-	Material: Social and environmental responsibility of a product designer. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	
7	Students are able to understand, apply and explain the rights and responsibilities of a product designer to society.	Accuracy and completeness in understanding, applying and explaining the rights and	Criterion: The accuracy of the material discussion. Completeness of the scope of the material.	Learning Forms: Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning	-	Material: The rights and responsibilities of a product designer towards society. Book:	20%



		responsibilities of a product designer to society.	The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Contextual Learning [1x2x50 = 100 minutes] Student Assignments: Power point Presentations Word Document [1x2x50 = 100 minutes]		Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	
8	Midterm Evaluation						30%
9	Students are able to understand, apply and explain the rights and responsibilities of a product designer to the profession carried.	Accuracy and completeness in understanding, applying and explaining the rights and responsibilities of a product designer to the profession carried.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 minutes] Student Assignments: Power point Presentations Word Document [1x2x50 = 100 minutes]	-	Material: The rights and responsibilities of a product designer to the profession carried. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	
10	Students are able to understand, apply and explain ethics in carrying	Accuracy and completeness in	Criterion: The accuracy of the material discussion.	Learning Forms:	-	Material: Ethics in carrying out product design work	



	out product design work and respect the rights of others.	understanding, applying and explaining ethics in carrying out product design work and respecting the rights of others.	Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 minutes] Student Assignments: Power point Presentations Word Document [1x2x50 = 100 minutes]		and respecting the rights of others. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	
11	Students are able to understand, apply and explain how to become an ethical product designer in carrying out work.	Accuracy and completeness in understanding, applying and explaining How to be an ethical product designer in carrying out work.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 minutes] Student Assignments: Power point Presentations	-	Material: How to become an ethical product designer in carrying out work. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	



				Word Document [1x2x50 = 100 minutes]			
12	Students are able to understand, apply and explain products that are environmentally friendly and do not harm the community.	Accuracy and completeness in understanding, applying and explaining products that are environmentally friendly and do not harm the community.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 minutes] Student Assignments: Power point Presentations Word Document [1x2x50 = 100 minutes]	-	Material: Products that are environmentally friendly and do not harm the community. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	
13	Students are able to understand, apply and explain the rights of copyright holders and respect these rights in using the work of others and the rights of people involved in the product production process, such as workers' rights and suppliers' rights.	Accuracy and completeness in understanding, applying and explaining the rights of copyright holders and people involved in the	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape:	Learning Forms: Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 minutes] Student Assignments:	-	Material: Rights of copyright holders and persons involved in the product production process. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986)	



		product production process.	Non Test [Presentation & Q&A]	Power point Presentations Word Document [1x2x50 = 100 minutes]		Shaw, W. H. (2007)	
14	Students are able to understand, apply and explain social and cultural factors in the product design process.	Accuracy and completeness in understanding, applying and explaining social and cultural factors in the product design process.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills. Shape: Non Test [Presentation & Q&A]	Learning Forms: Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 minutes] Student Assignments: Power point Presentations Word Document [1x2x50 = 100 minutes]	-	Material: Social and cultural factors in the product design process. Book: Teasley, M., & Teasley, S. (2006) Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	
15	Students are able to understand, apply and explain the ability to work ethically in teams and in collaboration with other colleagues.	Accuracy and completeness in understanding, applying and explaining the ability to work ethically in teams and in	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Presentation skills.	Learning Forms: Lectures, Discussions [1x2x50 = 100 minutes] Learning Methods: Discovery Learning Contextual Learning [1x2x50 = 100 minutes]	-	Material: Ability to work ethically in a team and in cooperation with other colleagues. Book: Teasley, M., & Teasley, S. (2006)	20%



		collaboration with other colleagues.	Shape: Non Test [Presentation & Q&A]	Student Assignments: Power point Presentations Word Document [1x2x50 = 100 minutes]		Aspinwall, E. (2005) Rest, J. R. (1986) Shaw, W. H. (2007)	
16	End of Semester Evaluation						30%

**DP234741 INTERNSHIP**

	SEPULUH NOPEMBER INSTITUTE OF TECHNOLOGY SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code
SEMESTER LEARNING PLAN						
COURSE (MK)	CODE	MK CLUSTER		CREDIT (credit)		SEMESTER
INTERNSHIP	DP234741	TA KP		Theory= 0	Practice= 5	7
DATE OF COMPILATION	December 30, 2022					
AUTHORIZATION 	RPS Developer Bambang Tristiyono, ST., M.Si		RMK Coordinator Bambang Tristiyono, ST., M.Si		Head of Study Program Bambang Tristiyono, ST., M.Si	
Learning Outcomes (CP)	Study Program CPL charged to MK					
	CPL-1		Able to show attitudes and characters that reflect: piety to God Almighty, ethics and integrity, noble ethics, sensitivity and care for social and environmental problems, respect cultural differences and pluralism, uphold law enforcement prioritizing the interests of the nation and the wider community, through creativity and innovation, excellence, strong leadership, synergy, and other potentials possessed to achieve maximum results.			
	CPL-2	V	Able to study and utilize science and technology in order to apply it to the field of Product Design, and able to make appropriate decisions from the results of their own work or group work in the form of final project reports or other forms of learning activities whose output is equivalent to the final project through logical, critical, systematic and innovative thinking.			
	CPL-3	V	Able to manage self-learning, and develop themselves as lifelong learners to compete at national, and international levels, in order to make a real contribution to solving problems by implementing information and communication technology and paying attention to sustainability principles and understanding technology-based entrepreneurship.			
	CPL-4	V	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.			



	CPL-5	V	Able to understand and apply knowledge, insight and science related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-cultural, economic and business, entrepreneurship, code of ethics and IPR.				
	CPL-6		Able to design products and systems with consideration of all aspects that influence them, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.				
	CPL-7		Able to research problems, formulate and publish design needs and solutions for the present or future using relevant design and research methodologies.				
	CPL-8		Able and skilled in using design process aids that include: manual or digital equipment according to technology and the times.				
	CPL-9	V	Able to present ideation design concepts through verbal communication, visual media, and prototypes (Models / mock-ups / prototypes) using various relevant technologies.				
	Course Learning Outcomes (CPMK)						
	CPMK-1	Students are able to understand and apply work procedures, from the application process to presenting work.					
	CPMK-2	Students are able to understand and apply their knowledge in the world of work well.					
	CPMK-3	Students are able to understand and apply work professionalism ethics.					
	CPMK-4	Students are able to understand and do independent work during the internship					
CPMK-5	Students are able to make practical work reports correctly.						



		CPMK-2	V	V	V	
		CPMK-3	V	V		V
		CPMK-4		V		V
		CPMK-5		V		V
Brief Description MK	Introduction to employment and profession so that students are able to apply knowledge and its application to real conditions in the real work environment, both in the phase before, when or after the design process is carried out.					
Study Material: Learning Material	Study Material : 1. Internship procedure 2. Administration and verification 3. Terms and conditions of internship 4. Internship Ethics 5. Independent Work					
Book	Main:	1. Bambang Tristiyono (2020), Practical Work Manual for Product Design Study Program, Sepuluh Nopember Institute of Technology Surabaya, 2020. 2. Ministry of National Education. (2013). Guidelines for the implementation of professional internships for students majoring in electrical engineering. Jakarta: Ministry of National Education. 3. University of Indonesia. (2015). Professional internship guide for engineering faculty students. Depok: University of Indonesia. 4. Widodo, A. (2016). Professional internships for civil engineering students: Guidelines and examples of experience. Yogyakarta: Andi Publishers.				
	Supporter:	6. Regulation of the Minister of Education and Culture Number 44 of 2015 concerning Standards of Academic Qualifications and Competencies of Higher Education Graduates.				
Lecturer	Bambang Tristiyono, ST., M.Si					
Subject requirements	-					



Mg To-	The final ability of each learning stage (Sub-CPMK)	Valuation		Help Learning, Learning Methods, Student Assignments, [Time Estimate]		Learning Materials [Bibliography]	Assessment Weight (%)
		Indicators	Criteria & Forms	Offline	Online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Students are able to understand the introduction, syllabus, tuition contract.	-	Criterion: Shape:	Learning Forms: Lecture [1x3x50 = 150 minutes] Learning Methods: Student Assignments:	-	Material: Introduction, syllabus, tuition contract. Book:	
2	Students are able to understand and apply internship procedures, administration and verification.	Accuracy and completeness in understanding and applying internship procedures, administration and verification.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Shape: Non Test [Discussion &; Q&A]	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Contextual Learning [1x3x50 = 150 minutes] Student Assignments: Cover letter documents and proof of internship acceptance [1x9x50 = 450 minutes]	-	Material: Internship procedures, Administration and verification Book: Bambang Tristiyono (2020) Ministry of National Education. (2013) University of Indonesia. (2015) Widodo, A. (2016)	20%
3	Students are able to understand and apply the	Accuracy and completeness	Criterion:	Learning Forms:	-	Material:	



	Terms and Conditions as well as Internship Ethics	in understanding and applying the Terms and conditions as well as Internship Ethics.	The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Shape: Non Test [Discussion & Q&A]	Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Contextual Learning [1x3x50 = 150 minutes] Student Assignments: Cover letter documents and proof of internship acceptance [1x9x50 = 450 minutes]		Terms and conditions as well as Library Internship Ethics : Bambang Tristiyono (2020) Ministry of National Education. (2013) University of Indonesia. (2015) Widodo, A. (2016)	
4	Students are able to understand and do independent work during the internship	Accuracy and completeness in understanding and applying the Terms and conditions as well as Internship Ethics.	Criterion: The accuracy of the material discussion. Completeness of the scope of the material. The depth of each submatter. Shape: Non Test [Discussion & Q&A]	Learning Forms: Lecture, Discussion [1x3x50 = 150 minutes] Learning Methods: Contextual Learning [1x3x50 = 150 minutes] Student Assignments: Cover letter documents and proof of internship acceptance [1x9x50 = 450 minutes]	-	Material: Self-employment Book: Bambang Tristiyono (2020) Ministry of National Education. (2013) University of Indonesia. (2015) Widodo, A. (2016)	



5	Students are able to understand and do independent work during the internship	Accuracy and completeness in understanding and doing independent work during the internship	Criterion: Accuracy of topic discussion. Completeness of the target scope. The depth of each sub-target. Shape: Non Test [Internship progress score]	Learning Forms: Field Practice [1x5x50 = 250 minutes] Learning Methods: Independent work [1x5x50 = 250 minutes] Student Assignments: Doing internships and Making internship logbooks and reports [1x5x50 = 250 minutes]	-	Material: Self-employment Book: Bambang Tristiyono (2020) Ministry of National Education. (2013) University of Indonesia. (2015) Widodo, A. (2016)	
6	Students are able to understand and do independent work during the internship	Accuracy and completeness in understanding and doing independent work during the internship	Criterion: Accuracy of topic discussion. Completeness of the target scope. The depth of each sub-target. Shape: Non Test [Internship progress score]	Learning Forms: Field Practice [1x5x50 = 250 minutes] Learning Methods: Independent work [1x5x50 = 250 minutes] Student Assignments: Doing internships and Making internship logbooks and reports [1x5x50 = 250 minutes]	-	Material: Self-employment Book: Bambang Tristiyono (2020) Ministry of National Education. (2013) University of Indonesia. (2015) Widodo, A. (2016)	
7	Students are able to understand and do	Accuracy and completeness	Criterion:	Learning Forms:	-	Material: Self-employment	



	independent work during the internship	in understanding and doing independent work during the internship	Accuracy of topic discussion. Completeness of the target scope. The depth of each sub-target. Shape: Non Test [Internship progress score]	Field Practice [1x5x50 = 250 minutes] Learning Methods: Independent work [1x5x50 = 250 minutes] Student Assignments: Doing internships and Making internship logbooks and reports [1x5x50 = 250 minutes]		Book: Bambang Tristiyono (2020) Ministry of National Education. (2013) University of Indonesia. (2015) Widodo, A. (2016)	
8	Midterm Evaluation						30%
9	Students are able to understand and do independent work during the internship	Accuracy and completeness in understanding and doing independent work during the internship	Criterion: Accuracy of topic discussion. Completeness of the target scope. The depth of each sub-target. Shape: Non Test [Internship progress score]	Learning Forms: Field Practice [1x5x50 = 250 minutes] Learning Methods: Independent work [1x5x50 = 250 minutes] Student Assignments: Doing internships and Making internship logbooks and reports [1x5x50 = 250 minutes]	-	Material: Self-employment Book: Bambang Tristiyono (2020) Ministry of National Education. (2013) University of Indonesia. (2015) Widodo, A. (2016)	
10	Students are able to understand and do	Accuracy and completeness	Criterion:	Learning Forms:	-	Material: Self-employment	



	independent work during the internship	in understanding and doing independent work during the internship	Accuracy of topic discussion. Completeness of the target scope. The depth of each sub-target. Shape: Non Test [Internship progress score]	Field Practice [1x5x50 = 250 minutes] Learning Methods: Independent work [1x5x50 = 250 minutes] Student Assignments: Doing internships and Making internship logbooks and reports [1x5x50 = 250 minutes]		Book: Bambang Tristiyono (2020) Ministry of National Education. (2013) University of Indonesia. (2015) Widodo, A. (2016)	
11	Students are able to understand and do independent work during the internship	Accuracy and completeness in understanding and doing independent work during the internship	Criterion: Accuracy of topic discussion. Completeness of the target scope. The depth of each sub-target. Shape: Non Test [Internship progress score]	Learning Forms: Field Practice [1x5x50 = 250 minutes] Learning Methods: Independent work [1x5x50 = 250 minutes] Student Assignments: Doing internships and Making internship logbooks and reports [1x5x50 = 250 minutes]	-	Material: Self-employment Book: Bambang Tristiyono (2020) Ministry of National Education. (2013) University of Indonesia. (2015) Widodo, A. (2016)	
12	Students are able to understand and do	Accuracy and completeness in	Criterion: Accuracy of topic discussion.	Learning Forms: Field Practice [1x5x50 = 250 minutes]	-	Material: Self-employment Book:	



	independent work during the internship	understanding and doing independent work during the internship	Completeness of the target scope. The depth of each sub-target. Shape: Non Test [Internship progress score]	Learning Methods: Independent work [1x5x50 = 250 minutes] Student Assignments: Doing internships and Making internship logbooks and reports [1x5x50 = 250 minutes]		Bambang Tristiyono (2020) Ministry of National Education. (2013) University of Indonesia. (2015) Widodo, A. (2016)	
13	Students are able to understand and do independent work during the internship	Accuracy and completeness in understanding and doing independent work during the internship	Criterion: Accuracy of topic discussion. Completeness of the target scope. The depth of each sub-target. Shape: Non Test [Internship progress score]	Learning Forms: Field Practice [1x5x50 = 250 minutes] Learning Methods: Independent work [1x5x50 = 250 minutes] Student Assignments: Doing internships and Making internship logbooks and reports [1x5x50 = 250 minutes]	-	Material: Self-employment Book: Bambang Tristiyono (2020) Ministry of National Education. (2013) University of Indonesia. (2015) Widodo, A. (2016)	
14	Students are able to make practical work reports correctly.	Accuracy and completeness in making practical work	Criterion: Accuracy of topic discussion. Completeness of the target scope.	Learning Forms: Assistance [1x3x50 = 150 minutes] Learning Methods:	-	Material: Self-employment Book: Bambang Tristiyono (2020)	



		reports correctly.	The depth of each sub-target. Shape: Non Test [Assessment Report]	Independent work [1x5x50 = 250 minutes] Student Assignments: Create an internship Report [1x7x50 = 350 minutes]		Ministry of National Education. (2013) University of Indonesia. (2015) Widodo, A. (2016)	
15	Students are able to make practical work reports correctly.	Accuracy and completeness in making practical work reports correctly.	Criterion: Accuracy of topic discussion. Completeness of the target scope. The depth of each sub-target. Shape: Non Test [Assessment Report]	Learning Forms: Assistance [1x3x50 = 150 minutes] Learning Methods: Independent work [1x5x50 = 250 minutes] Student Assignments: Create an internship Report [1x7x50 = 350 minutes]	-	Material: Self-employment Book: Bambang Tristiyono (2020) Ministry of National Education. (2013) University of Indonesia. (2015) Widodo, A. (2016)	
16	End of Semester Evaluation						50%

**DP234742 PRE FINAL ASSIGNMENT**

		INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code	
SEMESTER LEARNING PLAN								
COURSE (MK)		CODE	MK CLUSTER		CREDIT (sks)		SEMESTER	Date of Compilation
PRE FINAL ASSIGNMENT		DP234742	TA KP		Theory= 1	Practice= 1	7	30 December 2022
AUTHORIZATION 		RPS Developer		RMK Coordinator		Head of study program		
		Bambang Tristiyono, ST., M.Si		Bambang Tristiyono, ST., M.Si		Bambang Tristiyono, ST., M.Si		
Learning Outcomes (LO)	LO that are imposed on MK							
	LO-1		Students are able to show attitudes and characters that reflect: devotion to God Almighty, ethics and integrity, noble character, sensitive and concerned about social and environmental problems, respect for cultural differences and diversity, uphold law enforcement prioritizing the interests of the nation and the wider community, through creativity and innovation, excellence, strong leadership, synergy, and other potentials to achieve maximum results.					
	LO-2		Students are able to study and utilize science and technology in order to apply it in the field of Product Design, and be able to make decisions appropriately from the results of one's own work and group work in the form of a final project report or other forms of learning activities whose output is equivalent to the final project. The output is equivalent to the final project through logical, critical, systematic and innovative thinking.					
	LO-3		Students are able to manage one's own learning, and develop oneself as a lifelong learner to compete at the national and international levels, in order to contribute significantly to solving problems by implementing information and communication technology and paying attention to the principles of sustainability and understanding technology-based entrepreneurship.					



	LO-4	V	Students are able to understand and apply knowledge about the theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.
	LO-5	V	Students are able to understand and apply knowledge, insights and science related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-culture, economics and business, entrepreneurship, code of ethics and IPR.
	LO-6		Students are able to design products and their systems with consideration of all aspects that influence them, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.
	LO-7	V	Students are able to research problems, formulate and publish design needs and solutions for the present or future using relevant design and research methodologies.
	LO-8		Students are able and skillful in using design process aids that include: manual or digital equipment according to technology and the times.
	LO-9	V	Students are able to present design concept ideation through verbal communication, visual media, and prototypes (Models/mock-ups/prototypes) using various relevant technologies.
	Course Learning Outcomes (CLO)		
	CLO-1	Students are able to understand, find and make proposals for Final Project themes and titles in collaboration with business partners.	
	CLO -2	Students are able to understand, find, conclude and make background, problems, objectives, benefits, limitations and scope of the proposed theme of the final project based on primary and secondary data.	
	CLO -3	Students are able to understand, find, conclude, and make a literature review relevant to the proposed theme of the final project based on secondary data.	
	CLO -4	Students are able to understand, find, conclude, and make research methodologies relevant to the proposed theme of the final project.	
	CLO -5	Students are able to understand, analyze, conclude, and make proposals for design needs based on primary and secondary data.	



	CLO -6	Students are able to compile and write a final project proposal and scientific article with the correct systematics and format.																																							
		Matrix LO – CLO <table><tr><td>CLO</td><td>LO-4</td><td>LO -5</td><td>LO -7</td><td>LO -9</td></tr><tr><td>CLO-1</td><td></td><td>V</td><td>V</td><td></td></tr><tr><td>CLO-2</td><td></td><td>V</td><td>V</td><td></td></tr><tr><td>CLO-3</td><td>V</td><td>V</td><td></td><td></td></tr><tr><td>CLO-4</td><td>V</td><td>V</td><td>V</td><td></td></tr><tr><td>CLO-5</td><td></td><td></td><td>V</td><td>V</td></tr><tr><td>CLO-6</td><td></td><td></td><td>V</td><td>V</td></tr></table>					CLO	LO-4	LO -5	LO -7	LO -9	CLO-1		V	V		CLO-2		V	V		CLO-3	V	V			CLO-4	V	V	V		CLO-5			V	V	CLO-6			V	V
CLO	LO-4	LO -5	LO -7	LO -9																																					
CLO-1		V	V																																						
CLO-2		V	V																																						
CLO-3	V	V																																							
CLO-4	V	V	V																																						
CLO-5			V	V																																					
CLO-6			V	V																																					
Brief description of the course	The Pre-Final Project course is a course attended by students before preparing the final project. In this course, students are expected to have sufficient understanding of the topic to be researched. The material coverage includes the proposed title theme, background, problems, objectives, benefits, limitations and scope, as well as literature review and research methodology relevant to the proposed final project theme. Students must be able to make proposals for design needs based on primary and secondary data, as well as compile and write final project proposals and scientific articles with the correct systematics and format.																																								
Study Material: Learning Materials	Study Materials: 1. Provisions for the theme and title of the Final Project 2. Background, problem, 3. Limitation and scope, objectives, benefits. 4. Literature review 5. Research methodology 6. Design requirement planning. 7. Proposal writing 8. Scientific article writing																																								
	Main :																																								



References		1. Aulia Siti Aisjah at al. (2022), Buku Pedoman: Penyusunan Laporan Tugas/Proyek Akhir Program Sarjana Dan Sarjana Terapan, Institut Teknologi Sepuluh Nopember Surabaya, 2022. 2. Cagan, Marty. (2017) INSPIRED: How to Create Tech Products Customers Love. Wiley 3. Norman, D. (2013). The design of everyday things. Basic Books. 4. Brown, T. (2012). Design thinking: Integrating innovation, customer experience, and brand value. Oxford University Press. 5. Kahneman, D. (2011). Thinking, fast and slow. Farrar, Straus and Giroux. 6. Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Sprint: How to solve big problems and test new ideas in just five days. Simon & Schuster. 7. Christensen, C. M. (2013). The innovator's dilemma: When new technologies cause great firms to fail. Harvard Business Review Press. 8. Carlile, P., & Langer, E. (2013). Design thinking research: Building innovators. Springer. 9. Ries, E. (2011). The lean startup: How constant innovation creates radically successful businesses. Crown Business. 10. Brown, T. (2009). Change by design: How design thinking transforms organizations and inspires innovation. HarperBusiness.					
		Supports:					
		1. Bambang Tristiyono., Buku Pedoman: Penyusunan Laporan Tugas Akhir Program Studi Desain Produk, Institut Teknologi Sepuluh Nopember Surabaya, 2020. 2. Nunnally, B., & Farkas, D. (2016). UX Research: Practical Techniques for Designing Better Products. 3. O'Grady, J. V., & O'Grady, K. V. (2017). A Designer's Research Manual, Updated and Expanded: Succeed in Design by Knowing Your Clients and Understanding what They Really Need. Rockport. 4. Kalbach, J. (2016). Mapping experiences: A complete guide to creating value through journeys, blueprints, and diagrams. " O'Reilly Media, Inc."					
Lecturer		Bambang Tristiyono, ST., M.Si					
Course requirements		-					
Mg Ke-	End ability of each learning stage (Sub-CLO)	Assessment		Learning aids, Learning Methods, Student Assignments, [Estimated Time]		Learning Materials [Literature]	Assessment Weight (%)
		Indicator	Criteria & Format	offline	online		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)



1	Students are able to understand Introduction, syllabus, course contract.	-	Criteria: Format:	Learning Format Lecture [1x2x50 = 100 minutes] Learning Methods: Student Assignment:	-	Material: Introduction, syllabus, lecture contract. Literature:	
2	Students are able to understand, find and make proposals for Final Project themes and titles in collaboration with business partners.	Accuracy and completeness in making proposals for Final Project themes and titles in collaboration with business partners.	Criteria: Accuracy of material covered. Completeness of the scope of the material. Depth of each sub-material. Presentation skills. Format: Non-test [Presentation & question and answer]	Learning Format Lecture [1x2x50 = 100 minutes] Learning Methods: Student Assignment:	-	Material: Final project theme and title Literature: Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011). Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	5%
3	Able to understand, find, conclude and make background, problems, objectives, benefits, limitations and scope of the proposed theme of the final project based on primary and secondary data.	Accuracy and completeness in understanding, finding, concluding and making the background, problems, objectives,	Criteria: Accuracy of material discussion. Completeness of the scope of the material. Depth of each sub-material. Presentation skills. Format:	Learning Format: Lecture, Discussion [1x2x50 = 100 minutes] Learning Methods: Discovery Learning, Contextual Learning [1x2x50 = 100 minutes] Student Assignments: PowerPoint	-	Material: Background, problems, objectives, benefits, limitations and scope Literature: Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011).	



		benefits, limitations and scope of the proposed theme of the final project based on primary and secondary data.	Non-test [Presentation & question and answer]	Presentation Word Document [1x2x50 = 100 minutes]		Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	
4	Able to understand, find, conclude and make the background, problems, objectives, benefits, limitations and scope of the proposed theme of the final project based on primary and secondary data.	Accuracy and completeness in understanding, finding, concluding and making the background, problems, objectives, benefits, limitations and scope of the proposed theme of the final project based on primary and	Criteria: Accuracy of material discussion. Completeness of the scope of the material. Depth of each sub-material. Presentation skills. Format: Non-test [Presentation & question and answer]	Learning Format: Lecture, Discussion [1x2x50 = 100 minutes] Learning Methods: Discovery Learning, Contextual Learning [1x2x50 = 100 minutes] Student Assignments: PowerPoint Presentation Word Document [1x2x50 = 100 minutes]	-	Material: Background, problems, objectives, benefits, limitations and scope Literature: Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011). Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	



		secondary data.					
5	Able to understand, find, conclude, and make a literature review relevant to the proposed theme of the final project based on secondary data.	Accuracy and completeness in understanding, finding, concluding, and making literature reviews relevant to the proposed theme of the final project based on secondary data.	Criteria: Accuracy of material discussion. Completeness of the scope of the material. Depth of each sub-material. Presentation skills. Format: Non-test [Presentation & question and answer]	Learning Format: Lecture, Discussion [1x2x50 = 100 minutes] Learning Methods: Discovery Learning, Contextual Learning [1x2x50 = 100 minutes] Student Assignments: PowerPoint Presentation Word Document [1x2x50 = 100 minutes]	-	Material: Literature review Literature: Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011). Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	
6	Able to understand, find, conclude, and make a literature review that is relevant to the proposed theme of the secondary data-based final project.	Accuracy and completeness in understanding, finding, concluding, and making literature reviews that are relevant to	Criteria: Accuracy of material discussion. Completeness of the scope of the material. Depth of each sub-material. Presentation skills. Format:	Learning Format: Lecture, Discussion [1x2x50 = 100 minutes] Learning Methods: Discovery Learning, Contextual Learning [1x2x50 = 100 minutes]	-	Material: Literature review Literature: Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011). Knapp, J., Zeratsky, J., & Kowitz, B. (2016).	



		the proposed theme of the secondary data-based final project.	Non-test [Presentation & question and answer]	Student Assignments: PowerPoint Presentation Word Document [1x2x50 = 100 minutes]		Christensen, C. M. (2013).	
7	Able to understand, find, conclude, and make research methodologies relevant to the proposed theme of the final project.	Accuracy and completeness in understanding, finding, concluding, and making research methodologies relevant to the proposed theme of the final project.	Criteria: Accuracy of material discussion. Completeness of the scope of the material. Depth of each sub-material. Presentation skills. Format: Non-test [Presentation & question and answer]	Learning Format: Lecture, Discussion [1x2x50 = 100 minutes] Learning Methods: Discovery Learning, Contextual Learning [1x2x50 = 100 minutes] Student Assignments: PowerPoint Presentation Word Document [1x2x50 = 100 minutes]	-	Material: Research methodology Literature: Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011). Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	
8	Midterm Evaluation						Midterm Evaluation
9	Able to understand, find, conclude, and make research methodologies	Accuracy and completeness in	Criteria: Accuracy of material covered.	Learning Format: Lecture, Discussion	-	Material:	



	relevant to the proposed theme of the final project.	understanding, finding, concluding, and making research methodologies relevant to the proposed theme of the final project.	Completeness of the scope of the material. Depth of each sub-material. Presentation skills. Format: Non-test [Presentation & question and answer]	[1x2x50 = 100 minutes] Learning Methods: Discovery Learning, Contextual Learning [1x2x50 = 100 minutes] Student Assignments: PowerPoint Presentation Word Document [1x2x50 = 100 minutes]		Research methodology Literature: Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011). Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	
10	Able to understand, analyze, conclude, and make proposals for design needs based on primary and secondary data.	Accuracy and completeness in understanding, analyzing, concluding, and making proposals for design needs based on primary and secondary data.	Criteria: Accuracy of material discussion. Completeness of the scope of the material. Depth of each sub-material. Presentation skills. Format: Non-test [Presentation & question and answer]	Learning Format: Lecture, Discussion [1x2x50 = 100 minutes] Learning Methods: Discovery Learning, Contextual Learning [1x2x50 = 100 minutes] Student Assignments: PowerPoint Presentation Word Document [1x2x50 = 100 minutes]	-	Material: Design needs Literature: Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011). Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	



11	Able to understand, analyze, conclude, and make proposals for design needs based on primary and secondary data.	Accuracy and completeness in understanding, analyzing, concluding, and making proposals for design needs based on primary and secondary data.	Criteria: Accuracy of material discussion. Completeness of the scope of the material. Depth of each sub-material. Presentation skills. Format: Non-test [Presentation & question and answer]	Learning Format: Lecture, Discussion [1x2x50 = 100 minutes] Learning Methods: Discovery Learning, Contextual Learning [1x2x50 = 100 minutes] Student Assignments: PowerPoint Presentation Word Document [1x2x50 = 100 minutes]	-	Material: Design needs Literature: Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011). Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	
12	Able to understand, analyze, conclude, and make proposals for design needs based on primary and secondary data.	Accuracy and completeness in understanding, analyzing, concluding, and making proposals for design needs based on primary and secondary data.	Criteria: Accuracy of material discussion. Completeness of the scope of the material. Depth of each sub-material. Presentation skills. Format: Non-test [Presentation & question and answer]	Learning Format: Lecture, Discussion [1x2x50 = 100 minutes] Learning Methods: Discovery Learning, Contextual Learning [1x2x50 = 100 minutes] Student Assignments: PowerPoint Presentation	-	Material: Design needs Literature: Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011). Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	



				Word Document [1x2x50 = 100 minutes]			
13	Able to compile and write final project proposals and scientific articles with the correct systematics and format.	Accuracy and completeness in compiling and writing the final project proposal and scientific articles with the correct systematics and format.	Criteria: Accuracy of material discussion. Completeness of the scope of the material. Depth of each sub-material. Presentation skills. Format: Non-test [Presentation & question and answer]	Learning Format: Lecture, Discussion [1x2x50 = 100 minutes] Learning Methods: Discovery Learning, Contextual Learning [1x2x50 = 100 minutes] Student Assignments: PowerPoint Presentation Word Document [1x2x50 = 100 minutes]	-	Material: Writing procedures for final project proposals and scientific articles Literature: Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011). Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	
14	Able to compile and write final project proposals and scientific articles with the correct systematics and format.	Accuracy and completeness in compiling and writing the final project proposal and scientific articles with the correct	Criteria: Accuracy of material discussion. Completeness of the scope of the material. Depth of each sub-material. Presentation skills. Format:	Learning Format: Lecture, Discussion [1x2x50 = 100 minutes] Learning Methods: Discovery Learning, Contextual Learning [1x2x50 = 100 minutes]	-	Material: Writing procedures for final project proposals and scientific articles Literature: Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011).	



		systematics and format.	Non-test [Presentation & question and answer]	Student Assignments: PowerPoint Presentation Word Document [1x2x50 = 100 minutes]		Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	
15	Able to compile and write final project proposals and scientific articles with the correct systematics and format.	Accuracy and completeness in compiling and writing the final project proposal and scientific articles with the correct systematics and format.	Criteria: Accuracy of material discussion. Completeness of the scope of the material. Depth of each sub-material. Presentation skills. Format:	Learning Format: Lecture, Discussion [1x2x50 = 100 minutes] Learning Methods: Discovery Learning, Contextual Learning [1x2x50 = 100 minutes] Student Assignments: PowerPoint Presentation Word Document [1x2x50 = 100 minutes]	-	Material: Writing procedures for final project proposals and scientific articles Literature : Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011). Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	50%
16	End of Semester Evaluation						30%



DP234843 SEMINAR

		INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code	
SEMESTER LEARNING PLAN								
COURSE (MK)		CODE	MK CLUSTER		CREDIT (sks)		SEMESTER	Date of Compilation
SEMINAR		DP234843	TA KP		Theory= 1	Practice= 1	7	30 December 2022
AUTHORIZATION 		RPS Developer Bambang Tristiyono, ST., M.Si		RMK Coordinator Bambang Tristiyono, ST., M.Si		Head of the study program Bambang Tristiyono, ST., M.Si		
Learning Outcomes (LO)	LO that are imposed on MK							
	LO-1		Able to show attitudes and characters that reflect: devotion to God Almighty, ethics and integrity, noble character, sensitive and concerned about social and environmental problems, respect for cultural differences and diversity, uphold law enforcement prioritizing the interests of the nation and the wider community, through creativity and innovation, excellence, strong leadership, synergy, and other potentials owned to achieve maximum results.					
	LO-2		Able to study and utilize science and technology in order to apply it in the field of Product Design, and be able to make decisions appropriately from the results of their own work and group work in the form of a final project report or other forms of learning activities whose output is equivalent to the final project.					
	LO-3	V	The output is equivalent to the final project through logical, critical, systematic and innovative thinking.					
	LO-4	V	Able to manage one's own learning, and develop oneself as a lifelong learner to compete at the national and international levels, in order to contribute significantly to solving problems by implementing information and communication technology and paying attention to the principles of sustainability and understanding technology-based entrepreneurship.					



	LO-5	V	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design systems engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.			
	LO-6		Able to understand and apply knowledge, insights and sciences related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-culture, economics and business, entrepreneurship, code of ethics and IPR.			
	LO-7		Able to design products and their systems with consideration of all aspects that influence them, including: basic principles of design and aesthetics, material character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.			
	LO-8		Able to research problems, formulate and publish design needs and solutions for the present or future using relevant design and research methodologies.			
	LO-9	V	Able and skillful in using design process tools that include: manual or digital equipment according to technology and the times.			
	Course Learning Outcomes (CLO)					
	CLO-1	Students are able to understand, express, describe, analyze, summarize and conclude the Review of the Final Project Report.				
	CLO -2	Students are able to present Colloquium 2				
	CLO -3	Students are able to present Colloquium 3 exhibition				
	CLO -4	Students are able to present Colloquium 4				
	CLO -5	Students are able to prove that they have passed the Judiciary				
		Matrix LO – CLO				
		CLO	LO-3	LO -4	LO -5	LO -9
		CLO -1		V	V	
		CLO -2		V	V	
		CLO -3	V	V		
		CLO -4	V	V	V	
		CLO -5			V	V



		CLO -6			V	V	
Brief description of the course	Seminar courses are scientific presentations delivered by students in front of lecturers or guest speakers who are present. The scientific presentation is the result of a study that has been carried out by students related to a predetermined topic. Explain in detail about the results of studies that have been carried out by students related to the specified topic. The explanation includes introduction, literature review, methodology, study and analysis, design implementation, conclusions and suggestions.						
Study Material: Learning Materials	Study Materials: 1. Review Report Chapter 1: Introduction 2. Review Report Chapter 2: Literature Review 3. Review Report Chapter 3: Methodology 4. Review Report Chapter 4: Study and analysis 5. Review Report Chapter 5: Design implementation 6. Review Report Chapter 6: Conclusion 7. Colloquium 2 8. Colloquium 3 9. Colloquium 4 10. Judiciary						
References	Main : 11. Aulia Siti Aisjah at al. (2022), Buku Pedoman: Penyusunan Laporan Tugas/Proyek Akhir Program Sarjana Dan Sarjana Terapan, Institut Teknologi Sepuluh Nopember Surabaya, 2022. 12. Brown, T. (2017). Effective communication skills for the workplace. Seminar on Communication Skills, Communication Association of America. 13. Lassiter, D. (2017). The complete guide to public speaking (5th ed.). Boston, MA: Pearson. 14. LOverbeeke, K., Kiefer, C., Carroll, J. M., & Brown, B. (2018). Design Research: Theories, Methodologies, and Product Modelling. Springer. Supports: 1. Bambang Tristiyono., Buku Pedoman: Penyusunan Laporan Tugas Akhir Program Studi Desain Produk, Institut Teknologi Sepuluh Nopember Surabaya, 2020. 2. Lucas, S. (2015). The art of public speaking (11th ed.). New York, NY: McGraw-Hill. 3. Laurel, B. (2013). Design Research: Methods and Perspectives. MIT Press.						



Lecturer		Bambang Tristiyono, ST., M.Si					
Course requirements		-					
Mg Ke-	End ability of each learning stage (Sub-CLO)	Assessment		Learning aids, Learning Methods, Student Assignments, [Estimated Time]		Learning Materials [Literature]	Assessment Weight (%)
		Indicator	Criteria & Format	offline	online		
(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)
1	Students are able to understand Introduction, syllabus, course contract.	-	Criteria : Format :	Learning Format Lecture [1x2x50 = 100 minutes] Learning Methods: Student Assignment:	-	Material : Introduction, syllabus, course contract. Literature :	
2	Students are able to understand and express Review Report Chapter 1: Introduction	Accuracy and completeness in understanding and expressing the Review Report Chapter 1: Introduction	Criteria : Accuracy of Materialal covered. Completeness of Materialal scope. Depth of each sub-Materialal. Presentation skills. Format : Non Test [Presentation & question and answer]	Form of Learning: Presentation, Discussion [1x2x50 = 100 minutes] Learning Method: Self-Directed Learning [1x2x50 = 100 minutes] Student Assignment: Power point presentation Word document [1x2x50 = 100 minutes]	-	Material : Report Review Chapter 1: Introduction Literature : Aulia Siti Aisjah at al. (2022). Brown, T. (2017). LOverbeeke, K., Kiefer, C., Carroll, J. M., & Brown, B. (2018).	



3	Students are able to understand and describe the report review Chapter 2: Literature review	Accuracy and completeness in understanding and describing the report review Chapter 2: Literature review	Criteria : Accuracy of Materialal covered. Completeness of Materialal scope. Depth of each sub-Materialal. Presentation skills. Format : Non Test [Presentation & question and answer]	Form of Learning: Presentation, Discussion [1x2x50 = 100 minutes] Learning Method: Self-Directed Learning [1x2x50 = 100 minutes] Student Assignment: Power point presentation Word document [1x2x50 = 100 minutes]	-	Material : Report Review Chapter 2: Literature Review Literature : Aulia Siti Aisjah at al. (2022). Brown, T. (2017). LOverbeeke, K., Kiefer, C., Carroll, J. M., & Brown, B. (2018).	
4	Students are able to understand, express and describe the report review Chapter 3: Methodology	Accuracy and completeness in understanding, expressing and describing the report review Chapter 3: Methodology	Criteria : Accuracy of Materialal covered. Completeness of Materialal scope. Depth of each sub-Materialal. Presentation skills. Format : Non Test [Presentation & question and answer]	Form of Learning: Presentation, Discussion [1x2x50 = 100 minutes] Learning Method: Self-Directed Learning [1x2x50 = 100 minutes] Student Assignment: Power point presentation Word document [1x2x50 = 100 minutes]	-	Material : Report Review Chapter 3: Methodology Literature : Aulia Siti Aisjah at al. (2022). Brown, T. (2017). LOverbeeke, K., Kiefer, C., Carroll, J. M., & Brown, B. (2018).	



5	Students are able to express, analyze and conclude Review Report Chapter 4: Study and analysis	Accuracy and completeness in expressing, analyzing and concluding the Review Report Chapter 4: Study and analysis	Criteria : Accuracy of Materialal covered. Completeness of Materialal scope. Depth of each sub-Materialal. Presentation skills. Format : Non Test [Presentation & question and answer]	Form of Learning: Presentation, Discussion [1x2x50 = 100 minutes] Learning Method: Self-Directed Learning [1x2x50 = 100 minutes] Student Assignment: Power point presentation Word document [1x2x50 = 100 minutes]	-	Material : Review Report Chapter 4: Study and analysis Literature : Aulia Siti Aisjah at al. (2022). Brown, T. (2017). LOverbeeke, K., Kiefer, C., Carroll, J. M., & Brown, B. (2018).	
6	Students are able to express, describe and prove Review Report Chapter 5: Design implementation	Accuracy and completeness in expressing, describing and proving the Review Report Chapter 5: Design implementation	Criteria : Accuracy of Materialal covered. Completeness of Materialal scope. Depth of each sub-Materialal. Presentation skills. Format : Non Test [Presentation & question and answer]	Form of Learning: Presentation, Discussion [1x2x50 = 100 minutes] Learning Method: Self-Directed Learning [1x2x50 = 100 minutes] Student Assignment: Power point presentation Word document [1x2x50 = 100 minutes]	-	Material : Report Review Chapter 5: Design implementation Literature : Aulia Siti Aisjah at al. (2022). Brown, T. (2017). LOverbeeke, K., Kiefer, C., Carroll, J. M., & Brown, B. (2018).	



7	Students are able to summarize and conclude Review Report Chapter 6: Conclusion	Accuracy and completeness in summarizing and concluding Review Report Chapter 6: Conclusion	Criteria : Accuracy of Materialal covered. Completeness of Materialal scope. Depth of each sub-Materialal. Presentation skills. Format : Non Test [Presentation & question and answer]	Form of Learning: Presentation, Discussion [1x2x50 = 100 minutes] Learning Method: Self-Directed Learning [1x2x50 = 100 minutes] Student Assignment: Power point presentation Word document [1x2x50 = 100 minutes]	-	Material : Report Review Chapter 6: Conclusion Literature : Aulia Siti Aisjah at al. (2022). Brown, T. (2017). LOverbeeke, K., Kiefer, C., Carroll, J. M., & Brown, B. (2018).	
8	Midterm Evaluation-check document eligibility						15%
9	Students are able to present Colloquium 2 Materialal	Accuracy and completeness in presenting Colloquium 2 Materialal	Criteria : Accuracy of Materialal covered. Completeness of Materialal scope. Depth of each sub-Materialal. Presentation skills. Format : Non Test [Presentation & question and answer]	Form of Learning: Presentation, Discussion [1x2x50 = 100 minutes] Learning Method: Self-Directed Learning [1x2x50 = 100 minutes] Student Assignment: Power point presentation Supporting documents [1x2x50 = 100 minutes]	-	Material : Colloquium Material 2 Literature : Aulia Siti Aisjah at al. (2022). Brown, T. (2017). LOverbeeke, K., Kiefer, C., Carroll, J. M., & Brown, B. (2018).	



10	Students are able to present Colloquium 2 Materialal	Accuracy and completeness in presenting Colloquium 2 Materialal	Criteria : Accuracy of Materialal covered. Completeness of Materialal scope. Depth of each sub-Materialal. Presentation skills. Format : Non Test [Presentation & question and answer]	Form of Learning: Presentation, Discussion [1x2x50 = 100 minutes] Learning Method: Self-Directed Learning [1x2x50 = 100 minutes] Student Assignment: Power point presentation Supporting documents [1x2x50 = 100 minutes]	-	Material : Colloquium Materials Literature : Aulia Siti Aisjah at al. (2022). Brown, T. (2017). LOverbeeke, K., Kiefer, C., Carroll, J. M., & Brown, B. (2018).	
11	Students are able to present Colloquium 2 Materialal	Accuracy and completeness in presenting Colloquium 2 Materialal	Criteria : Accuracy of Materialal covered. Completeness of Materialal scope. Depth of each sub-Materialal. Presentation skills. Format : Non Test [Presentation & question and answer]	Form of Learning: Presentation, Discussion [1x2x50 = 100 minutes] Learning Method: Self-Directed Learning [1x2x50 = 100 minutes] Student Assignment: Power point presentation Supporting documents [1x2x50 = 100 minutes]	-	Material : Colloquium Materials Literature : Aulia Siti Aisjah at al. (2022). Brown, T. (2017). LOverbeeke, K., Kiefer, C., Carroll, J. M., & Brown, B. (2018).	



12	Students are able to present Colloquium 2 Materialal	Accuracy and completeness in presenting Colloquium 2 Materialal	Criteria : Accuracy of Materialal covered. Completeness of Materialal scope. Depth of each sub-Materialal. Presentation skills. Format : Non Test [Presentation & question and answer]	Form of Learning: Presentation, Discussion [1x2x50 = 100 minutes] Learning Method: Self-Directed Learning [1x2x50 = 100 minutes] Student Assignment: Power point presentation Supporting documents [1x2x50 = 100 minutes]	-	Material : Colloquium Materials Literature : Aulia Siti Aisjah at al. (2022). Brown, T. (2017). LOverbeeke, K., Kiefer, C., Carroll, J. M., & Brown, B. (2018).	15%
13	Students are able to present Colloquium 3 exhibition	Accuracy and completeness in presenting the exhibition Colloquium 3	Criteria : Accuracy of Materialal covered. Completeness of Materialal scope. Depth of each sub-Materialal. Presentation skills. Format : Non Test [Exhibition]	Form of Learning: Presentation, Discussion [1x2x50 = 100 minutes] Learning Method: Self-Directed Learning [1x2x50 = 100 minutes] Student Assignment: Power point presentation Supporting documents [1x2x50 = 100 minutes]	-	Material : Colloquium Exhibition 3 Literature : Aulia Siti Aisjah at al. (2022). Brown, T. (2017). LOverbeeke, K., Kiefer, C., Carroll, J. M., & Brown, B. (2018).	20%



14	Students are able to present Colloquium 4 Materialal	Accuracy and completeness in presenting Materialal Colloquium 4	Criteria : Accuracy of Materialal covered. Completeness of Materialal scope. Depth of each sub-Materialal. Presentation skills. Format : Non Test [Presentation & question and answer]	Form of Learning: Presentation, Discussion [1x2x50 = 100 minutes] Learning Method: Self-Directed Learning [1x2x50 = 100 minutes] Student Assignment: Power point presentation Supporting documents [1x2x50 = 100 minutes]	-	Material : Colloquium Material 4 Literature : Aulia Siti Aisjah at al. (2022). Brown, T. (2017). LOverbeeke, K., Kiefer, C., Carroll, J. M., & Brown, B. (2018).	
15	Students are able to prove that they have passed the Judiciary	Accuracy and completeness in proving passing Judicium	Criteria: Accuracy of the subject matter. Completeness of Materialal scope. Format: Non-Test [Check the completeness of the document]	Form of Learning: Presentation, Discussion [1x2x50 = 100 minutes] Learning Method: Self-Directed Learning [1x2x50 = 100 minutes] Student Assignment: presentation Supporting documents [1x2x50 = 100 minutes]	-	Material : Judiciary Literature : Aulia Siti Aisjah at al. (2022). Brown, T. (2017). LOverbeeke, K., Kiefer, C., Carroll, J. M., & Brown, B. (2018).	
16	Final Semester-Final Year Evaluation						50%

**DP234844 FINAL ASSIGNMENT**

	INSTITUT TEKNOLOGI SEPULUH NOPEMBER SURABAYA, FACULTY OF CREATIVE DESIGN AND DIGITAL BUSINESS, INDUSTRIAL DESIGN PROGRAM					Document Code	
SEMESTER LEARNING PLAN							
COURSE (MK)	CODE	MK CLUSTER		CREDIT (sks)		SEMESTER	Date of Compilation
FINAL ASSIGNMENT	DP234844	TA KP		Theory= 0	Practice= 8	8	30 December 2022
AUTHORIZATION 	RPS Developer Bambang Tristiyono, ST., M.Si		RMK Coordinator Bambang Tristiyono, ST., M.Si		Head of the study program Bambang Tristiyono, ST., M.Si		
Learning Outcomes (LO)	LOs that are imposed on MKs						
	LO-1	V	Able to show attitudes and characters that reflect: devotion to God Almighty, ethics and integrity, noble character, sensitive and concerned about social and environmental problems, respect for cultural differences and diversity, uphold law enforcement prioritizing the interests of the nation and the wider community, through creativity and innovation, excellence, strong leadership, synergy, and other potentials owned to achieve maximum results.				
	LO-2	V	Able to study and utilize science and technology in order to apply it in the field of Product Design, and be able to make decisions appropriately from the results of their own work and group work in the form of a final project report or other forms of learning activities whose output is equivalent to the final project.				
	LO-3	V	The output is equivalent to the final project through logical, critical, systematic and innovative thinking.				
	LO-4	V	Able to manage one's own learning, and develop oneself as a lifelong learner to compete at the national and international levels, in order to contribute significantly to solving problems by implementing information and communication technology and paying attention to the principles of sustainability and understanding technology-based entrepreneurship.				



	LO-5	V	Able to understand and apply knowledge of theoretical concepts of product design, including: basic principles of design and aesthetics, Materialal character, function, user experience, ergonomics, design systems engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.
	LO-6	V	Able to understand and apply knowledge, insights and sciences related to product design, including: design history, design review, design systems, behavior and lifestyle, environmental issues, technological developments, UI-UX design, socio-culture, economics and business, entrepreneurship, code of ethics and IPR.
	LO-7	V	Able to design products and their systems with consideration of all aspects that influence them, including: basic principles of design and aesthetics, Materialal character, function, user experience, ergonomics, design system engineering, technology, economic factors, environmental and socio-cultural factors, market and business aspects.
	LO-8	V	Able to research problems, formulate and publish design needs and solutions for the present or future using relevant design and research methodologies.
	LO-9	V	Able and skillful in using design process tools that include: manual or digital equipment according to technology and the times.
	Course Learning Outcomes (CLO)		
	CLO -1	Able to manage final project design independently, with ethics and integrity, logically, critically, and systematically.	
	CLO -2	Able to understand, apply, analyze, and conclude the preliminary data of the final project according to the theme, background, problems, scope and solution of the design concept.	
	CLO -3	Able to understand, apply, analyze, and conclude design needs study studies according to the theme, background, problems, scope and solution of the design concept.	
	CLO -4	Able to understand, apply, analyze, and conclude related design analysis studies and details according to the concept and design ideation and its alternatives that become problem solving.	
	CLO -5	Able to understand, apply, analyze, conclude, and make drawings and prototypes of final design design both manually and digitally in 2D and 3D.	
	CLO -6	Able to understand and evaluate the final design through simulation, through digital models, prototype models, or prototypes and product tests on consumers.	
	CLO -7	Able to understand, apply and present final project work verbally / orally and written documents in accordance with the rules of scientific writing.	



Brief description of the course		Matrix LO – CLO									
		CLO	LO-1	LO -2	LO -3	LO -4	LO -5	LO -6	LO -7	LO -8	LO -9
		CLO-1	V	V	V						
		CLO-2				V	V	V	V		
		CLO-3				V	V	V	V		
		CLO-4				V	V	V	V		
		CLO-5						V		V	
		CLO-6								V	V
								V	V		
Study Material: Learning Materials	The Final Project Course is a studio course which is a continuation of the design project from the feasibility study that has been carried out in the Pre-Final Project Course. In this course, students carry out their design tasks independently under the supervision of the Supervisor. Relevant design theories that have been obtained in the previous semester are implemented in this final project. The scope of discussion and study includes aspects of market/consumer orientation, business aspects, cooperation, economics, socio-culture, technological aspects, system engineering, process Materials, ergonomics, aesthetics, and the function of a product. Students can choose the theme of design, according to their field of interest, including transportation equipment products, furniture and workstations, Apparel and Fashion, Appliance Products, Medical Devices Products and other equivalent products.										
References	Study Materials: 1. Colloquium 1 2. Colloquium 2 3. Colloquium 3 4. Colloquium 4										
Literature Lecturer	Main : 1. Aulia Siti Aisjah at al. (2022), Buku Pedoman: Penyusunan Laporan Tugas/Proyek Akhir Program Sarjana Dan Sarjana Terapan, Institut Teknologi Sepuluh Nopember Surabaya, 2022. 2. Cagan, Marty. (2017) INSPIRED: How to Create Tech Products Customers Love. Wiley 3. Norman, D. (2013). The design of everyday things. Basic Books. 4. Brown, T. (2012). Design thinking: Integrating innovation, customer experience, and brand value. Oxford University Press. 5. Kahneman, D. (2011). Thinking, fast and slow. Farrar, Straus and Giroux. 6. Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Sprint: How to solve big problems and test new ideas in just five days. Simon & Schuster.										



		7. Christensen, C. M. (2013). The innovator's dilemma: When new technologies cause great firms to fail. Harvard Business Review Press. 8. Carlile, P., & Langer, E. (2013). Design thinking research: Building innovators. Springer. 9. Ries, E. (2011). The lean startup: How constant innovation creates radically successful businesses. Crown Business. 10. Brown, T. (2009). Change by design: How design thinking transforms organizations and inspires innovation. HarperBusiness.					
		Supports :					
		1. Bambang Tristiyono., Buku Pedoman: Penyusunan Laporan Tugas Akhir Program Studi Desain Produk, Institut Teknologi Sepuluh Nopember Surabaya, 2020. 2. Nunnally, B., & Farkas, D. (2016). UX Research: Practical Techniques for Designing Better Products. 3. O'Grady, J. V., & O'Grady, K. V. (2017). A Designer's Research Manual, Updated and Expanded: Succeed in Design by Knowing Your Clients and Understanding what They Really Need. Rockport. 4. Kalbach, J. (2016). Mapping experiences: A complete guide to creating value through journeys, blueprints, and diagrams. " O'Reilly Media, Inc.".					
Course requirements		Bambang Tristiyono, ST., M.Si					
Learning Outcomes (LO)		-					
Mg Ke-	End ability of each learning stage (Sub-CLO)	Assessment		Learning aids, Learning Methods, Student Assignments, [Estimated Time]		Learning Materialals [Literature]	Assessm ent Weight (%)
		Indicator	Criteria & Format	offline	online		
(1)	(2)	(3)	(4)	(5)	(6)	(1)	(2)
1	Students are able to understand Introduction, syllabus, lecture contract.	-	Criteria : Format :	Learning Format Lecture [1x2x50 = 100 minutes] Learning Methods: Student Assignment:	-	Material : Introduction, silabus, kontrak kuliah. Literature :	



2	Able to understand, apply, analyze, conclude and make Colloquium Evaluation 1	Accuracy and completeness in understanding, applying, analyzing, concluding and making Evaluation Colloquium 1	Criteria : The accuracy of the Material discussion. Completeness of material scope. Depth of each sub material. Ability to explain. Presentation skills. Format : Non Test [Presentation & question and answer]	Learning Format: Assistance [1x3x50 = 100 minutes] Learning Method: Self-Directed Learning Project Based Learning [1x10x50 = 500 minutes] Student Assignment: Power point presentation TA report Portfolio of design process 2D/3D Presentation Drawing Engineering Drawings Mock-up/Prototype IPR Document [1x11x50 = 550 minutes]	-	Material : Evaluasi Kolokium 1 Literature : Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011). Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	
3	Able to understand, apply, analyze, conclude and make Colloquium Evaluation 1	Accuracy and completeness in understanding, applying, analyzing, concluding and	Criteria : The accuracy of the Material discussion. Completeness of material scope. Depth of each sub material. Ability to explain.	Learning Format: Assistance [1x3x50 = 100 minutes] Learning Method: Self-Directed Learning	-	Material : Evaluasi Kolokium 1 Literature : Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011).	



		making Colloquium Evaluation 1	Presentation skills. Format : Non Test [Presentation & question and answer]	Project Based Learning [1x10x50 = 500 minutes] Student Assignment: Power point presentation TA report Portfolio of design process 2D/3D Presentation Drawing Engineering Drawings Mock-up/Prototype IPR Document [1x11x50 = 550 minutes]		Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	
4	Able to understand, apply, analyze, conclude and make Colloquium Evaluation 1	Accuracy and completeness in understanding, applying, analyzing, concluding and making Colloquium Evaluation 1	Criteria : The accuracy of the Material discussion. Completeness of material scope. Depth of each sub material. Ability to explain. Presentation skills. Format : Non Test [Presentation & question and answer]	Learning Format: Assistance [1x3x50 = 100 minutes] Learning Method: Self-Directed Learning Project Based Learning [1x10x50 = 500 minutes] Student Assignment: Power point presentation TA report	-	Material : Evaluasi Kolokium 1 Literature : Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011). Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	



				Portfolio of design process 2D/3D Presentation Drawing Engineering Drawings Mock-up/Prototype IPR Document [1x11x50 = 550 minutes]			
5	Able to understand, apply, analyze, conclude and make Colloquium Target 2	Accuracy and completeness in understanding, applying, analyzing, concluding and making Colloquium Target 2	Criteria : The accuracy of the Material discussion. Completeness of material scope. Depth of each sub material. Ability to explain. Presentation skills. Format : Non Test [Presentation & question and answer]	Learning Format: Assistance [1x3x50 = 100 minutes] Learning Method: Self-Directed Learning Project Based Learning [1x10x50 = 500 minutes] Student Assignment: Power point presentation TA report Portfolio of design process 2D/3D Presentation Drawing Engineering Drawings Mock-up/Prototype IPR Document	-	Material : Target Kolokium 2 Literature : Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011). Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	



				[1x11x50 = 550 minutes]			
6	Able to understand, apply, analyze, conclude and make Target Colloquium 2	Accuracy and completeness in understanding, applying, analyzing, concluding and making Colloquium Target 2	Criteria : The accuracy of the Material discussion. Completeness of material scope. Depth of each sub material. Ability to explain. Presentation skills. Format : Non Test [Presentation & question and answer]	Learning Format: Assistance [1x3x50 = 100 minutes] Learning Method: Self-Directed Learning Project Based Learning [1x10x50 = 500 minutes] Student Assignment: Power point presentation TA report Portfolio of design process 2D/3D Presentation Drawing Engineering Drawings Mock-up/Prototype IPR Document [1x11x50 = 550 minutes]	-	Material : Target Kolokium 2 Literature : Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011). Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	
7	Able to understand, apply, analyze, conclude and make Colloquium Target 2	Accuracy and completeness in understanding, applying,	Criteria : The accuracy of the Material discussion. Completeness of material scope.	Learning Format: Assistance [1x3x50 = 100 minutes] Learning Method: Self-Directed Learning	-	Material : Target Kolokium 2 Literature : Aulia Siti Aisjah at al. (2022). Norman, D. (2013).	



		analyzing, concluding and making Colloquium Target 2	Depth of each sub material. Ability to explain. Presentation skills. Format : Non Test [Presentation & question and answer]	Project Based Learning [1x10x50 = 500 minutes] Student Assignment: Power point presentation TA report Portfolio of design process 2D/3D Presentation Drawing Engineering Drawings Mock-up/Prototype IPR Document [1x11x50 = 550 minutes]		Brown, T. (2012). Kahneman, D. (2011). Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	
8	Able to understand, apply, analyze, conclude and create Target Colloquium 2	Accuracy and completeness in understanding, applying, analyzing, concluding and creating Target Colloquium 2	Criteria : The accuracy of the Material discussion. Completeness of material scope. Depth of each sub material. Ability to explain. Presentation skills. Format : Non Test [Presentation & question and answer]	Learning Format: Assistance [1x3x50 = 100 minutes] Learning Method: Self-Directed Learning Project Based Learning [1x10x50 = 500 minutes] Student Assignment: Power point presentation TA report	-	Material : Target Kolokium 2 Literature : Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011). Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	



				Portfolio of design process 2D/3D Presentation Drawing Engineering Drawings Mock-up/Prototype IPR Document [1x11x50 = 550 minutes]			
9	Able to understand, apply, analyze, conclude and create Target Colloquium 2	Accuracy and completeness in understanding, applying, analyzing, concluding and creating Target Colloquium 2	Criteria : The accuracy of the Material discussion. Completeness of material scope. Depth of each sub material. Ability to explain. Presentation skills. Format : Non Test [Presentation & question and answer]	Learning Format: Assistance [1x3x50 = 100 minutes] Learning Method: Self-Directed Learning Project Based Learning [1x10x50 = 500 minutes] Student Assignment: Power point presentation TA report Portfolio of design process 2D/3D Presentation Drawing Engineering Drawings Mock-up/Prototype IPR Document	-	Material : Target Kolokium 2 Literature : Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011). Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	



				[1x11x50 = 550 minutes]			
10	Colloquium Session 2						30%
11	Able to understand, apply, analyze, conclude and make Colloquium Target 3	Accuracy and completeness in understanding, applying, analyzing, concluding and making Colloquium Target 3	Criteria : The accuracy of the Material discussion. Completeness of material scope. Depth of each sub material. Ability to explain. Presentation skills. Format : Non Test [Presentation & question and answer]	Learning Format: Assistance [1x3x50 = 100 minutes] Learning Method: Self-Directed Learning Project Based Learning [1x10x50 = 500 minutes] Student Assignment: Power point presentation TA report Portfolio of design process 2D/3D Presentation Drawing Engineering Drawings Mock-up/Prototype IPR Document [1x11x50 = 550 minutes]	-	Material : Target Kolokium 3 Literature : Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011). Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	
12	Able to understand, apply, analyze, conclude and make Colloquium Target 3	Accuracy and completeness in understanding,	Criteria : The accuracy of the Material discussion.	Learning Format: Assistance [1x3x50 = 100 minutes]	-	Material : Target Kolokium 3 Literature :	



		applying, analyzing, concluding and making Colloquium Target 3	Completeness of material scope. Depth of each sub material. Ability to explain. Presentation skills. Format : Non Test [Presentation & question and answer]	Learning Method: Self-Directed Learning Project Based Learning [1x10x50 = 500 minutes] Student Assignment: Power point presentation TA report Portfolio of design process 2D/3D Presentation Drawing Engineering Drawings Mock-up/Prototype IPR Document [1x11x50 = 550 minutes]		Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011). Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	
13	Able to understand, apply, analyze, conclude and make Colloquium Target 3	Accuracy and completeness in understanding, applying, analyzing, concluding and making Colloquium Target 3	Criteria : The accuracy of the Material discussion. Completeness of material scope. Depth of each sub material. Ability to explain. Presentation skills. Format : Non Test [Presentation &	Learning Format: Assistance [1x3x50 = 100 minutes] Learning Method: Self-Directed Learning Project Based Learning [1x10x50 = 500 minutes] Student Assignment: Power point presentation	-	Material : Target Kolokium 3 Literature : Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011). Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	



			question and answer]	TA report Portfolio of design process 2D/3D Presentation Drawing Engineering Drawings Mock-up/Prototype IPR Document [1x11x50 = 550 minutes]			
14	Colloquium Session 3						30%
15	Able to understand, apply, analyze, conclude and make Colloquium Target 4	Accuracy and completeness in understanding, applying, analyzing, concluding and making Colloquium Target 4	Criteria : The accuracy of the Material discussion. Completeness of material scope. Depth of each sub material. Ability to explain. Presentation skills. Format : Non Test [Presentation & question and answer]	Learning Format: Assistance [1x3x50 = 100 minutes] Learning Method: Self-Directed Learning Project Based Learning [1x10x50 = 500 minutes] Student Assignment: Power point presentation TA report Portfolio of design process 2D/3D Presentation Drawing Engineering Drawings Mock-up/Prototype	-	Material : Target Kolokium 4 Literature : Aulia Siti Aisjah at al. (2022). Norman, D. (2013). Brown, T. (2012). Kahneman, D. (2011). Knapp, J., Zeratsky, J., & Kowitz, B. (2016). Christensen, C. M. (2013).	



				IPR Document [1x11x50 = 550 minutes]			
16	Colloquium Session 4						40%

Note:

1. **Graduate Learning Outcomes (CPL-PRODI)** are the abilities possessed by each graduate of the study program (PRODI), which are internalized attitudes, knowledge mastery, and skills in accordance with the program level obtained through the learning process.
2. **CPL** assigned to courses consists of several graduate learning outcomes of the study program (CPL-PRODI) used for the formation/development of a course, including attitude aspects, general skills, specific skills, and knowledge.
3. **Course Performance (CPMK)** is the specific elaboration of CPL assigned to a course, and it is specific to the subject matter or content of that course.
4. **Sub-Course Performance (Sub-CPMK)** is the specific elaboration of CPMK that can be measured or observed and represents the planned final capability at each stage of learning, specific to the content of that course.
5. **Assessment indicators** of abilities in the process and results of student learning are specific and measurable statements identifying the abilities or performance of student learning, accompanied by evidence.
6. **Assessment Criteria** are benchmarks used as measures or standards for the achievement of learning in assessments based on established indicators. Criteria are guidelines for assessors to ensure consistent and unbiased assessments. Criteria can be quantitative or qualitative.
7. **Forms of assessment:** tests and non-tests.
8. **Forms of learning:** Lectures, Recitations, Tutorials, Seminars or equivalent, Practicum, Studio Practice, Workshop Practice, Field Practice, Research, Community Service, and/or other equivalent forms of learning.
9. **Learning methods:** Small Group Discussion, Role-Play & Simulation, Discovery Learning, Self-Directed Learning, Cooperative Learning, Collaborative Learning, Contextual Learning, Project-Based Learning, and other equivalent methods.



10. **Learning materials** are details or descriptions of study materials that can be presented in the form of several main and sub-topics.
11. **Assessment weight** is the percentage of assessment for each achievement of Sub-CPMK, proportionate to the difficulty level of that Sub-CPMK achievement, with a total of 100%.
12. **TM**= Face-to-face, **PT**= Structured Assignments, **BM**= Self-Directed Learning.



11. Learning Management

In the management of curriculum and learning implementation, it adheres to the management standards outlined in Articles 40-41 of Ministry of Education and Culture Regulation No. 3 of 2020 and aligns with the Organizational Structure and Working Procedures of the Education Unit (SOTK UPPS).

No	Activity	Official
1	Responsible for curriculum development	Head of Department Bambang Tristiyono, S.T., M.Si
2	Person in Charge for Learning Materials (RPS, RAE dan RT) for Courses in the Curriculum.	Departemen Secretary Andhika Estiyono, ST., MT. Curriculum Secretary Arie Kurniwan, S.T., M.Ds
3	Responsible for monitoring and evaluating curriculum implementation (in accordance with learning materials) • Verification of question suitability with CPMK and CPL • Verification of assessment duration in relation to Course Credit Weight	Head of Laboratorium Djoko Kuswanto, ST., M.Biotech Hertina Susandari, S.T., M.T. Ari Dwi Krisbianto, S.T., M.Ds. Arie Kurniawan, S.T., M.Ds.
4	Person in Charge for Monitoring and Evaluation of the MBKM • Verification of the duration of MBKM activities • Verification of the congruence of competencies acquired with CPL • Verification of the appropriateness of form and technique in assessment with CPL • Verification of guidelines for students, field supervisors, and program advisors	Task Force for MBKM of Industrial Design Departemen Bambang Tristiyono, S.T., M.Si Arie Kurniwan, S.T., M.Ds
5	Person in Charge for Monitoring and Evaluating the Attainment of CPL, as well as reporting on the achievement of CPL	Head of Laboratorium Djoko Kuswanto, ST., M.Biotech Hertina Susandari, S.T., M.T. Ari Dwi Krisbianto, S.T., M.Ds. Arie Kurniawan, S.T., M.Ds.

