

Computer Aided Manufacture

DESCRIPTION OF COURSE UNIT

Program Studi Sarjana (S1) Desain Produk

Bachelor of Industrial Design (BOLD)

2018-2023



Description of Course Unit
according to the ECTS User's Guide 2015

| | |
|--|---|
| Course unit title | Computer Aided Manufacture |
| Course unit code | DP184517 |
| Type of course unit | Compulsory |
| Level of course unit | First cycle Bachelor |
| Year of study when the course unit is delivered | 3 rd year |
| Semester/trimester when the course unit is delivered | 5 th semester |
| Number of ECTS credits allocated | 6,4 ECTS Credits |
| Name of lecturer | Arie Kurniawan, S.T., M.Ds. |
| Learning outcomes of the course unit | <p>Students will be able to design maximally within the limitations of tools and machines.</p> <ol style="list-style-type: none"> 1. Students will be able to operate machines correctly and safely. 2. Students will be able to operate CAM software and generate G-Code as machine input. 3. Students will know the workflow steps in a manufacturing process according to the case and product creation. 4. Students will be able to use applications that support evaluation and correction goals. 5. Students will be able to assemble components that have been created. |
| Mode of delivery | face-to-face |
| Prerequisites and co-requisites | - |
| Course content | <p>Planning and Rapid and Accurate Prototyping. There is clarity of information for review in subsequent production stages in a workflow. Utilizing subtractive methods (CNC) or additive methods (3D printing) according to the product case and already meeting the prerequisites and limitations of the automated machine operation.</p> <ul style="list-style-type: none"> • Bryden, D. (2014). CAD and rapid prototyping for product design. Laurence King Publ.. • Chang, K. H. (2014). Product design modeling using CAD/CAE: the computer aided engineering design series. Academic Press. |

| | |
|--|--|
| | • Brunet, P., Hoffmann, C., & Roller, D. (Eds.). (2013). Cad Tools and algorithms for product design. Springer Science & Business Media. |
| Recommended or required reading and other learning resources/tools | - |
| Planned learning activities and teaching methods | Discovery Learning; Case Study; Team Based Learning (Metode Pembelajaran) |
| Language of instruction | Indonesia |
| Assessment methods and criteria | Assignment, Project, Midterm Evaluation and Final Evaluation |

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Course Details

DP184516

Sistem Desain

System Design

4 credits

Coordinator: Arie Kurniawan, S.T., M.Ds.

Course Form

:

Course Type

:

Tidak Ada

Minimum Passing Grade

:

C

Course Description

Perkuliahan di Desain Produk ITS Surabaya yang berisi tentang pemahaman pada sistem desain. Pada dasarnya perkuliahan ini berhubungan dengan teori yang disampaikan pada apresiasi desain dan metodologi desain, sedangkan pada perkuliahan sistem desain, pendalaman tentang metodologi dititik beratkan pada penggalan knowledge sistem pada desain produk.

No description yet.

LO CLO Assessment & Evaluation Plan Lesson Plan

Learning Outcomes Charged by the Course

Mohon untuk mengecek kurikulum yang lain juga pada pilihan di bawah ini (lalu klik **Tampilkan**). Kemudian mohon pastikan centang CPL telah sesuai dengan yang dibutuhkan oleh CPMK.

Curriculum: Kurikulum 2018 S-1 Desain Produk

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| No. | Description |
|-------------------------------------|---|
| <input type="checkbox"/> | 1. Mampu menyusun konsep desain dengan mengidentifikasi sumber masalah, menganalisis, dan mensintesis kebutuhan dengan mempertimbangkan aspek estetika, kenyamanan dan keselamatan pengguna pada suatu produk <i>Able to develop design concepts by identifying problem sources, analyzing, and synthesizing needs by considering aesthetic, comfort and user safety aspects of a product</i> |
| <input type="checkbox"/> | 2. Mampu merancang sistem produk dan benda produk berdasarkan penguasaan metoda desain, cara produksi dan sistem distribusi, untuk menghasilkan produk yang dapat dipertanggungjawabkan terhadap kaidah desain, dampak pada lingkungan hidup, dan isu-isu sosial budaya <i>Able to design product systems and product objects based on mastery of design methods, production methods and distribution systems, to produce products that can be accounted for by design principles, impacts on the environment, and socio-cultural issues</i> |
| <input type="checkbox"/> | 3. Mampu membuat model untuk menyelesaikan masalah desain yang kompleks secara kreatif berdasarkan prinsip-prinsip desain dan rekayasa, dengan mempertimbangkan faktor ekonomi, keamanan, keselamatan, dan kelestarian lingkungan <i>Able to create models to solve complex design problems creatively based on design and engineering principles, taking into account economic, security, safety, and environmental sustainability factors</i> |
| <input type="checkbox"/> | 4. Melakukan kolaborasi dalam bidang kerja yang multi disiplin dengan memanfaatkan pengetahuan dan kemampuan desainnya <i>Collaborating in multi-disciplinary work areas by utilizing design knowledge and skills</i> |
| <input checked="" type="checkbox"/> | 5. Memahami konsep teoretis desain: 1. fungsi, 2. estetika, 3. ekonomi, 4. sosial dan, 5. teknologi secara umum <i>Understand the theoretical concepts of design: 1. function, 2. aesthetics, 3. economy, 4. social and, 5. technology in general</i> |
| <input checked="" type="checkbox"/> | 6. Keterampilan presentasi lisan, tulisan dan multimedia dan teknologi presentasi secara umum <i>Oral, written and multimedia presentation skills and general presentation technology</i> |
| <input type="checkbox"/> | 7. Keterampilan rekabentuk dan visualisasi 2 dan 3 matra secara mendalam <i>Design skills, 2 and 3 dimension visualization in depth</i> |
| <input type="checkbox"/> | 8. Prinsip dan metodologi desain secara mendalam <i>Design principles and methodologies</i> |
| <input type="checkbox"/> | 9. Konsep user centered design secara mendalam <i>The concept of user centered design in depth</i> |
| <input type="checkbox"/> | 10. Sejarah dan perkembangan desain produk secara mendalam <i>The history and development of product design in depth</i> |
| <input type="checkbox"/> | 11. Wawasan budaya dan perkembangan tren secara mendalam <i>Insight into culture and trend developments in depth</i> |
| <input checked="" type="checkbox"/> | 12. Prinsip dan isu terkini dalam teknologi manufaktur secara umum <i>Current principles and issues in manufacturing technology in general</i> |
| <input type="checkbox"/> | 13. Bisnis dan pemasaran, kewirausahaan, kode etik dan HAKI (Hak atas Kekayaan Intelektual) secara umum <i>Business and marketing, entrepreneurship, code of ethics and IPR (Intellectual Property Rights) in general</i> |
| <input type="checkbox"/> | 14. Konsep dan prinsip pelestarian lingkungan secara umum <i>Environmental conservation concepts and principles in general</i> |



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Course Form

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Course Type

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No description yet.

LO CLO Assessment & Evaluation Plan Lesson Plan

Course Learning Outcomes

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Curriculum: Kurikulum 2018 S-1 Desain Produk **Show**

| Code | Description of CLO | Mapping of CLO to LO | | | Weight of CLO |
|--------------|---|-------------------------------------|-------------------------------------|-------------------------------------|---------------|
| | | LO 5 | LO 6 | LO 12 | |
| CLO-1 | Mahasiswa mampu memahami sistem yang terkait dalam pengembangan produk <i>Students are able to understand systems related to product development</i> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 30% |
| CLO-2 | Mahasiswa mengerti konsep teoritis produk desain : (1) fungsi, (2) estetika, (3) ekonomi, (4) sosial, dan (5) teknologi secara umum dalam pengembangan produk <i>Students understand the theoretical concepts of product design: (1) function, (2) aesthetics, (3) economics, (4) social, and (5) technology in general in product development</i> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 15% |
| CLO-3 | Mahasiswa mampu menghasilkan konsep pengembangan produk dengan rekayasa sitem dan metode yang terkait guna meningkatkan nilai produk <i>Students are able to produce product development concepts with systems engineering and related methods to increase product value</i> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 20% |
| CLO-4 | Mahasiswa mengerti Prinsip dan isu terkini dalam teknologi manufaktur secara umum dalam peningkatan nilai produk <i>Students understand the principles and current issues in manufacturing technology in general in increasing product value</i> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 20% |
| CLO-5 | Mahasiswa mampu menjelaskan secara komprehensif kriteria dalam pengembangan produk, konseptual, dan manajemen desain secara umum <i>Students are able to explain comprehensively the criteria in product development, conceptual, and design management in general</i> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 15% |
| Total Weight | | 56% | 22% | 22% | 100% |

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No description yet.

LO CLO Assessment & Evaluation Plan Lesson Plan

Assessment & Evaluation Plan

| No. | Evaluation Plan | CLO-1 | CLO-2 | CLO-3 | CLO-4 | CLO-5 | Total Weight |
|--------|---|-------|-------|-------|-------|-------|--------------|
| 1 | Pemahaman Sistem Desain pada eksisting <i>Understanding of the existing Design Sys</i> Studi Kasus <i>Case Method</i> | 10% | 5% | 2% | 5% | 2% | 24% |
| 2 | Metode pengembangan desain pada produk <i>Product design development methods</i> Hasil proyek <i>Team-based Project</i> | 10% | 3% | 8% | 5% | 2% | 28% |
| 3 | evaluasi sistem pada produk desain <i>system design evaluation</i> Studi Kasus <i>Case Method</i> | 5% | 3% | 0% | 5% | 2% | 15% |
| 4 | presentasi dan dokumentasi <i>design system presentation and documenta</i> Hasil proyek <i>Team-based Project</i> | 5% | 4% | 10% | 5% | 9% | 33% |
| TOTAL | | 30% | 15% | 20% | 20% | 15% | 100% |
| Target | | 30% | 15% | 20% | 20% | 15% | 100% |

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No description yet.

LO CLO Assessment & Evaluation Plan Lesson Plan

Lesson Plan

| Weeknum | Course Material | Learning Method | | |
|---------|--|--------------------|--|--|
| 1 | Pengantar Desain dan Sistem Terkait <i>Introduction Design & System</i> | Metode SCL lainnya | | |
| 2 | Metode pengembangan produk <i>Product Development & System</i> | Team-based project | | |
| 3 | Sistem Modular <i>Modularity System</i> | Team-based project | | |
| 4 | Sistem Interchangeability <i>Interchangeability System</i> | Case method | | |
| 5 | Riset Modularity & Interchangeability <i>Modularity & Interchangeability Research</i> | Metode SCL lainnya | | |
| 6 | Rekayasa sistem mekanika dan operasional dasar <i>Basic mechanical and operational systems engineering</i> | Metode SCL lainnya | | |
| 7 | Rekayasa Sistem , modifikasi, custom dan opensourch <i>System Engineering, modification, custom and open source</i> | Case method | | |
| 8 | Evaluasi Tengah Semester <i>Mid-Semester Evaluation</i> | Metode SCL lainnya | | |
| 9 | Semiotika <i>semiotic</i> | Non SCL | | |
| 10 | Semantika Produk <i>Product Semantics</i> | Non SCL | | |
| 11 | Semantics Differential <i>Semantics Differential</i> | Case method | | |
| 12 | Metode Pengembangan Bentuk <i>Forming Development Systems</i> | Team-based project | | |
| 13 | Sustainable Sistem <i>Sustainable Systems</i> | Case method | | |
| 14 | Matrix Product Quality <i>Matrix Product Quality</i> | Case method | | |
| 15 | Studi kasus pengembangan produk <i>Product Development & Case Study</i> | Team-based project | | |
| 16 | Evaluasi Akhir Semester <i>Final Exam</i> | Case method | | |

Bahasa Indonesia

English

Choose method ▼

