



REGULATION OF THE RECTOR OF INSTITUT TEKNOLOGI SEPULUH NOPEMBER  
NUMBER 17 OF 2017

ON

GUIDELINES FOR CURRICULUM EVALUATION GUIDELINES AT INSTITUT  
TEKNOLOGI SEPULUH NOPEMBER

BY THE GRACE OF GOD ALMIGHTY  
RECTOR OF INSTITUT TEKNOLOGI SEPULUH NOPEMBER

- Considering
- a. in regard to ITS towards a higher education institution with an international reputation (world class university) in science and technology, it is deemed necessary to formulate a guideline for curriculum evaluation that supports this matter;
  - b. based on the considerations referred to in letter a, it is necessary to stipulate a Regulation of Rector on Guidelines for Curriculum Evaluation in the Institut Teknologi Sepuluh Nopember;
- Bearing in mind
1. Law No. 20 of 2003 on the National Education System (State Gazette of the Republic of Indonesia No. 78 of 2003, Supplement to the State Gazette of the Republic of Indonesia No. 4286);
  2. Law Number 12 of 2012 concerning Higher Education (State Gazette of the Republic of Indonesia of 2012 Number 158, Supplement to the State Gazette of the Republic of Indonesia Number 5336);
  3. Government Regulation No. 4 of 2014 on the implementation of Higher Education and Management of Higher Education (State Gazette of the Republic of Indonesia No. 16 of 2014, Supplement to the State Gazette of the Republic of Indonesia No. 5500);
  4. Government Regulation No. 83 of 2014 on Establishment of the Institut Teknologi Sepuluh Nopember as a Legal Entity State University (State Gazette of the Republic of Indonesia No. 304 of 2014);
  5. Government Regulation No. 54 of 2015 on the Statute of Institut Teknologi Sepuluh Nopember (State Gazette of the Republic of Indonesia No. 172 of 2015, Supplement to the State Gazette of the Republic of Indonesia Number 5723);
  6. Regulation of the Minister of Research, Technology and Education No. 44 of 2015 on National Education Standards (State Gazette of the Republic of Indonesia No. 1952 of 2015);

7. Decree of the Minister of Research, Technology and Higher Education Number 138/M/Kp/IV/2015 on Appointment of ITS Rector for the period of 2015-2019;
8. Regulation of the Academic Senate of Institut Teknologi Sepuluh Nopember No. 5 of 2016 on Policy Directions for Curriculum Development at Institut Teknologi Sepuluh Nopember;
9. Regulation of the Rector of Institut Teknologi Sepuluh Nopember No. 10 of 2016 on Organization and Work Procedure of Institut Teknologi Sepuluh Nopember;

**IT IS DECIDED**

It is determined **REGULATION OF THE RECTOR OF INSTITUT TEKNOLOGI SEPULUH NOPEMBER ON GUIDELINES FOR CURRICULUM EVALUATION GUIDELINES AT INSTITUT TEKNOLOGI SEPULUH NOPEMBER**

**CHAPTER 1  
GENERAL**

**Article 1**

In this regulation, what is meant by:

1. ITS is Institut Teknologi Sepuluh Nopember.
2. Rector is the rector of ITS.
3. Faculty is an academic implementing element which is a collection of supporting resources in the implementation and management of academic education, profession education, and/or vocational education in one scientific and technological discipline.
4. Departments are elements of the Faculty that support the implementation of academic activities in one type of academic education, vocational education, and/or profession education in one or several branches of science and technology.
5. Study Program is a unit of educational and learning activities that has a specific curriculum and learning methods in one type of academic education, vocational education, and/or profession education.
6. ITS curriculum is a set of plans and arrangements regarding graduate learning outcomes, study materials, processes, and assessments that are used as guidelines for implementing study programs at ITS.
7. Higher Education is a level of education after secondary education which includes diploma programs, undergraduate programs, graduate programs, doctoral programs, profession programs, and specialist programs organized by universities based on Indonesian culture.
8. Higher Education National Standards, hereinafter abbreviated as SN-DIKTI, are standard units covering the National Education Standards, plus the National Research Standards and the National Community Service Standards.
9. National Education Standards are the minimum criteria for learning at the tertiary level of higher education in tertiary institutions throughout the jurisdiction of the Republic of Indonesia.
10. Indonesian National Qualification Framework, hereinafter abbreviated as KKNI, is a competency qualification framework that can match, equalize, and integrate the education and work training

fields as well as work experience in order to provide job competency recognition in accordance with the job structure in various sectors.

11. Tertiary Education Institution is an educational unit that provides higher education.
12. Academic education program is an educational program directed primarily at mastering science and technology. Academic education programs consist of undergraduate programs, graduate programs, and doctoral programs.
13. Vocational education programs are educational programs that prepare students to have abilities in certain applied skills. This program is a diploma three, diploma four, applied master, and applied doctoral program.
14. Profession education is an educational program conducted after the undergraduate program that prepares students to have abilities in special skills and is organized together with professional organizations.
15. Learning is a process of interaction between students and lecturers and learning resources in a learning environment.
16. Semester Credit Units, hereinafter abbreviated as credits, are the amount of time for learning activities that are charged to students per week per semester in the learning process through various forms of learning or the amount of recognition for the success of students' efforts in participating in curricular activities in a study program.
17. Semester is a unit of time for the effective learning process for 16 (sixteen) weeks, including evaluation activities.
18. Graduate competency standards are the minimum criteria regarding the qualifications of graduate abilities which include attitudes, knowledge, and skills that are stated in the formulation of graduate learning outcomes.

## **CHAPTER II AIM AND GOAL**

### **Article 2**

- (1) The aim of the issuance of this Regulation of Rector is to provide guidelines in evaluating the 2018-2023 curriculum at ITS.
- (2) The goal of the issuance of this Regulation of Rector is to create a curriculum that can produce quality graduates and fulfill the vision, mission, values and goals of ITS and fulfill the SN-DIKTI.

## **CHAPTER III VISION, MISSION, VALUES, AND GOALS OF ITS**

### **Article 3**

ITS vision is to become a university with an international reputation in science and technology, especially those that support environmentally friendly marine and industry.

### **Article 4**

- (1) ITS mission is to contribute to the development of science and technology for the welfare of society through education, research, community service, and management activities based on information and communication technology.
- (2) ITS missions in education:

- a. organizing higher education based on information and communication technology with international quality curriculum, lecturers, and learning methods;
  - b. produce graduates who believe in and fear of God Almighty and have high morals and manners; and
  - c. equipping graduates with technology-based entrepreneurship knowledge.
- (3) ITS mission in the research field is to play an active role in the development of science and technology, especially in the fields of marine, environment and settlement, energy, as well as information and communication technology that is environmentally sound through international quality research activities.
- (4) ITS mission in the field of community service is to utilize all available resources to participate in solving problems faced by the community, industry, central government, and local governments by prioritizing information and communication technology facilities.
- (5) ITS missions in the field of management:
- a. ITS management is carried out by taking into account the principles of good governance that are supported by information and communication technology;
  - b. creating a conducive atmosphere and providing full support to students, lecturers, education staff to be able to develop themselves and make maximum contributions to society, industry, science and technology; and
  - c. developing networks to be able to synergize with other universities, industry, society, central government, and local governments in carrying out educational, research and community service activities.

#### **Article 5**

ITS values include:

- a. ethics and integrity: in the life of the community, state, and carrying out the profession, adhering to the norms and regulations that apply in society, state, and religion;
- b. creativity and innovation: looking for new ideas to produce innovations in carrying out their duties and roles better;
- c. excellence: striving for the maximum to achieve perfect results;
- d. synergy: working together to be able to make the most of the potential owned; and
- e. social togetherness and social responsibility: maintaining harmony and caring for the surrounding community.

#### **Article 6**

ITS objectives include:

- a. educating the nation's life, cultivating and strengthening a sense of national unity and oneness based on values, academic ethics, morals, faith and piety to God Almighty;
- b. educating, developing student abilities, and producing graduates who:
  - 1. have noble character;
  - 2. are excellent in science and technology;
  - 3. have a noble and independent personality;
  - 4. are professional and ethical;
  - 5. have high integrity and responsibility; and
  - 6. are able to develop themselves and compete at the national and international levels.
- c. providing high-quality contributions in the development of science and technology for the needs of national, regional, and international development;

- d. developing a network system with other universities, communities, industry, central government agencies, regional government agencies, and other institutions both at the national and international levels based on academic ethics, benefits, and mutual benefits;
- e. fostering a conducive academic climate that can foster appreciative, participative, and contributive attitudes from the academic community, and uphold academic values and morals in an effort to form a dynamic and harmonious campus society; and
- f. realizing ITS as a university which is a source of growth and education in the fields of science and technology in supporting industrialization, as well as environmentally friendly marine development.

## **CHAPTER IV ITS EDUCATION PROGRAM**

### **Article 7**

ITS organizes educational programs including:

- a. Vocational Education consists of:
  - 1. Diploma III Program;
  - 2. Applied Undergraduate Program;
  - 3. Applied Graduate Program; and
  - 4. Applied Doctoral Program.
- b. Academic education consists of:
  - 1. Undergraduate Program;
  - 2. Graduate Program; and
  - 3. Doctoral Program.
- c. Profession education consists of:
  - 1. Profession Program;
  - 2. Specialist program; and
  - 3. Sub-specialist program.

## **CHAPTER V STUDY LOAD**

### **Article 8**

- (1) Diploma III Program has a study load of 110 (one hundred and ten) credits which is regulated as follows:
  - a. the first academic year (semester 1 and 2) consists of 36 (thirty-six) credits; and
  - b. semester 3 to 6 consists of 74 (seventy-four) credits.
- (2) Applied Undergraduate Program has a study load of 144 (one hundred and forty-four) credits, in which the first academic year (semester 1 and 2) consists of 36 (thirty-six) credits.
- (3) Applied Graduate Program has a study load of 36 (thirty-six) credits after completing the Applied Undergraduate Program.
- (4) Applied Doctoral Program has a study load of 42 (forty-two) credits after completing the Applied Graduate Program, Graduate Program, or Specialist Programs.
- (5) Undergraduate Program has a study load of 144 (one hundred and forty-four) credits which is regulated as follows:
  - a. the first academic year (semester 1 and 2) consists of 36 (thirty-six) credits; and

- b. semester 3 to semester 8 consists of 108 (one hundred and eight) credits with an average of 18 (eighteen) credits to 20 (twenty) credits per semester, except for semester 8.
- (6) Graduate Program has a study load of 36 (thirty-six) credits after completing the Undergraduate Program or Applied Undergraduate Program.
- (7) Doctoral Program has a study load of 42 (forty-two) credits after completing the Graduate Program, Applied Graduate Program, or Specialist Program.
- (8) Profession Program has a study load of 24 (twenty-four) credits after completing the Undergraduate Program or Applied Undergraduate Program.
- (9) Specialist Program has a study load of 36 (thirty-six) credits after completing the Undergraduate Program or Applied Undergraduate Program.
- (10) Sub-specialist program has a study load of 42 (forty-two) credits after completing the Graduate Program, the Graduate Program of Administration, or the Specialist Program.

## **CHAPTER VI LIMITATION OF COURSES AND CREDITS**

### **Article 9**

- (1) The number of courses and credits in the Diploma III Program and Applied Undergraduate Program is determined as follows:
  - a. allocation of the number of courses in each semester is a maximum of 7 (seven) courses for semester 1 to semester 4 and a maximum of 6 (six) courses for the following semesters;
  - b. the number of credits in each semester is at least 17 (seventeen) credits and at most 20 (twenty) credits, except for the last semester;
  - c. the number of credits for semester 1 and semester 2 is 36 (thirty-six) credits;
  - d. each course consists of at least 2 credits, except for the final project between 4 (four) to 8 (eight) credits; and
  - e. practicum, assignments, studios, etc. are learning methods (instead of the name of the course).
- (2) The number of courses and credits in the Applied Graduate Program is determined as follows:
  - a. allocation of the number of courses in each semester is a maximum of 4 (four) courses;
  - b. the number of credits for the Applied Graduate Program in each semester is an average of 12 (twelve) credits;
  - c. each subject consists of at least 2 (two) credits; and
  - d. the number of credits of a thesis or case study is 8 (eight) to 12 (twelve) credits.
- (3) The number of courses and credits in the Certified Doctoral Program, namely the number of credits for the dissertation (including proposals) is 28 (twenty-eight) credits.
- (4) The number of courses and credits in the Undergraduate Program is determined as follows:
  - a. allocation of the number of courses in each semester is no more than 7 (seven) for semester 1 and 2, and 6 (six) courses for the following semesters;
  - b. the average number of credits in each semester is 18 (eighteen) to 20 (twenty) credits per semester, except semester 8;
  - c. the number of credits for semester 1 and semester 2 is 36 (thirty-six) credits; and
  - d. each subject consists of at least 2 (two) credits, except for the final project which is between 4 (four) to 8 (eight) credits.
- (5) The number of courses and credits in the Graduate Program is determined as follows:

- a. allocation of the number of courses in each semester is a maximum of 4 (four) courses;
  - b. the average number of credits in each semester is 12 (twelve) credits;
  - c. each subject consists of at least 2 (two) credits; and
  - d. for the Graduate Program, the number of credits of thesis/case study is 8 (eight) to 12 (twelve) credits.
- (6) The number of courses and credits in the Doctoral Program, namely the number of credits for the dissertation (including proposals) is 28 (twenty-eight) credits.
  - (7) The number of courses and credits in the Profession Program, namely the study load consists of 2 (two) semesters including internships and a maximum of 12 (twelve) credits in each semester.

## **CHAPTER VII LIMITATION OF COURSES**

### **Article 10**

Limitation of courses for Diploma III Program, Applied Undergraduate Program, and Undergraduate Program consists of:

- a. 8 (eight) credits of national courses, consisting of:
  1. Religion of 2 (two) credits;
  2. Pancasila of 2 (two) credits;
  3. Citizenship of 2 (two) credits; and
  4. Indonesian Language of 2 (two) credits.
- b. 7 (seven) credits of ITS characteristic courses, consisting of:
  1. English of 2 (two) credits;
  2. Technopreneur of 2 (two) credits; and
  4. Technology Insights and Applications of 3 (three) credits.
- c. elective courses for the Undergraduate Program are maximum of 15 (fifteen) credits;
- d. enrichment courses are 3 (three) credits up to 6 (six) credits taken outside the Study Program.

## **CHAPTER VIII CODE OF COURSES**

### **Article 11**

- (1) Each course is marked with a course code.
- (2) Course code as referred to in paragraph (1) includes:
  - a. F means Faculty;
  - b. D means Department;
  - c. TT means the year the curriculum comes into effect;
  - d. W means Study Program written with the following numbers:
    - 0 = Diploma III
    - 1 = Applied Undergraduate
    - 2 = Applied Graduate
    - 3 = Applied Doctoral
    - 4 = Undergraduate
    - 5 = Graduate
    - 6 = Doctoral

- 7 = Profession
- 8 = Specialist
- 9 = Sub-specialist
- e. S means Semester; and
- f. NN means Course Number (01 to 99).

## **Article 12**

- (1) The Course Code at the Institute is UG.
- (2) The Course Codes at the Faculty are determined as follows:
  - a. The Faculty of Natural Sciences (FIA):
    1. SW is a course code for the FIA compulsory courses;
    2. SF is a course code for the Department of Physics;
    3. SK is a course code for the Department of Chemistry; and
    4. SB is a course code for the Department of Biology.
  - b. The Faculty of Industrial Technology (FTI):
    1. TW is a code for the FTI compulsory courses;
    2. TM is a course code for the Department of Mechanical Engineering;
    3. TK is a course code for the Department of Chemical Engineering;
    4. TF is a course code for the Department of Physics Engineering;
    5. TI is a course code for the Department of Industrial Engineering; and
    6. TL is the course code for the Department of Materials Engineering.
  - c. The Faculty of Electrical Technology (FTE):
    1. EW is a course code for the compulsory FTE course;
    2. EE is a course code for the Department of Electrical Engineering;
    3. EC is a course code for the Department of Computer Engineering; and
    4. EB is a course code for the Department of Biomedical Engineering.
  - d. The Faculty of Civil, Environmental and Geo Engineering (FTSLK):
    1. RW is a course code for the compulsory FTSLK courses;
    2. RC is a course code for the Department of Civil Engineering;
    3. RE is a course code for the Department of Environmental Engineering;
    4. RM is a course code for the Department of Geomatics Engineering; and
    5. RF is a course code for the Department of Geophysical Engineering.
  - e. The Faculty of Architecture, Design and Planning (FADP):
    1. OW is a course code for the compulsory FADP courses;
    2. DA is a course code for the Department of Architecture;
    3. DK is a course code for the Department of Regional and Urban Planning;
    4. DP is a course code for the Department of Industrial Product Design; and
    5. DI is a course code for the Department of Interior Design.
  - f. The Faculty of Marine Technology (FTK):
    1. MW is a course code for compulsory FTK courses;
    2. MN is a course code for the Department of Shipping Engineering;
    3. ME is a course code for the Department of Shipping System Engineering;
    4. MO is a course code for the Department of Marine Engineering; and
    5. MS is a course code for the Department of Marine Transportation Engineering.
  - g. The Faculty of Mathematics, Computing and Data Science (FMKSD):
    1. KW is a course code for FMKSD compulsory courses;



2. KM is a course code for the Department of Mathematics;
  3. KS is a course code for the Department of Statistics; and
  4. KA is a course code for the Department of Acturial.
- h. The Faculty of Information and Communication Technology (FTIK):
1. IW is a course code for FTIK compulsory courses;
  2. IF is a course code for the Department of Informatics;
  3. IS is a course code for the Department of Information Systems; and
  4. IT is a course code for the Department of Information Technology.
- i. The Faculty of Business and Technology Management (FBMT):
1. BW is a course code for the FBMT compulsory course;
  2. BB is a course code for the Department of Business Management;
  3. BM is a course code for the Department of Technology Management; and
  4. BS is a course code for the Department of Development Studies.
- j. The Vocational Faculty (FV):
1. VW is a course code for the FV compulsory courses;
  2. VC is a course code for the Department of Civil Infrastructure Engineering;
  3. VM is a course code for the Department of Industrial Mechanical Engineering;
  4. VE is a course code for the Department of Electrical Automation Engineering;
  5. VK is a course code for the Department of Industrial Chemical Engineering;
  6. VI is a course code for the Department of Instrumentation Engineering; and
  7. VS is a course code for the Department of Business Statistics.

## **CHAPTER IX**

### **CATEGORIES OF MATHEMATICS AND BASIC SCIENCE**

#### **Article 13**

- (1) The Undergraduate and Applied Undergraduate Programs at ITS have 3 (three) different categories for Mathematics and Basic Science courses as follows:
- a. Category 1 consists of:
    1. Mathematics 2 times;
    2. Physics 2 times; and
    3. Chemistry 1 time.
  - b. Category 2 consists of:
    1. Mathematics 1 time; and
    2. Physics 1 time.
  - c. Category 3 consists of Special Mathematics 1 time.
- (2) The categorization as intended in paragraph (1) is as follows:
- a. Category 1 consists of:
    1. Faculty of Natural Sciences (FIA);
    2. Faculty of Industrial Technology (FTI);
    3. Faculty of Civil, Environmental and Geo Engineering (FTSLK);
    4. Faculty of Marine Technology (FTK);
    5. Faculty of Information and Communication Technology (FTIK);
    6. Faculty of Mathematics, Computing and Data Science (FMKSD);
    7. Faculty of Electrical Technology (FTE); and
    8. Vocational Faculty (FY).

- b. Category 2 is the Faculty of Architecture, Design and Planning (FADP); and
  - c. Category 3 is the Faculty of Business and Technology Management (FBMT).
- (3) Detailed courses of Category 1 in the first year consist of:
- a. Semester 1:
    1. Mathematics of 3 (three) credits;
    2. Physics of 4 (four) credits;
    3. Chemistry of 3 (three) credits;
    4. Pancasila of 2 (two) credits; and
    5. Indonesian Language of 2 (two) credits.
  - b. Semester 2:
    1. Mathematics of 3 (three) credits;
    2. Physics of 3 (three) credits;
    3. Religion of 2 (two) credits;
    4. Citizenship of 2 (two) credits; and
    5. English of 2 (two) credits.
  - c. The courses as referred to in paragraph (3) letter a and letter b can be implemented in either Semester 1 or Semester 2.
- (4) Detailed courses of Category 2 in the first year consist of:
- a. Semester 1:
    1. Mathematics of 3 (three) credits;
    2. Physics of 3 (three) credits;
    3. Pancasila of 2 (two) credits; and
    4. Indonesian Language of 2 (two) credits.
  - b. Semester 2:
    1. Religion of 2 (two) credits;
    2. Citizenship of 2 (two) credits; and
    3. English of 2 (two) credits.
  - c. The courses as referred to in paragraph (4) letter a and letter b can be implemented in either Semester 1 or Semester 2.
- (5) Detailed courses of Category 3 in the first year consist of:
- a. Semester 1:
    1. Mathematics of 2 (two) credits;
    2. Pancasila of 2 (two) credits; and
    3. Indonesian Language of 2 (two) credits.
  - b. Semester 2:
    1. Religion of 2 (two) credits;
    2. Citizenship of 2 (two) credits; and
    3. English of 2 (two) credits.
  - c. The courses as referred to in paragraph (5) letter a and letter b can be implemented in either Semester 1 or Semester 2.

#### **Article 14**

- (1) All Diploma III Programs only have 1 (one) category for Mathematics and Basic Science courses as follows:
- a. Mathematics 1 time;
  - b. Physics 1 time; and

- c. Chemistry 1 time.
- (2) Detailed courses of Mathematics and Basic Science as referred to in paragraph (1) are as follows:
  - a. Mathematics of 3 (three) credits;
  - b. Physics of 3 (three) credits; and
  - c. Chemistry of 3 (three) credits.
- (3) Detailed courses of Mathematics and Basic Science in the first year consist of:
  - a. Semester 1:
    - 1. Mathematics of 3 (three) credits;
    - 2. Physics of 3 (three) credits;
    - 3. Pancasila of 2 (two) credits; and
    - 4. Indonesian Language of 2 (two) credits.
  - b. Semester 2:
    - 1. Religion of 2 (two) credits;
    - 2. Citizenship of 2 (two) credits;
    - 3. Chemistry of 2 (two) credits; and
    - 4. English of 2 (two) credits.
  - c. The courses as referred to in paragraph (3) letter a and letter b can be implemented in either Semester 1 or Semester 2.

## **CHAPTER X**

### **DEFINITION OF 1 (ONE) CREDIT IN THE LEARNING PROCESS**

#### **Article 15**

- (1) 1 (one) credit in the learning process in the form of lectures, responses, or tutorials is interpreted as the implementation of activities as follows:
  - a. face-to-face activities of 50 (fifty) minutes per week per semester;
  - b. structured assignment activities of 60 (sixty) minutes per week per semester; and
  - c. independent activity of 60 (sixty) minutes per week per semester.
- (2) 1 (one) credit in the learning process in the form of seminars or other similar forms is interpreted as the implementation of the following activities:
  - a. face-to-face activities of 100 (one hundred) minutes per week per semester; and
  - b. independent activities of 70 (seventy) minutes per week per semester.
- (3) 1 (one) credit in the learning process in the form of practicum, studio practice, workshop practice, field practice, research, community service, and/or other similar learning processes is interpreted as the implementation of activities of 170 (one hundred and seventy) minutes per weeks per semester.

#### **Article 16**

Every graduate of academic, vocational, and profession education programs must have the attitude and general skills of ITS as listed in the appendix which is an integral part of this regulation.

## **CHAPTER XI**

### **CLOSING**

#### **Article 17**

This Regulation of the Rector comes into force on the date of stipulation.

Stipulated in Surabaya  
on May 10<sup>th</sup>, 2017  
Rector of ITS Surabaya,

*(signed and stamped)*

Prof. Ir. Joni Hermana M.Sc.ES., Ph.D.  
EIN 196006181988031002

## **APPENDIX**

# **REGULATION OF THE RECTOR OF INSTITUT TEKNOLOGI SEPULUH NOPEMBER ON GUIDELINES FOR CURRICULUM EVALUATION GUIDELINES AT INSTITUT TEKNOLOGI SEPULUH NOPEMBER**

## **GENERAL ATTITUDES AND SKILLS OF ITS**

### **A. ATTITUDE FORMULATION**

Every graduate of academic, vocational, and profession education programs must have the attitude and general skills as follows:

- a. being righteous to God Almighty and being able to show a religious attitude;
- b. upholding the values of humanity in carrying out duties based on religion, morals, and ethics;
- c. contributing to improving the quality of life in society, nation, and country, and the progress of civilization based on Pancasila;
- d. acting as citizens who are proud and love the country, having nationalism and a sense of responsibility to the state and nation;
- e. showing respect to the diversity of cultures, views, religions and beliefs, as well as the original opinions or findings of others;
- f. working together and having social sensitivity and concern for the community and environment;
- g. obeying the law and discipline in social and state lives;
- h. internalizing academic values, norms, and ethics;
- i. showing an attitude of responsibility for work in their field of expertise independently;
- j. internalizing the spirit of independence, struggle, and entrepreneurship;
- k. striving to the maximum to achieve the perfect result; and
- l. working together to be able to make the most of its potential.

### **B. GENERAL SKILL FORMULATION**

#### **DIPLOMA PROGRAM**

Every graduate of Diploma III Program must have general skills of being able to:

- a. complete wide scope works and analyze data with a variety of suitable methods, both those have and have not been standardized;
- b. demonstrate quality and measurable performance;
- c. solve work problems with the nature and context in accordance with the field of applied expertise based on logical and innovative thinking and be responsible for the results independently;
- d. compile reports on results and work processes accurately and validly and communicate them effectively to other parties in need;
- e. work together, communicate, and be innovative in their work;
- f. be responsible for the achievement of group work and supervise and evaluate the completion of work assigned to workers under their responsibility;
- g. carry out the self-evaluation process of the work group under their responsibility, and to manage the development of work competencies independently;

- h. document, store, secure, and recover data to ensure validity and prevent plagiarism;
- i. develop themselves and compete at the national and international levels;
- j. implement the principle of sustainability in developing knowledge;
- k. implement information and communication technology in the context of their work; and
- l. apply entrepreneurship and understand technology-based entrepreneurship.

### **APPLIED UNDERGRADUATE PROGRAM**

Every graduate of Applied Undergraduate Program must have general skills of being able to:

- a. apply logical, critical, innovative, quality, and measurable thinking in doing specific work in their field of expertise and in accordance with work competency standards in the relevant field;
- b. demonstrate independent, quality, and measurable performance;
- c. study cases of application of science and technology that pays attention to and applies the values of humanity in accordance with their areas of expertise in order to produce prototypes, standard procedures, designs or works of art, compile the results of their studies in the form of working papers, design specifications or art essays, and upload them on the website of the institute;
- d. compile the results of the study in the form of working papers, design specifications, or art essays and upload them on the website of the institute;
- e. make appropriate decisions based on standard procedures, design specifications, safety and security requirements in supervising and evaluating their work;
- f. maintain and develop a network of cooperation and cooperation results inside and outside the institution;
- g. be responsible for the achievement of group work results and to supervise and evaluate the completion of work assigned to workers under their responsibility;
- h. carry out the self-evaluation process of the existing work group under his responsibility, and manage learning independently;
- i. document, store, secure, and recover data to ensure validity and prevent plagiarism;
- j. develop themselves and compete at the national and international levels;
- k. implement the principle of sustainability in developing knowledge;
- l. implement information and communication technology in the context of the implementation of their work; and
- m. apply entrepreneurship and understand technology-based entrepreneurship.

### **APPLIED GRADUATE PROGRAM**

Every graduate of Applied Graduate Program must have general skills of being able to:

- a. develop logical, critical, systematic and creative thinking in the application of technology that pays attention to and applies the values of the humanities according to their areas of expertise in order to produce prototypes, design works, artistic products, or additional valuable technological innovations, compile scientific conceptions or works based on rules, procedures, and scientific ethics in the form of a thesis or other equivalent, and uploaded on the college website, as well as the work presented or exhibited;

- b. carry out academic validation or studies according to their field of expertise in solving problems in the relevant community or industry through the development of their knowledge and expertise;
- c. formulate ideas, thoughts, and technical arguments responsibly and based on academic ethics, and communicate them through the media to the academic community and the wider community;
- d. identify the scientific field that becomes the object of their research and position it into a problem-solving scheme that is more comprehensive and is inter-disciplinary or multi-disciplinary in nature;
- e. make decisions in the context of solving problems in the application of technology by paying attention to and applying the values of the humanities based on experimental studies of information and data;
- f. manage, develop and improve the quality of cooperation both in the institution and other institutions, by prioritizing the quality of results and the timeliness of completing work;
- g. increase learning capacity independently;
- h. document, store, secure, and recover prototype data, design work or art products in order to ensure validity and prevent plagiarism;
- i. develop themselves and compete at the national and international levels;
- j. implement the principle of sustainability in developing knowledge; and
- k. implement information and communication technology in the context of their work.

### **APPLIED DOCTORAL PROGRAM**

Every graduate of Applied Doctoral Program must have general skills of being able to:

- a. find, create, and make new contributions to the development and practice of science and/or technology that takes into account and applies the value of the humanities in their fields of expertise, by producing value-added design, prototypes, or technological innovations or can be used for problem solving based on logical, critical, creative, and wise thinking;
- b. compile scientific conception and study results of their work based on scientific principles, procedures and ethics in the form of a dissertation and papers that have been published in accredited national journals or accepted in international journals or works presented or exhibited in international forums;
- c. choose research that is appropriate, current, advanced, and providing benefits to mankind by including economic aspects through an interdisciplinary, multidisciplinary, or transdisciplinary approach, in order to produce solutions to technological problems in relevant industries or art;
- d. develop technology or art development strategies with an interdisciplinary, multidisciplinary, or transdisciplinary approach, based on a study of the main objectives of research and its constellation on broader targets;
- e. compile scientific, technological or artistic arguments and solutions based on a critical view of facts, concepts, principles, or theories that can be scientifically accountable and academic ethics, and communicate them through the mass media or directly to the public;
- f. show academic leadership in the management, development, and guidance of resources and organizations under their responsibility;
- g. manage, store, audit, secure, and recover data and information on research results that are under their responsibility;

- h. develop and maintain collegial and collegial relationships within their own environment or through collaborative networks with research communities outside the institution;
- i. develop themselves and compete at the national and international levels;
- j. implement the principle of sustainability in developing knowledge; and
- k. implement information and communication technology in the context of their work.

## **UNDERGRADUATE PROGRAM**

Every graduate of Undergraduate Program must have general skills of being able to:

- a. 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 the values of the humanities in accordance with their field of expertise;
- b. demonstrate independent, quality, and measurable performance;
- c. study the implications of the development or implementation of technological science that pays attention to and applies humanities values according to their expertise based on scientific principles, procedures and ethics in order to produce solutions, ideas, designs or art criticism, compile scientific descriptions of the results of their studies in the form of a thesis or final project report, and upload it on the website of the institute;
- d. compile a scientific description of the results of the study in the form of a thesis or final project report, and upload it on the website of the institute;
- e. make decisions appropriately in the context of problem solving in their area of expertise, based on the results of information and data analysis;
- f. maintain and develop networks with mentors, colleagues, colleagues both inside and outside the institution;
- g. be responsible for the achievement of group work results and to supervise and evaluate the completion of work assigned to workers under their responsibility;
- h. carry out the self-evaluation process of the work group under their responsibility, and manage learning independently;
- i. document, store, secure, and recover data to ensure validity and prevent plagiarism;
- j. develop themselves and compete at the national and international levels;
- k. implement the principle of sustainability in developing knowledge;
- l. implement information and communication technology in the context of their work; and
- m. apply entrepreneurship and understand technology-based entrepreneurship.

## **GRADUATE PROGRAM**

Every graduate of Graduate Program must have general skills of being able to:

- a. develop logical, critical, systematic, and creative thinking through scientific research, creation of designs or works of art in the field of science and technology that pay attention to and apply the values of the humanities in accordance with their fields of expertise, compile scientific conceptions and study results based on rules, procedures, and scientific ethics in the form of a thesis or other equivalent form, and upload it on the website of the institute, as well as papers that have been published in accredited scientific journals or are accepted in international journals;



- b. carry out academic validation or studies according to their field of expertise in solving problems in the relevant community or industry through the development of their knowledge and expertise;
- c. compile ideas, thoughts, and scientific arguments responsibly and based on academic ethics, and communicate them through the media to the academic community and the wider community;
- d. identify the scientific field that is the object of their research and position it into a research map developed through an interdisciplinary or multidisciplinary approach;
- e. make decisions in the context of solving problems in the development of science and technology that pay attention to and apply the values of humanities based on analytical or experimental studies of data information;
- f. manage, develop, and maintain networks with colleagues within the wider research institute and community;
- g. increase learning capacity independently;
- h. document, store, secure, and recover research data in order to ensure validity and prevent plagiarism;
- i. develop themselves and compete at the national and international levels;
- j. implement the principle of sustainability in developing knowledge; and
- k. implement information and communication technology in the context of their work.

## **DOCTORAL PROGRAM**

Every graduate of Doctoral Program must have general skills of being able to:

- a. find or develop new scientific theories/conceptions/ideas, contribute to the development and practice of science and/or technology that takes into account and applies the values of the humanities in their fields of expertise, by producing scientific research based on scientific methodology, logical, critical, systematic, and creative thinking;
- b. compile interdisciplinary, multidisciplinary or transdisciplinary research, including theoretical and/or experimental studies in the fields of science, technology, art and innovation as outlined in the form of a dissertation, and papers that have been published in reputable international journals;
- c. choose research that is appropriate, current, most advanced, and providing benefits to mankind through an interdisciplinary, multidisciplinary or transdisciplinary approach, in order to develop and/or produce problem solving in the fields of science, technology, art, or society, based on the results of studies on availability of internal and external resources;
- d. develop an interdisciplinary, multidisciplinary, or transdisciplinary research roadmap, based on a study of the main objectives of research and its constellation on broader targets;
- e. compile scientific, technological or artistic arguments and solutions based on a critical view of facts, concepts, principles, or theories that can be scientifically accountable and academic ethics, and communicate them through the mass media or directly to the public;
- f. show academic leadership in the management, development and guidance of resources and organizations under their responsibility;
- g. manage, store, audit, secure, and recover data and information on research results that are under their responsibility;

- h. develop and maintain collegial and collegial relationships within their own environment or through collaborative networks with research communities outside the institution;
- i. develop themselves and compete at the national and international levels;
- j. implement the principle of sustainability in developing knowledge; and
- k. implement information and communication technology in the context of their work.

### **PROFESSION PROGRAM**

Every graduate of Profession Program must have general skills of being able to:

- a. work in the main field of expertise for a specific type of work and have a work competence that is at least equivalent to the standard of professional work competence;
- b. make independent decisions in carrying out their professional work based on logical, critical, systematic, and creative thinking;
- c. communicate ideas/arguments or innovative work that are beneficial for professional and entrepreneurial development, which can be accounted for scientifically and professional ethics, to the community, especially the professional community;
- d. critically evaluate the work results and decisions made in carrying out the work by himself and by colleagues;
- e. improve professional expertise in a special field through training and work experience;
- f. increase the quality of resources for the development of organizational strategic programs;
- g. lead a work team to solve problems in their professional field;
- h. cooperate with other professions of the same level in solving work problems in their professional fields;
- i. develop and maintain networks with the professional community and its clients;
- j. be responsible for work in their professional field in accordance with the professional code of ethics;
- k. increase learning capacity independently;
- l. contribute to the evaluation or development of national policies in order to improve the quality of professional education or to develop national policies in their professional fields;
- m. document, store, audit, secure, and recover data and information for the purpose of developing the results of their professional work;
- n. develop themselves and compete at the national and international levels;
- o. implement the principles of sustainability in developing knowledge; and
- p. implement information and communication technology in the context of their work.

### **SPECIALIST PROGRAM**

Every graduate of Specialist Program must have general skills of being able to:

- a. work in the main field of expertise/profession for specific and complex types of work and have work competencies that are at least equivalent to the professional competence standards that apply nationally/internationally;
- b. make independent decisions in carrying out their professional work based on logical, critical, systematic, creative, comprehensive thinking;
- c. communicate the results of studies, criticisms, appreciations, arguments, or innovative works that are useful for professional development and human benefit, which can be accounted for scientifically and professional ethics, to the general public through various forms of media;

- d. critically evaluate work results and decisions made in carrying out professional work either by himself, colleagues, or the institutional system;
- e. improve his professional expertise in a specific field through training and work experience by considering the latest in his professional field at the national, regional and international levels;
- f. increase the quality of resources for the development of organizational strategic programs;
- g. lead a work team to solve problems both in their professional field and problems that are wider than their professional field;
- h. cooperate with other professions in the same level or not in solving complex work problems related to their professional fields;
- i. develop and maintain networks with professional communities and their clients;
- j. be responsible for work in their professional field in accordance with the professional code of ethics;
- k. increase the learning capacity independently and the team under their responsibility;
- l. contribute to the evaluation or development of national policies in order to improve the quality of professional education or to develop national policies in their professional fields;
- m. document, store, audit, secure, and recover data and information for the purpose of developing the results of their professional work;
- n. develop themselves and compete at the national and international levels;
- o. implement the principle of sustainability in developing knowledge; and
- p. implement information and communication technology in the context of their work.

### **SUB-SPECIALIST PROGRAM**

Every graduate of Sub-specialist Program must have general skills of being able to:

- a. work in the main field of expertise/profession for specific and complex types of work and have work competencies that are equivalent to professional competence standards that apply internationally;
- b. make independent decisions in carrying out their professional work based on logical, critical, systematic, creative, comprehensive, and wise thinking;
- c. communicate the results of studies, criticisms, appreciations, arguments, or innovative works that are useful for professional development and human benefit, which can be accounted for scientifically and professional ethics, to the general public through various forms of media;
- d. critically evaluate work results and decisions made in carrying out professional work either by himself, colleagues, or the institutional system;
- e. increase professional expertise in a specific field through training and work experience by taking into account the latest in his professional field at the national, regional and international levels;
- f. increase the quality of resources for the development of organizational strategic programs;
- g. lead a work team to solve problems both in their professional field, as well as problems that are wider than their professional field;
- h. work together with other professions of the same level or not in solving complex work problems related to their professional field;
- i. develop and maintain networks with professional communities and their clients;

- j. be responsible for work in their professional field in accordance with the professional code of ethics;
- k. increase the learning capacity of themselves and the team under their responsibility;
- l. contribute to the evaluation or development of national policies in order to improve the quality of professional education or to develop national policies in their professional fields;
- m. document, store, audit, secure, and recover data and information for the purpose of developing the results of their professional work;
- n. develop themselves and compete at the national and international levels;
- o. implement the principle of sustainability in developing knowledge; and
- p. implement information and communication technology in the context of their work.