Guide and its Details

KMUTT Curriculum Blueprint Version 3.0

For the revised curriculum in the 2026 academic year.

Clarification

- The details of this document are only examples prepared by the Office of Education Development and Services. The curriculum can be documented as appropriate. However, it must contain a list of topics at least as specified by the Office of the Permanent Secretary (OPS), MHESI and KMUTT. The presentation format depends on each program.
- After downloading this KMUTT Curriculum Blueprint form for use, please DELETE the explanatory text frame before submitting the program to the university.
- KMUTT Curriculum Blueprint version 3.0 has been updated according to the conditions by the Office of the Permanent Secretary of the Ministry of Higher Education, Science, Research and Innovation and is intended for the curriculum will be revised starting from the academic year 2026 onwards. Please do not copy the blueprint from other previous revised curricula.

Degree Title ..... Program in .....

(Multidisciplinary Program) or (Interdisciplinary Program)

Choose to use only 1 text, only for the courses with the above characteristics as specified in Part 2.

(International Programs) or (English Courses) or (Bilingual Programs)

Choose to use only 1 message that the faculty proposes to the university (if any).

(5-year program)

Only courses with 5-year teaching and learning management

New Curriculum B.E. ..... or Revised Curriculum B.E. .....

Select only 1 message and indicate the year the course was introduced.

Department/Division.....

Faculty or School.....

King Mongkut's University of Technology Thonburi

Table of Contents

Course Details (continued)

Part 1 Executive Summary

Explanation

This section will be a summary of the whole program. Maximum page limit: 5 pages.

- In the case of a new program, summarize the reason to open this program, the main concept (product concept), the target group and the competitive strategy.
- In the case of a revised program, summarize the reason to revise this program, the main ideas and lessons learned from the existing program and list ALL CHANGES in this revised version compared to the former one.

1. The Rationale for Opening the New Program or Revising the Program

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2. The Product Concept of the New Program or the Main Concept of the Revised Program

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3. Issues changed from the former version of the program can be summarized as follows:

3.1) Revise the program learning outcomes (PLOs) corresponding to align with the needs of the key stakeholders.

Program Learning Outcomes of The Former Version	Program Learning Outcomes of The Revised Version
PLO1: ..... Sub-PLO1A: ..... Sub-PLO1B: PLO2:	PLO1: ..... Sub-PLO1A: ..... Sub-PLO1B: ..... PLO2: .....

The Program Learning Outcome (PLOs) are revised due to

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3.2) Improve the Program structure as following:

[Take the table in section 2.3.2.1) Comparison the Program structure with the Notification of the Commission on Higher Education Standards (CHES) on B.E.2565 (Diploma / Bachelor's / Graduate Program)

Example Category	Number of Credits				Difference in Number of Credits
	Higher Ed. Criteria	professional council criteria or others. Specify ..... (if any)*	Former Program B.E. 25....	Revised Program B.E. 25...	
1. General Education	≥ 24		31	27	- 4
2. Specific Courses 2.1 Subject Group ..... 2.2 Subject Group ..... 2.3 Subject Group..... 2.4 Subject Group.....	≥ 72 (4 years) ≥ 90 (5 years) (Choose one)		.....	.....	+ 3
3. Free Elective	≥ 6				
Total number of credits	≥ 120 (4 years) ≥ 150 (5 years) (Choose one)				

Explain the reasons of the changes.

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For example,

Adjust courses in the program *(Indicate course code, course name, credits and credit hours as examples below and explain supporting reasons)*

- *Add (Number) specific courses in the science and mathematics*
- *Reduce (Number) specific courses in the compulsory engineering subject group.*
- *Increase WiL Plan*

3.3) The curriculum establishes the Learning Pathway named ..... that leads to career/competency.....

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3.4) Other issues

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For example ,

3.4) Improve the teaching and learning approaches

3.5) Increase / decrease the student admission plan

3.6) Increase the tuition fee or other specific fees

Etc.

Part 2 Program Design and Concept

2.1) Rationale for Opening or Revising the Program and Processes Involved in Defining the Concept of the Program.

Explanation

In topic 2.1 (from 2.1.1 to 2.1.3), both the external factors; for example, skill mapping based on domestic demand, the manufacturing/industrial sectors/ employers (labor market), current students, and other key stakeholders, market supply and demand, competitors, and the internal factors are analyzed and considered as important supporting information for designing the program.

The result of this analysis will be linked in defining the concept and the details of the program.

2.1.1) Stakeholder Requirements Gathering Processes and the Conversion of Voice of Customer (VOC) to Voice of Process (VOP) for Opening or Revising the Program.

Explanation

In topic 2.1.1 (from 2.1.1.1 to 2.1.1.3):

- The program must describe the stakeholder selection process and its criteria, including the appropriateness of the selected stakeholders.
- The program must demonstrate the stakeholder requirements gathering processes, selection of key stakeholder groups and representatives of those groups, including tools, methods, and time periods of gathering data and then analyze all results to get VOC (Voice of Customer) and show the process of converting VOC to VOP (Voice of Process).
- The program must consider the policies, vision, and mission of KMUTT and those of the relevant faculty/department as one of stakeholder requirements and links them into the program.

2.1.1.1) Exploration of Labor Market Needs

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2.1.1.2) Exploration of Current Students Needs

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2.1.1.3) Exploration of the Needs of other Stakeholder Groups; for example, Prospective Students, Alumni, Academic Staff, Supporting Staff, Parents, etc.

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After gathering all the information above, key stakeholder requirements can be summarized as shown in Table .....

Explanation The program must summarize gathering processes of all key stakeholder requirements as in the table shown below.

Key Stakeholders	Time period	Methods	Survey Issues	Results as Requirements
The University (University Council)		Gather from the university documents, - university's strategic plan - KMUTT student QF, etc.	- KMUTT students/ graduates attributes - Vision, mission and policy	- KMUTT graduates require leadership skills, communication capability, and good presentation skills
Academic Staff (Instructors, Academic advisors, University supervisors for internship, Mentors/ Trainers in Company or Factory)	Before, during, and after each semester	Meeting / Seminar	CLOs, Course Content, Teaching methods, Problems found in classes	Using interesting teaching techniques and new technologies in teaching will be advantageous for students.
Alumni (Graduated 1-2 years ago) (Graduated 3-4 year ago) (Graduated more than 5 years)	September – November 2022	- Questionnaire - Interview - Alumni Seminar	Nature of work and job assigned, Knowledge application in works, New technology tools, Problems at work	- Ability to adapt themselves to technology disruption is needed.
Learner	....	....	....	....

Key Stakeholders	Time period	Methods	Survey Issues	Results as Requirements
Employer	....	....	....	....
Please fill in the information of **all stakeholder groups** according to the actual exploration needs of each group.				

2.1.2) External Environment Analysis

Explanation

In this part, showing analysis and estimates of demand (quantitative data), comprises two parts: (1) demand of prospective students; and (2) demand of alumni of the program in the labor market. The program must show the current and future market demand, including the number of existing curricula or programs in the country similar to the proposed program. [The objective of this part is to demonstrate that this program is in demand in the labor market and can be competitive.]

For example:

Skill Mapping is the process of collating and identifying the necessary skills for a particular work position at hand (demand side) in comparison with the skills that students will attain from the program (supply side) in order to facilitate national human capital resource planning and designing programs that truly respond to the market demand. Learn more from

Skill Future (https://www.skillsfuture.gov.sg/) and

KMITL Skill mapping (https://skill.kmitl.ac.th/)

2.1.2.1) Analysis of Demand and Supply in Labor Market (Both Quantitative Data)

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2.1.2.2) Competitive Benchmarking Analysis

Explanation

Competitive benchmarking analysis involves the identification of peers and competitors in the context of the proposed program by considering all related issues, together with the analysis, discussion, and summary of the overview of the program to determine the program identity, the market segment where the program lies and its market positioning. This analysis should also highlight the program's key strengths and intended competitive edge.

Here are the competitive benchmarking steps.

1. Survey all possible competitive programs both in Thailand and abroad; including regular, international, English programs, or others.
2. Determine which best-in-class programs in universities should benchmark against and explain why.
3. Gather information from selected programs to identify gaps in your program's performance and analyze the competitors both in academic aspects, such as student development methods, and marketing aspects.
4. Adopt the competitive strategy: highlight or focus points of the program that create competitiveness.

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Examples (Guideline for preparation; can be adjusted according to the appropriateness of the program)

Issue	Programs and Universities			
	B.Eng. in Measurement Engineering (Continuous), KMITL	B.Eng. in Mechatronics and Automation Engineering, KMITL	B.Eng.in Robotics and Automation, KMUTNB	B.Sc. in Control Systems and Instrumentation Engineering, KMUTT (Current Course)
Years of Program	B.E. 2563	B.E. 2563	B.E. 2563	B.E. 2563
Format of the Program	Bachelor's Degree 3 years (Continuous)	Bachelor's Degree 4 years	Bachelor's Degree 4 years	Bachelor's Degree 4 years
Languages	Thai	Thai	English	Thai
Total number of credits	123 Credits	149 Credits	139 Credits	143 Credits
Number of General Course Credits	30 Credits	30 Credits	30 Credits	31 Credits
Number of credits for specific courses	87 Credits	113 Credits	103 Credits	106 Credits
Number of credits for Free Elective Courses	6 Credits	6 Credits	6 Credits	6 Credits

Issue	Programs and Universities			
	B.Eng. in Measurement Engineering (Continuous), KMITL	**B.Eng. in Mechatronics and Automation Engineering, KMITL**	**B.Eng.in Robotics and Automation, KMUTNB**	**B.Sc. in Control Systems and Instrumentation Engineering, KMUTT (Current Course)**
Number of students according to the admission plan	30 persons	120 persons	80 persons	80 persons
Admission Qualified	Thai students and international students with good Thai language skills	Thai students and international students with good Thai language skills	Thai or international students who can use English	Thai and international students with good Thai language skills.
Internship/Cooperative Education	No compulsory internship courses.	Internship in the special semester of the 3rd academic year and can choose elective courses for cooperative internships. (6 credits) to go on an internship in the 1st semester of the 4th academic year	No compulsory internship courses.	two study plans: 1) regular internship in the special semester of the 3rd academic year and 2) a cooperative internship plan in the 1st semester of the 4th academic year.
Tuition fee per semester	35,000 THB	25,000 THB	60,000 THB	Regular Plan: 20,937.50 THB, Co-op Learning Plan: 42,000 THB
Academic Competence and Competence	- Graduates are able to apply knowledge and skills in automation design and development. - Focus on self-learning, teamwork, communication, and professional ethics. - Organize engineering and economics project management courses as compulsory courses.	- Graduates are able to apply knowledge and skills in automation design and development. - Focus on System Integration to automate processes.	- Graduates are able to nesign and develop various types of robots using both pneumatic and hydraulic systems.	- Graduates are able to apply knowledge and skills in automation design and development. - Focus on producing graduates who are ready to use and practical work. - Learning emphasises on theory and practical experiences. - Students can relate the course contents via the mini-projects with other necessary work skills added. - Encourage students to keep pace with new technologies.

2.1.2.3) Other External Factors to be Considered (If any)

Explanation

These include technology shifts; policy; change of the ecosystem in the global context; or analysis of macro-environmental factors that may have an impact on the program and include, for example, demography, economic conditions, social conditions, culture, technology, politics, and relevant policies or laws. The objective of this analysis is to determine the opportunity or threat of externalities, as well as the potential impacts on the program.

Therefore, the program needs to produce graduates whose skills are in line with the national policy trends, and the mission and strategy of the institution (KMUTT), the latter of which corresponds with the national policy trends, and in accordance with higher education grouping.

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2.1.3) Internal Environment Analysis

Explanation

In topic 2.1.3, internal environment analysis refers to the performance appraisal of the program, including SWOT analysis to identify competitive strengths and serious weaknesses in the context of operations which may have an impact on the revision of the program.

2.1.3.1) Performance Appraisal

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Explanation

This part is the analysis of relevant information for at least the past five years, such as plan vs actual number of student admission, the rate of graduation, dropouts, duration of graduation, and so on. It may include other related topics, such as employment rate, alumni career advancement (in the case of students who have existing employment), self-assessment, etc. The program must present all related rates as in the table below.

Table .... Number of students in the program from the academic year 20xx-20xx

Degree Title and Field of Study: **Student Admission Plan:** (In case of several admission plans, specify in remark)					
Student ID	**First-time Student (pers.)**	**Dropout (pers.)**	**Left Behind (pers.)**	**Graduate (pers.)**	**Average Time to Graduate (year)**
Code xx					
Code xx					
Code xx					
Code xx					
Code xx					
Code 68					

Remark: The data shown in the table (Row) represents the number of students in the same cohort.

2.1.3.2) Strengths Analysis

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2.2) Overall Product Concept

2.2.1) Summary table of Issues from the Exploration and Stakeholder Analysis in topic 2.1 brings to the conclusion of the program design concept (Product concept).

Issues from the Data Analysis in topic 2.1	**Improvement Issues**	**PLOs related**				
		PLO 1		**PLO 2**		**PLO 3**
		1A	**1B**	**2A**	**2B**	
Group 1: Experts from both Academic and Industrial Sector + ... + ... (Issue is taken from the summary in topic 2.1.)	Explain how has the program revised on these issues (in each bullet)?	If any issue affects the determination of PLO, please specify which PLO is developed due to that revision, but if there is none (because it may only be an adjustment in teaching and learning management).				

Issues from the Data Analysis in topic 2.1	Improvement Issues	PLOs related				
		PLO 1		PLO 2		PLO 3
		1A	1B	2A	2B	
Group 2: Graduates student during academic year 2015 – 2025 + ...	.....	/	/			/
+	.....			/		
+	.....				/	
Please enter the information according to the actual perform of the program completely.						

2.2.2) Strength and Competitive Edge

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.....highlight or focus points of the program that create competitiveness to other programs .....

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2.3) Details of the Program Design

The overall product concept of the program (in topic 2.2) evolved into the details of the program, which are:

2.3.1) Determination of Program Learning Outcomes (PLOs)

Matters for consideration in the auditing and certification process by the Office of the Permanent Secretary (OPS), MHESI

- Learners show change or improvement in different aspects of the PLOs in their courses of study and accumulate learning outcomes with a tendency to ensure that all PLOs are achieved.
- Be able to serve the needs and satisfaction of learners and stakeholders.
- Be in accordance with the higher education curriculum standards.
- Be aligned with the higher education qualification standards, professional standards (if any), or international standards.

2.3.1.1) Philosophy, Importance and Objectives of the Program

Explanation

Specify the importance and key objectives for opening a new program or revising an existing program (what is this program for? why was the program established? Why should it be offered to learners?). These objectives must be aligned with the educational philosophy, the philosophy of the university, the higher education qualification standards, professional standards, and the graduate attributes.

The educational philosophy of the program is the principles what the program adheres to produce graduates This must correspond with the program importance, PLOs, teaching and learning strategies, outcome monitoring and assessment, and careers after graduation, all of which form the underlying basis for Outcome Based Education (OBE) framework.

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2.3.1.1.1) Program Philosophy

Example

Philosophy of the program is based on the belief that the program will produce valuable graduates who can apply information technology to create growth for the business and industrial sectors in order to improve the well-being of people.

Philosophy of the program: "To develop graduates in master's degree in information technology who are full of knowledge, ability, power, and ethics to improve the well-being and create growth for the organization and society."

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2.3.1.1.2) Importance of the Program

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2.3.1.1.3) Program Objectives

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2.3.1.2) Program Learning Outcomes; PLOs

PLO 1: **.....**

Sub PLO 1A .....

Sub PLO 1B .....

PLO 2: **.....**

Sub PLO 2A .....

Sub PLO 2B .....

2.3.1.3) The relationship between curriculum learning outcomes (PLOs), Graduate Attribute of King Mongkut's University of Technology Thonburi. (KMUTT student QF) and the Learning outcomes according to Thailand Qualification Framework (TQF).

Examples (to guide preparation, so they can be adjusted according to the program)

Program Learning Outcomes (PLOs)		KMUTT Student QF										TQF Learning Outcomes									
		KMUTT's citizenship			Knowledge	Professional	Thinking skill	Learning skill	Management skill	Communication skill	Leadership	1. Knowledge			2. Skills		3. Ethics		4. Character		
		Responsibility	Adaptability	Humanization								1.1	1.2	1.3	2.1	2.2	3.1	3.2	4.1	4.2	4.3 .....
PLO 1:	**.....**																				
Sub PLO 1A	.....																				
Sub PLO 1B	.....																				
PLO 2:	**.....**																				
Sub PLO 2A	.....																				
Sub PLO 2B	.....																				

- **Definition of the Desirable Graduate Attribute Framework of King Mongkut's University of Technology Thonburi (KMUTT-Student QF)**

1) **Knowledge:** having a deep academic knowledge base in the field of study and having extensive knowledge about the changes that have occurred and being able to apply knowledge to practice one's profession with expertise and in living a good life.
2) **Professional Skills :** the ability to translate knowledge into practice, have expertise in using professional tools and equipment, have the ability to apply technology to work, have the ability to guide and train others to be able to work and use various equipment.
3) **Thinking skills :** being creative, having a logical thinking system, knowing how to process information, brainstorming from different perspectives, being able to choose to use various thought patterns, and using them to solve problems and make decisions logically.
4) **Learning Skills** : knowing how to seek knowledge, seeing learning as occurring anywhere and anytime, which will help develop into a lifelong learner, able to learn through various forms of media, having a good system and method of thinking, and being able to distinguish and filter information obtained from learning appropriately.
5) **Communication skills :** having good skills in using Thai and English in listening, speaking, reading, and writing, being able to communicate with others correctly and appropriately, being able to convey and present work, and having good judgment in listening.
6) **Management Skills: a**ble to set goals, plan and execute effectively within resource constraints and on the basis of morality and ethics to achieve personal, organizational and social goals. Able to anticipate problems, impacts, and related factors, as well as have a positive attitude and the ability to prepare, prevent, and proactively resolve situations or problems.
7) **Leadership : h**ave confidence and value in themselves and others, have an understanding of the basics and needs of the team, be able to create a teamwork atmosphere, inspire and stimulate creativity, be aware of situations, opportunities, and challenges, and be able to seek/create ways to achieve a variety of goals. be to communicate and coordinate to create cooperation in team thinking and action, as well as being a good role model.
8) **KMUTT's Citizenship:** Professionalism and Integrity, including adherence to the Code of Ethics to develop into a fully human being (Humanization)

a. **Responsibilities: Be** responsible for themselves, professionally, and society, be disciplined and punctual, care for the environment and the public., do not abandon work or shirk responsibility, be ready to accept and deal with the consequences of actions, both direct and indirect, respect the rules and regulations of the organization and society, as well as academic and professional ethics.
b. **Adaptation:** be flexible and not cling to any thing to the point of blocking oneself from others, and be prepared to accept changes without resisting them, but are ready to understand the necessity of the change that occurs.
c. **Humanization: h**ave an optimistic attitude, not look down on oneself and others, value humanity, care for environment and public, be able to live well with others, and know how to give, share, and sacrifice.

- **Definition of Higher Education Qualification Framework (TQF) Learning Outcomes**

Explanation

- The curriculum has to specify the meaning of learning outcomes according to the Higher Education Qualification Standards Framework which can be downloaded from the website of the Office of Education Development and Services (EDS) or the Higher Education Standards Board (HEC) website according to their qualification level correctly (diploma/bachelor/master/doctoral) by adjusting it according to the context of the curriculum itself.
- The curriculum can create the Mapping between PLOs and the 4 main TQFs or define additional sub-sections of the 4 TQFs as appropriate.

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References

- Office of Education Development and Services Website https://eds.kmutt.ac.th
- Higher Education Standards Board (HEC) website Notification of the Higher Education Standards Committee Re: Details of Learning Outcomes in accordance with Higher Education Qualification Standards B.E. 2565 (2022)

2.3.2) Design Concept for Program Structure and Courses

Matters for considerations for the inspection and certification from the OPS, MHESI:

- The program identifies stakeholders and their requirements in order to meet their needs and expectations which lead to the formulation of learning outcomes reflecting learners development targets in both short-term and long-term.
- The design of the program structure and courses or learning modules relate to the expected program learning outcomes. This enables learners to actually build knowledge, skills, and academic and professional attributes.

2.3.2.1) Comparison between the program structure and the Notification of the Higher Education Standards Committee for Diploma/ Bachelor/ Graduate Programs B.E. 2565 (2022)

Description: Courses are requested to provide accurate information on the structure of the program according to their level as shown in the table below.

Diploma

Category	Number of Credits				Difference in Number of Credits
	Higher Ed. Criteria	Professional council criteria or others. Specify ..... (if any)*	Former Program B.E. 25.....	Revised Program B.E. 25.....	
1. General Education	≥ 24		31	27	- 4
2. Specific Courses 2.1 Subject Group ..... 2.2 Subject Group ..... 2.3 Subject Group..... 2.4 Subject Group.....	≥ 30		.....	.....	+ 3
3. Free Elective	≥ 3				
Total number of credits	≥ 60				

*Other criteria that the curriculum must consider such as the Council of Engineers, the Architect Council of Thailand, the Teachers Council of Thailand, etc. The number of credits in each subject must be determined in accordance with the above criteria.

Bachelor Degree

Category	Number of Credits				Difference in Number of Credits
	Higher Ed. Criteria	Professional council criteria or others. Specify ..... (if any)*	Former Program B.E. 25.....	Revised Program B.E. 25.....	
1. General Education	≥ 24		31	27	- 4
2. Specific Courses 2.1) Subject Group..... 2.2) Subject Group..... 2.3) Subject Group..... 2.4) Subject Group.....	≥ 72 (4 years) ≥ 90 (5 years) (Choose one)		.....	.....	+ 3
3. Free Elective	≥ 6				
Total number of credits	≥ 120 (4 years) ≥ 150 (5 years) (Choose one)				

*Other criteria that the curriculum must consider such as the Council of Engineers, the Architect Council of Thailand, the Teachers Council of Thailand, etc. The number of credits in each subject must be determined in accordance with the above criteria..

Master's Degree

Categories	Number of Credits				Difference in Number of Credits
	Higher Ed. Criteria	Professional council criteria or others. Specify ..... (if any)*	Former Program B.E. 25.....	Revised Program B.E. 25.....	
Plan 1 (Academic)					
Compulsory Courses	-				
Elective Courses					
Thesis	≥ 12				
Total number of credits	≥ 36				
Plan 2 (Professional)					
Compulsory Courses	-				
Elective Courses					
Independent Study	≥ 3 ≤ 6				
Total number of credits	≥ 36				

*Other criteria that the curriculum must consider such as the Council of Engineers, the Architect Council of Thailand, the Teachers Council of Thailand, etc. The number of credits in each subject must be determined in accordance with the above criteria..

Doctoral Degree

Categories	Number of Credits				Difference in Number of Credits
	Higher Ed. Criteria	Professional council criteria or others. Specify ..... (if any)*	Former Program B.E. 25.....	Revised Program B.E. 25.....	
Plan 1.1 Applicants with a master's degree (48 credits thesis)					
thesis	≥ 48				
Total number of credits	≥ 48				
Plan 1.2 Applicants with a bachelor's degree (72 credits thesis)					
thesis	≥ 72				
Total number of credits	≥ 72				
Plan 2.1 Applicants with master's degree (36 credits thesis)					
Compulsory Courses	≥ 12				
Elective Courses					
thesis	≥ 36				
Total number of credits	≥ 48				
Plan 2.2 Applicants with a bachelor's degree (48 credits thesis)					
Compulsory Courses	≥ 24				
Elective Courses					
thesis	≥ 48				
Total number of credits	≥ 72				

*Other criteria that the curriculum must consider such as the Council of Engineers, the Architect Council of Thailand, the Teachers Council of Thailand, etc. The number of credits in each subject must be determined in accordance with the above criteria.

2.3.2.2) Details of the program structure and courses

a) Total number of credits in the program: ..... credits

b) Program Structure (by Category)

Examples of Undergraduate Program Structure

A. General Education ..... credit
B. Specific Courses ..... credit
   - Basic Engineering .....
   - Basic Science and Mathematics .....
   - Compulsory ....
   - Electives..... .....
C. Free Electives ..... credit

Example of Master's Program Structure

Plan 1 (Academic Plan)

A. Compulsory Courses ..... credit
B. Elective Courses ..... credit
C. Thesis ..... credit

Plan 2 (Professional Plan)

A. Compulsory Courses ..... credit
B. Elective Courses ..... credit
C. Independent Study ..... credit

Examples of Doctoral Program Structure

Plan 1.1 Applicants who have completed a master's degree (48 credits thesis)

A. Thesis ..... credit

Plan 2.1 Applicants who have completed a master's degree (36 credits thesis)

A. Compulsory Courses ..... credit
B. Elective Courses ..... credit
C. Thesis ..... credit

c) Courses

The course code consists of alphabets and numbers with the following meanings:

The course code is divided into (1) the case of Course, consisting of three alphabets and three digits and (2) the case of OBEM, consisting of three alphabets and five digits.

Alphabet Code

GEC stands for Compulsory Learning Unit in General Education.
GES stands for Elective Learning Unit in the General Education
LNG stands for Language and Communication subject group.
..... means ..... subject group.
..... means ..... subject group.

Course Number Code (Only the XXX numeric code of this program is specified)	OBEM Course Number Code (Only the XXXXX numeric code of this program is specified)
Hundreds digit refers to the level of the course Numbers 1-4 refers to undergraduate course. Number 5 refers to graduate course but undergraduate students can choose to study. Number 6 and above refers to graduate course. **Tens** digit refers to a group of subjects. The number 0 refers to the ..... subject group. The number 1 refers to the ..... subject group. The number 2 refers to the ..... subject group. The number 3 refers to the ..... subject group. The number 4 refers to the ..... subject group. The number 5 refers to the ..... subject group The number 6 refers to the ..... subject group The number 7 refers to the ..... subject group The number 8 refers to the ..... subject group The number 9 refers to the ..... subject group **The unit digit** refers to the sequences of courses.	**Digit 10,000** refers to the level of the course. Numbers 1-4 refers to undergraduate course. Number 5 refers to graduate course but undergraduate students can choose to study. Number 6 and above refers to graduate course. **Thousands** of numbers refers to a group of subjects. The number 0 refers to the ..... subject group. The number 1 refers to the ..... subject group. The number 2 refers to the ..... subject group. The number 3 refers to the ..... subject group. The number 4 refers to the ..... subject group. The number 5 refers to the ..... subject group The number 6 refers to the ..... subject group The number 7 refers to the ..... subject group The number 8 refers to the ..... subject group The number 9 refers to the ..... subject group **The hundreds** digit refers to the sequence of the courses. **The tens digit number** refers to the sequences of course in the OBEM type, which divides into two cases: 1) OBEM without splitting from any course, use 00 (last two digits) 2) OBEM with splitting from any course, use the number 01-09 respectively
Example MTH 666 STD 111	Example : 1) OBE101 Adjust to OBE10100 2) EDS101 Divided into EDS10101, EDS10102

A. Compulsory Course Category (Based on the Program Structure) .....credit

XXX xxx .....Course Name (in English) ..... x(x-x-x)
(..... Course Name (in Thai) .....)

XXX xxxxx .....Module Name (in English) ..... x(x-x-x)
(..... Module Name (in Thai) .....)

GEC 11100 Humans and Ethics for Lifestyle 2(2-0-6)
(Man and Ethics of Living)

INT 60402 Information Governance 3(3-0-6)
(Data Governance)

B. Specific Course Category (Based on the Program Structure) .....credit

Please clearly state the conditions for choosing a course. For example, choose to take courses across subject groups, choose to study only one group of subjects, or choose extracurricular courses according to the approval of the program responsible faculty members, etc.

XXX xxx .....Course Name (in English)..... x(x-x-x)
(.....Course Name (in Thai).....)

XXX xxxxx .....Module Name (in English)..... x(x-x-x)
(.....Module Name (in Thai).....)

C. Free Elective Courses 6 Credits

Learners can choose any courses offered at King Mongkut's University of Technology Thonburi.

d) Components Relating to Fieldwork Experience (specified) *e.g. internship/ CWIE/Cooperate Education /Work Practice/WIL/others*. For each category, the following topics must be specified:

d.1) Learning outcomes of field experience

Specify the course name and course learning outcomes as stated in the Appendix. B. Details of the Unit of Learning in the Curriculum.

d.2) Duration

d.3) Number of Credits

d.4) Preparation

Briefly describe the preparation of providing academic advice and support to learners.

d.5) Learning Management

Explain the learning management of the course to achieve the learning outcomes of the prescribed course

d.6) Assessment Process

Explain the assessment process, including the mechanism for standard verification.

d.7) List of cooperative field experience (if any)

Name of the agency/institution.

e) Specifications related to the Project or Research (if any)

e.1) Learning outcomes of projects or research

Specify the course name and course learning outcomes of the project or research to match those specified in Appendix B. Details of the Unit of Learning in the course.

e.2) Duration

e.3) Number of Credits

e.4) Preparation

Briefly describe the preparation of providing academic advice and support to learners.

e.5) Learning Management

Explain the learning management of the course in order to achieve the specified learning outcomes of the course.

e.6) Assessment Process

Describe the assessment process, including the mechanism for standard verification

2.3.3) Design Concept for Teaching and Learning approach, Measurement and Assessment approach of Learning Outcomes

Matters for consideration in auditing and certification process by the Office of the Permanent Secretary, MHESI:

Teaching and Learning Design

- How did the learning process encourage learners to learn, knows how to seek knowledge, and instills lifelong learning and create a growth mindset?
- The learning process needs to ensure that learners are able to apply what they had learnt to real-life work in practice and respond to the demand of key stakeholders and also align with the expected learning outcomes.

Measuring and assessment approach

- How were monitoring and assessment of learning outcomes and learner's competneies development designed? The assessment process must demonstrate methods, tools, and criteria for determining credible outcomes, and be able to assess the actual learning outcomes of learners.
- What are the methods for reviewing, verifying, and ensuring the provision of feedback and reporting on learning outcomes that lead to the development and improvement of teaching and learning for both teachers and learners to ensure that program learning outcomes and course learning outcomes are achieved.

2.3.3.1) The teaching and learning process to enable learners achieve the program learning outcomes (PLOs) and course learning outcomes (CLOs).

a) Study Plan

This section of information is for recording in the New ACIS system. Please kindly define every study plan available in this program.

Study Plan.....

Year of Study..... Semester .....

XXX xxx ..... Course Name ..... credit (L P S)

XXX xxx ..... Course Name .....

XXX xxx ..... Course Name .....

XXX xxxxxx ..... Module Name .....

XXX xxxxxx ..... Module Name .....

Total

Number of Hours/Week = x

b) Learning Pathway

Explanation

Write a brief description of the learning pathway of the program and prepare a diagram summarizing the learning pathway of the program (the details of the learning pathway will be shown in Appendix B 2.2).

Learning Pathways are formed by the integration of OBEM (Outcome-Based Education Module) courses in sequence or combination [at least 9 credits or more]. Each learning pathway will help learner develop their competence or ability to perform any task.

A program may have more than one learning path that is consistent with career advancement. This is because future jobs and roles in each career are not limited to knowledge, skills, and experiences in a single field of study. Instead, it may be necessary to combine several fields of study so that graduates have the competence to work in a variety of roles and increase their career advancement opportunities. In addition, universities must prepare skill transcripts in accordance with the policy of the Higher Education Commission (HEC) and use them in designing degree and non-degree programs so that the programs can develop graduates' knowledge, skills, and abilities in line with future jobs and careers.

Guidelines for OBEM Course

- OBEM course should have 1 Ultimate Learning Outcome and be at the "Apply" level or higher.
- OBEM courses must be organize teaching and learning and assessing the learning outcome with clear and concrete assessment criteria (Rubric). To ensure that after completing from OBEM course, learners will achieve the set learning outcomes and develop their competency to perform a particular task successfully (Tasks / Jobs/ Situations) or be able to apply in various tasks or situations to upskilling, reskilling or new-skilling.
- OBEM courses must set the number of credits as an integer (1 or more credits) to be consistent with the current Information System for Educational Administration (New ACIS).

Learning Path Name: .....

Learning Path Descriptions:

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Learning path Diagram:

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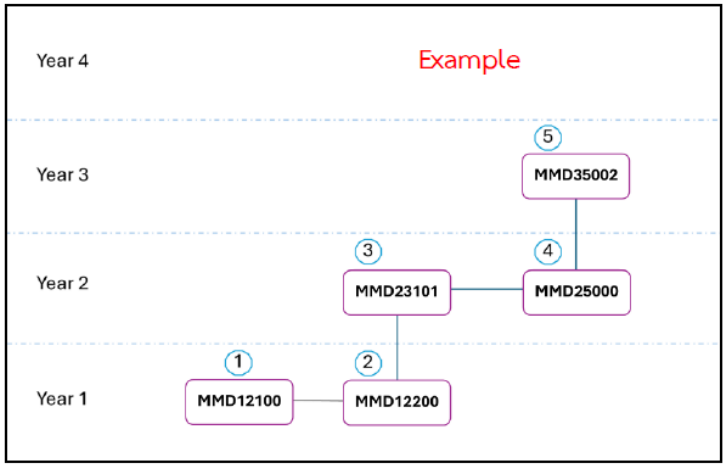
Example

Learning Path Name: Medical and Scientific Mannequin Maker Development Course

Learning Path Descriptions:

This course is designed to develop learners with mold making skills. Molding Casting of high-convex mannequins, low convex and floating to enhance the skills, abilities and efficiency of mannequin production for use in the medical and scientific industries (as detailed in Appendix B 2.2).

Learning path diagram:



c) Explain how to design the teaching and learning process that encourages learners to learn, know how to seek knowledge, cultivate learners to have lifelong learning, and develop a growth mindset.

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2.3.3.2) Assessment Approaches at Program-level and Course-level (PLOs) and CLOs)

a) The alignment of learning outcomes, teaching and learning approach, and assessment approach aims to develop learners to achieve the program learning (Constructive Alignment). This can be summarized as follows:

Table No. xxxxx .....

Program Learning Outcomes (PLOs)	Teaching and Learning Approach	Assessment Approach
PLO1..... Sub PLO1A..... Sub PLO1B.....	.....	.....
PLO2..... Sub PLO2A..... Sub PLO2B.....	.....	.....
.....	.....	.....

c) Stage Learning Outcomes (Stage-LOs) or Year Learning Outcomes (Year-LOs)

Explanation

- The purpose of Stage-Learning Outcome is to monitor and assess the development of leaners at each stage periodically and continuously through the whole program. If learners do not achieve the relevant level of learning at a particular stage, they will be corrected. (correction) to ensure readiness before the next phase of development. In addition, the results of the assessment can be used to improve the teaching and learning process in the future.
- Stage–LOs do not need to be determined annually, but the assessment period and method of each stage should be specified.

To ensure that learners have achieved the program learning outcomes, the program must set a control point or check point of learning outcomes to assessment the learning development of learners periodically and continuously. It can be summarized as follows:

b1) Stage-LO 1:

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b2) Time Period for Assessment

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b3) Assessment Methods

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b4) Criteria for Assessment

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Moreover, how is the process of tracking learners? And when learners are not able to pass or achieve the learning outcome, how is the curriculum's management approach to assist them?

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c) The relationship between program learning outcomes and course learning outcomes (PLOs-CLOs Curriculum Mapping)

c.1) Curriculum Mapping of the General Education Category for Undergraduate / the English Fundamentals course for Graduate students.

Description: Choose one of the items that matches the program.

- **For the Undergraduate** Curriculum Mapping of the General Education category, the structure of the General Education category can be downloaded from the website of the Office of Education Development and Services (https://eds.kmutt.ac.th).
- **For the Graduate** Curriculum_Mapping of the English Fundamentals Course can be downloaded from the website of the Office of Education Development and Services (https://eds.kmutt.ac.th).

c.2) Curriculum Mapping of the program

Description:

- The program should show curriculum mapping separately by semester with all elective courses and another curriculum mapping by each plan of study.
- The curriculum mapping must determines the level of learner development in each PLO or Sub-PLO and writes the definition of each level.

Example 1 (As a guideline, it can be adjusted according to the curriculum)

Courses	PLO 1			PLO 2		PLO 3		PLO 4	
	1A	1B	1C	2A	2B	3A	3B	4A	4B
Plan 1 Academic Plan									
Academic Year 1 Semester 1									
MTH 111 Calculus 1	I				I		I		
SED 613 Statistics for Artificial Intelligence		R				I		I	
INT 60401 Database Management			R	R				I	I
INT 60402 Governance Information		R			I	R			
Academic Year 1 Semester 2									
XXX xxx			R	I					I
XXX xxx			R			R			
Academic Year 2 Semester 1									
XXX xxx		M							
Academic Year 2 Semester 2									
XXX xxx	M				M			M	
XXX xxx						M			
Elective Courses									
XXX xxx	I				I			R	
XXX xxx			R			I			
XXX xxx		I		I			I		

Definition or meaning of each level

e.g. I = Introduced; indicate students are introduced to the outcome

R = Reinforced; indicate the outcome is reinforced and student afforded opportunities to practice

M = Mastery, indicate that students have had sufficient practice and can now demonstrate mastery

Example 2 (as a guideline for preparation, so it can be adjusted according to the curriculum)

Stage-LO	Courses	PLO 1			PLO 2		PLO 3		PLO 4	
		1A	1B	1C	2A	2B	3A	3B	4A	4B
Stage LO 1	**Academic Year 1 Semester 1**									
	MTH 111 Calculus 1	I		I		I	I	I		
	SED 613 Statistics for Artificial Intelligence		I	R			R		I	
	Academic Year 1 Semester 2									
	INT 60401 Database Management			R	I					I
	XXX xxx ..... (Check point) **.....**			**R** **.....**			**R** **.....**			
	(if any) If the curriculum has any courses or activities defined. It is a point of examination for learners, such as Capstone Project, QE exam, thesis outline exam, etc.									
Stage LO 2	**Academic Year 2 Semester 1**									
	INT 60402 Governance Information		R			R				
	XXX xxx ..... (Check point)					R				
Stage LO 3	**Academic Year 2 Semester 2**									
	XXX xxx	R				M			M	
	XXX xxx					M				
	XXX xxx ..... (Check point)			M		M	M			
Elective Courses	XXX xxx									
	XXX xxx									

Definition or meaning of each level

e.g. I = Introduced; indicate students are introduced to the outcome

R = Reinforced; indicate the outcome is reinforced and student afforded opportunities to practice

M = Mastery, indicate that students have had sufficient practice and can now demonstrate mastery

d) Graduation criteria

- In accordance with the Notification of the Higher Education Standards Committee on Standards for Diploma/Bachelor's/Graduate Programs **B.E. 2565 (2022**) and in accordance with the Regulations of King Mongkut's University of Technology Thonburi. Regarding Undergraduate Education B.E. 2557 (2014) / Graduate Education B.E. 2562 (2019) or other amended regulations
- If there are other conditions other than the KMUTT regulations. Please specify more.

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2.3.4) Design Concept for Learning Supports

2.3.4.1) Analysis of competency and readiness of academic staff and supporting staff

Explanation

This is an analysis and evaluation showing that program instructors and supporting staff possess adequate preparedness to enable learners to achieve all PLOs and are in alignment with other required applicable criteria.

Matters for consideration are:

- The quantity of the program responsible faculty members, the program faculty members (program instructors), and supporting staff is complete and in accordance with the applicable criteria.
- The qualifications, characteristics, and competencies of the academic staff and supporting staff are aligned with all prescribed criteria and the policies of KMUTT, the Faculty, and the Department.
- The ratio between the number of program instructors and supporting staff to the number of students is appropriate (compared with the standard criteria of the Office of the Permanent Secretary of the Ministry of Higher Education, Science, Research and Innovation (OPS MHESI).
- The qualifications, characteristics, competencies, knowledge, and expertise of the program instructors and supporting staff are in accordance with the requirements of the program, which facilitate learners to achieve the PLOs etc.

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2.3.4.2) Guidelines for the development of academic staff and supporting staff

Explanation

What is the curriculum for the development of new and existing teachers and staff to be ready to work in this program? Promoting and developing knowledge and skills of staff necessary to helps learners to achieve the desired learning outcomes. However, The curriculum can be studied in addition to the Notification of the Higher Education Standards Committee on Guidelines for Teacher Quality Development to Promote the Achievement of Learning Outcomes in accordance with Higher Education Qualification Standards B.E. 2566 (2023).

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2.3.4.3) Facilities & Infrastructure and Student support services

Explanation

The program shows the facilities and infrastructure management and how student support services are prepared to facilitate the development of learning to enable students to achieve the PLOs, which are:

This is to show that the curriculum has a model of service and teaching and learning support that is conducive to the development of learners to achieve the set learning outcomes.

Things to consider include:

- Teaching and Learning and service support (key resources or specific tools required for the program) that contribute to the development of learners to achieve PLOs as set such as textbooks, books, computer software, laboratories, workshops, tools, and equipment, etc.
- The adequacy and availability of teaching support and student services that will help promote the achievement of the learning outcomes of the designed curriculum, such as an adequate number or appropriate proportion to learner, comprehensive access to various services, good service. proper basic utilities, or funding, etc.

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2.3.4.4) Incomes and Expenses of the program

a) 5-year plan for admissions and graduates.

Number of students based on the program plan (for consideration by the OPS)

Detail	2026	2027	2028	2029	2030
Plan 1.1 for Master's Degree Candidates					
Year 1	2	2	2	2	2
Year 2	-	2	2	2	2
Year 3	-	-	2	2	2
Total	2	4	6	6	6
Plan 2.1 for Master's Degree Graduates					
Year 1	2	2	2	2	2
Year 2	-	2	2	2	2
Year 3	-	-	2	2	2
Total	2	4	6	6	6
Total for all plans	4	8	12	12	12
Prospective graduates	-	-	4	4	4

Total number of students of the program (for university consideration)

Detail	2026	2027	2028	2029	2030
Plan 1.1 for Master's Degree Graduates					
Year 1	2	2	2	2	2
Year 2	**1**	2	2	2	2
Year 3	**1**	**1**	2	2	2
Total	4	5	6	6	6
Plan 2.1 for Master's Degree Graduates					
Year 1	2	2	2	2	2
Year 2	**1**	2	2	2	2
Year 3	**2**	**1**	2	2	2
Total	5	5	6	6	6
Total for all plans	9	10	12	12	12
Prospective graduates	3	2	4	4	4

b) Tuition Plan

Tuition fee	16,000 Baht/person/semester	32,000	Baht/person/year
Registration Fee	1,800 Baht/credit	42,300	Baht/person/year
Tuition included		74,300	Baht/person/year
Tuition fees throughout the program		148,600	Baht/person

The details are as follows (for the purpose of preparing the announcement of the tuition fee of the program)

1. Students studying within the duration of the program

1.1 Regular semester

- Tuition Fee per semester ..... THB
- Course/Module Fee per credit ..... THB
- Thesis/independent study fee per credit THB

or - Tuition fee, flat rate per semester ..... THB

1.2 Special semester (choose 1 item)

☐ No teaching and learning activities

☐ Have teaching and learning activities (if necessary)

- Tuition fee per semester ..... THB
- Course/Module Fee per credit ..... THB
- thesis/independent study fee per credit ..... THB

or - Tuition fee, flat rate per semester ..... THB

2. Students studying over the time limit of the program (choose 1 item)

☐ 2.1 The same rate as item 1.

☐ 2.2 Collect other rates, as

2.2.1 Regular semester

- Tuition Fee per semester ..... THB
- Course/Module Fee per credit ..... THB
- Thesis/independent study fee per credit THB

or - Tuition fee, flat rate per semester ..... THB

2.2.2 Special semester (choose 1 item)

☐ No teaching and learning activities

☐ Have teaching and learning activities (if necessary)

- Tuition fee per semester ..... THB
- Course/Module Fee per credit ..... THB
- thesis/independent study fee per credit ..... THB

or - Tuition fee, flat rate per semester ..... THB

3. Other special fees (if any) per semester ..... THB

.....(Specify details and conditions for the special fees.) .....

However, The tuition fee is subject to the announcement of the university.

c) Average expenses per student per 5 fiscal years .... THB

2.3.5) Program Development Mechanism for Quality Assurance

Matters for consideration in the auditing and certification process by the Office of the Permanent Secretary, MHESI:

- Quality planning, quality control, and risk management which may arise during the operation of the program, as well as the ways in which complaints and appeals are handled.
- How the program uses the data from the course assessments for review and quality improvement purposes so as to enable students to achieve the learning outcomes prescribed and such that employers of graduates are confident that they will gain personnel with the appropriate competencies as their demand?
- What methods are used for the communication and dissemination of course information to key stakeholders for acknowledgment?

2.3.5.1) Quality Management Issues

Explanation

- The program explains the mechanisms or processes for quality assurance **that are conducted by the program itself**, whereby such an explanation covers all issues such as those relating to graduates, students, the program, instruction, classes, etc. in order to ensure that students achieve the PLOs.
- The process for quality assurance should show which activities will be conducted, how they will be conducted, when they will be conducted, who will be responsible for conducting the same, and how the results from the activities will be utilized going forward, how the review and assessment process is conducted; The aforementioned process must be **practicable** in order to continuously revise and improve quality, as well as to enable accommodation of post auditing by external auditors.

2.3.5.1(a) Educational Standard Criteria

Explanation

- Explain the process of managing the curriculum in accordance with the curriculum standards and the Thailand Qualifications Framework for Higher Education or the Professional Qualification and Occupational Standards throughout the duration of the teaching and learning in the curriculum.
- The process for quality assurance should show which activities will be conducted, how they will be conducted, when they will be conducted, who will be responsible for conducting the same, and how the results from the activities will be utilized going forward, how the review and assessment process is conducted

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Examples

Process	**Educational Standard Criteria** For consumer protection, every program must comply with Educational Curriculum Standards (Component 1) of the Office of the Permanent Secretary, Ministry of Higher Education, Science, Research and Innovation (OPS MHESI) and every program must record information on component 1 in the Commission on Higher Education Quality Assessment online system (CHE QA online) every year. Therefore, the program will set up instructors and supporting staff as a working committee to supervise, monitor, and assess various operations of the program in accordance with the curriculum standards. This must be completed before the start of the semester. In addition, there will be an assessment by the faculty level committee at the end of the academic year on an annual basis and the results of the assessment which has been approved by the Faculty Committee will be reported to the university level and OPS MHESI, respectively. Recommendations from every level will be used as input to improve the program next round.
Control Points	● Compliance with curriculum standards ● Meet the criteria of professional councils such as the Council of Engineers Thailand, the Medical Council of Thailand, etc.
Person in charge	- Program responsible faculty members - QMR (Quality Manager)

	- The program responsible faculty members and quality assurance committee at the faculty level
Time period	At the end of semester
Inspectors	- Quality assurance committee at the faculty level - Faculty Committee **- Associate Dean for Academic Affairs / Quality assurance**
Monitoring and Evaluation process/ procedures	The person in charge of the curriculum is required to work together with the Associate Dean for Quality Assurance. The Assistant Dean for Quality Assurance verifies the accuracy of course data and lecturer information in the course, and evaluates the results of notifications and academic performance tracking, and finds ways to improve the implementation in the next year.

2.3.5.1.(b) Students

Explanation

- Explain the processes to ensure that students achieve the learning outcomes specified by the program. This includes monitoring processes and quality assurance of students, such as the student admission process and preparation before entering the study, academic advising and guidance, and various support services provided to students throughout their study period, etc.
- - At the control point/checkpoint, how is the learner's development of the specified learning outcomes progressing? Are the results in line with the goals? In cases where there are discrepancies from the expected outcomes, what actions does the program take?
- Process to student quality assurance, such as [select the processes that the program will implement and provide a complete description].
  - Student admission process: The number and qualifications of students meet the criteria set by the program.
  - Preparation before entering the study.
  - Consideration of the results of the Placement test.
  - Student monitoring process throughout their study period: the rate of students (Dropouts/withdrawals) and the proportion of students failing foundational courses.

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Writing Guidelines

Process: (1) Student Admissions

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Control Points .....

Person in Charge .....

Time period .....

Inspectors .....

Monitoring and Evaluation process/procedures

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Process: (2) Preparation for learners before starting their studies.

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Control Points.....

Responsible Person .....

Person in Charge .....

Inspectors .....

Monitoring and Evaluation process/procedures

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Example

Process	i. <u>Student Admissions</u> The program conducts student admissions in accordance with the university's admission guidelines, following the timeline set by the faculty and university for each semester with the following steps: 1. Initial Preparation: Coordinate with the university's admissions office to disseminate information about the program and the student intake. Set the application period, admission criteria, and the number of students to be accepted in each round. 2. Preparation for Each Application Round: Receive applicant information from the university's admissions office, Prepare the interview system and establish the selection and interview committee members. 3. Execution in Each Application Round: Screen the qualifications of applicants (academic records, thesis outlines). Conduct interviews, announce eligible candidates for interviews, clarify selection guidelines to the interview committee, conduct interviews, and report the interview results to the university for both the Petchra Pra Jom Klao Scholarship program and the Direct Admission. 4. Conclusion: Summarize the admission data for each round, issues that arose, and suggestions for improvement in the next round.
Control Points	● Plan vs actual number of student admissions ● The number and qualifications of students are as specified by the program.
Person in charge	Faculty member and staff
Time period	Semester 1 from January to June Semester 2 from July to December
Inspectors	Program Committee

Monitoring and Evaluation process/procedures	1. Designate the program chair or concerned parties to monitor and verify each step of the process, especially at the checkpoints, and present findings to the program committee. Are the results in line with the goals? In cases where there are discrepancies from the expected outcomes, what actions does the program take? 2. After evaluating the interview results, the program chair or concerned parties should present the admission data for each round, address issues that arose, and discuss suggestions for improvement in the next round at the program committee meeting.

2.3.5.1.(c) Graduates

Explanation

- Explain the mechanisms for graduate monitoring and quality assurance to ensure that graduates achieve the learning outcomes specified by the program. The learning outcomes help graduates to work for a living, succeed, and meet the needs of learners and stakeholders as defined.
- At the control/checkpoint, can graduates achieve the program learning outcomes and the graduate attributes? Or how does the performance align with the goals? In cases where there are discrepancies from the expected outcomes, what actions does the program take?
- Process to graduate quality assurance, such as [select the processes that the program will implement and provide a complete description].

  • **Verification of compliance with graduation criteria**, such as checking credits according to the program structure, academic works that meet the program requirements, achieving the Program learning outcomes, etc.

  .• **Graduate quality assessment**, such as tracking graduates' employment status, career advancement after graduation, satisfaction, competencies of graduates as evaluated by employers, and feedback and opinions from graduates, etc.

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2.3.5.1.(d) Program, Teaching and Learning, Learner Assessment

Explanation

- Explain the mechanisms for monitoring and quality assurance of the program, teaching and learning, and learner assessment to ensure that program management is effective and efficient continuously, enabling students to achieve the program learning outcomes.
- At the control/checkpoint, how do the results or performances align with the set goals? In cases where there are discrepancies from the expected outcomes, what actions does the program take?
- The processes for quality assurance of the program, teaching and learning, and learner assessment, such as [select the processes that the program will implement and provide a complete description]
  - **Monitoring, and evaluation of the curriculum's operations**.
  - **Monitoring, and evaluation of the teaching and learning of each course**: Plans vs Outcomes of teaching and learning for each course, the instructor management system, etc.
  - **Monitoring, and evaluation of student learning outcomes**: Assessment of Stage-LOs, Authentic Assessment and various assessment methods, etc.

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2.3.5.1.(e) Instructors

Explanation

- Explain the mechanisms for Faculty monitoring and quality assurance and Faculty development to ensure that instructors possess the knowledge and competencies necessary to help learners achieve the learning outcomes.
- At the control/checkpoint, do instructors meet the targeted outcomes or performance criteria? In cases where there are discrepancies from the expected outcomes or performance criteria, what actions does the program propose to address them?
- **The processes for Faculty quality assurance** [select the processes that the program will implement and provide a complete description] **such as recruitment and selection, assignment of responsibilities, monitoring and evaluating performance, and assessing teaching competencies (coaching/facilitating), etc.**

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2.3.5.1.(f) Learning facilities and infrastructure

Explanation

- Explain the mechanisms for monitoring and quality assurance of learning facilities and infrastructure support to ensure that the operational systems of the department, faculty, institution, and program are adequately prepared and sufficient and the readiness of technology equipment and facilities or resources that facilitate learning. This will enable students to achieve the Program learning outcomes.
- At the control point/checkpoint, how do the results or performances align with the set goals? In cases where there are discrepancies from the expected outcomes, what actions does the program take?
- Quality Assurance Process for Learning Facilities and Infrastructure Support [select the processes that the program will implement and provide a complete description] such as the management plan for learning facility support and services to ensure that the learning facility support and services are always ready and sufficient for learners. This includes recruiting and preparing learning facility support before the semester starts, checking and maintaining plans, and evaluating usage at the end of the semester, etc.

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2.3.5.1.g) Others

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Details of the program improvement and development process for quality assurance can be summarized in a Table .....

Issues	Control Points	Tools / Processes / Procedures / Approaches	Responsible Person	Examiner	Time Period
1. Regulatory standards	● Qualifications, attributes, and number of instructors ● Structure of the curriculum that includes all subjects in accordance with the standards set by the Engineering Council ● Ensure compliance with the criteria of professional councils (e.g., Engineering Council, Teacher Council)	- Announcement of the Higher Education Standards Committee regarding Standards Criteria for Undergraduate/ Graduate Curriculum B.E.2565 (2022) - CHE-QA Online system - Certificate for practicing controlled engineering professions - Certificate of educational qualifications for professional practice from the Teacher Council	- Program coordinator - QMR (Quality Manager) - Curriculum Committee or Academic Committee of the Department	- Quality Assurance Committee at the faculty level - Faculty Committee - Associate Dean for Academic Affairs / Quality Assurance	At the end of semester (twice a year, in general)

Issues	Control Points	Tools / Processes / Procedures / Approaches	Responsible Person	Examiner	Time Period
		- Process for verification Component 1 and various criteria			
2. Students	- Enrollment plan vs. actual student intake - Number and qualifications of students meet the program's requirements - Student dropout/withdrawal rates - Proportion of students failing basic courses (OBEM with grades lower than C) - In the case of graduate students, OBEM grades lower than B	- Student Admission Process - Preparatory Activities for Enrollment in the Program - Placement Test Results - Student Status and Academic Performance Tracking	- Program Faculty and Staff	- Program Director	Every Academic Year
3. Graduate	**(1) Ensure compliance with graduation requirements:**				

Issues	Control Points	Tools / Processes / Procedures / Approaches	Responsible Person	Examiner	Time Period
	● Achievement of Program Learning Outcomes (PLOs)	- The process used to monitor and evaluate the Program Learning Outcomes (PLOs) established by the faculty or program - LEB2	- Year Advisors/Thesis Advisors - Program Coordinator	- Faculty Committee - Associate Dean for Academic Affairs/Graduate Studies - Program Coordinator	Within 1month after the thesis/project defense exam
	● Completion of required credits according to the curriculum structure	Registration System (NewACIS System)	- Program Supporting Staff - Graduate	- Registrar's Office - Program Coordinator	When requesting for graduation
	● Student work, such as thesis, independent study (IS), and other requirements according to KMUTT graduate regulations and/or additional program-specific requirements	- Thesis Defense Exam - Publications	- Thesis Advisor - Thesis Examination Committee	- Program Coordinator	-
	(2) Graduate Quality Assessment:				

Issues	Control Points	Tools / Processes / Procedures / Approaches	Responsible Person	Examiner	Time Period
	● Employment status of graduates in accordance with the needs of the program's stakeholders	- Questionnaire - Interview	Program instructors and program supporting staff	- Program Coordinator	Every 6 months after graduation
	● Achievement of competencies (Skills or Competencies as specified)	- Skill Transcript	All relevant instructors	- Program Coordinator - Dean	Upon graduation (closing transcript)
	● Career advancement after graduation	Questionnaire	Program instructors and program supporting staff	- Program Coordinator	Annually
	● Satisfaction, feedback, and the achievement of expectations of graduates regarding the program (self-assessment of whether their expectations were met)	Questionnaire Focus Group Interview	Program instructors and program supporting staff	- Program Coordinator	After graduation, at 5-year and 10-year intervals.

Issues	Control Points	Tools / Processes / Procedures / Approaches	Responsible Person	Examiner	Time Period
	● Program Learning Outcomes (PLO) of graduates as assessed through the perspective of employers.	Interview with employers or supervisors	Every instructor involved	- Program Coordinator	Within 1-2 year after employment
4. Lecturer	Teaching Performance of the Instructor (Coaching/Facilitation)	- Instructor's PSF (Professional Standards Framework) - Teaching Evaluation System for Instructors - Class evaluation by Students	Program instructors and program supporting staff	- HRD/HRM - Associate Dean for Administration	At least once a year
5. Curriculum / Teaching and Learning Approach/ Assessment	Assurance of Student Learning Outcomes by Stage-LOs	- As specified in the KMUTT Curriculum blueprint	- Program Coordinator	- Program Director in collaboration with Academic Advisors Department/Faculty Academic Committee	- As specified in the KMUTT Curriculum blueprint
	Soft skill (according to KMUTT Student QF)	- As specified in the KMUTT Curriculum blueprint	- Program Coordinator	- Program Director in collaboration with Academic Advisors Department/Faculty Academic Committee	- As specified in the KMUTT Curriculum blueprint

Issues	Control Points	Tools / Processes / Procedures / Approaches	Responsible Person	Examiner	Time Period
5.1 Graduate Level	● Assessment of readiness to conduct research	- QE Exam - Progress Exam Comprehensive Exam (for non-IS/Thesis study plan)	- Thesis Committee - Thesis Advisor	- Thesis Examination Committee Program Director	- As specified in the KMUTT Curriculum blueprint
	Research Competency Assessment	- Thesis Defense Exam	- Thesis Committee - Thesis Advisor	- Thesis Examination Committee Program Director	- As specified in the KMUTT Curriculum blueprint
6. Learning facilities and infrastructure - Tools and equipment - Place - Technology - Others	● Sufficient and readiness for learners ● Up-to-date materials	● Checklist ● Questionnaire regarding sufficient and readiness ● Productive and preventive maintenance plan ● Procurement process for learning facilities	Instructors, technicians, learning facilitators, teaching assistants	- Program Director	At the end of each semester (twice a year)
Note: The person responsible and the examiner must not be the same individual.					

2.3.5.2) Risk Management

Explanation

Risk is the probability that errors, damage, leaks, loss or undesirable events or acts may occur under uncertain conditions. This may potentially occur in the future and may also have an impact on or lead to unsuccessful performance thus causing the inability to achieve the set program objectives and targets in terms of strategy, operations, finance, and management. Risks may also have an impact on the program's survival as a whole.

❖ **Program risks;** for example, the program is shut down, students do not apply to the program or the number of students successfully enrolling in the program is lower than the target number of enrolled students, there are new competitors in the market, the program content is out of date thus it fails to meet the then-current demand, program instructors (professors) resigned mid-semester, program instructors are unable to teach classes in accordance with the program, graduates fail to obtain jobs (due non-alignment with market demand), or many students fail or drop out of the program, etc.

❖ **Risk Management** – the process of the program which is systematic and continuous in order for the organization to able to reduce grounds which are likely to cause damage, such that the seriousness of the potential damage and extent of such potential damage is maintained at a level that is acceptable for the program and which may be assessed, controlled and audited in a systematic manner, whereby the achievement of the program-level objectives or targets must be taken as core considerations.

Example (as a guideline for preparation, it can be adjusted according to the suitability of the program)

Risk Issues	Risk Management Plans
1) Rapid changes in new technologies	The program prepares by including a Special Topics course to respond to technological changes, ensuring that the program remains up-to-date and meets the demands of the labor market.
2) Increased competition leading to fewer students being enrolled than planned or a reduced number of enrollments.	The program has activities to mitigate risks as follows: (1) Proactive student recruitment activities, such as increasing promotional channels through social media, Open-house events both annually and for specific target groups, providing quotas through specialized camps, workshops, and hosting academic or skill competitions for target student groups, etc. (2) Educational guidance activities for younger students by seniors
3)	....

2.3.5.3) Complaints and Appeals Management

Explanation

In this section, the curriculum should explain the process for managing complaints and appeals, which includes the establishment of a working group, the determination of channels for receiving complaints and appeals, the procedures for reviewing complaints and appeals, the responsibilities and timelines, the follow-up on complaints and appeals, the notification of the results back to the complainant, and the summarization of operational results to utilize the findings for the development and improvement of the curriculum process (Plan-Do-Check-Act; PDCA).

.....

.....

2.3.5.4) Stakeholder Engagement and Communication Plan

Explanation

- The objective of communication is to create recognition and transparency in program management for stakeholders.
- The program should be effectively communicated through a variety of channels. Stakeholders can give feedback and inquire about program/services and have provided channels where complaints can be made as well.
- **Examples**:

1) Promoting program information through the faculty's website, which serves as the main channel for disseminating program details, program enrollment, and activities through the faculty's social media, including Facebook and YouTube, to all stakeholder groups.

2) Orientation activities for new students at both the faculty and curriculum levels to provide information about the program and learning support services.

3) Meetings to inform students, faculty members, and supporting staff about the program detail, program management, teaching and learning approach, learning facilities, etc.

4) Communicating through LINE by academic service staff to provide information and answer students' questions.

5) Communicating through academic advisors and instructors to communicate both face-to-face and electronic channels to announce news to students.

6) University and faculty service systems for communication, such as MOD-Link, NewACIS, e-Petition, Help Desk system, etc.

7) Engaging with those interested in studying the program through social media channels, such as LINE Open Chat and Facebook Messenger.

8) Communicating with students and all stakeholder groups on an individual basis (in case of urgent matters) through social media, SMS, or by phone.

etc.

.....

.....

Part 3 Program Specification

3.1) Program Code: ..... Specify 14-digit code in CHECO system.....

3.2) Program Name

(Thai) : Program ..... Major.....

(English) : ..... of ..... Program in .....

Example.

(Thai) : วิศวกรรมศาสตรบัณฑิต สาขาวิชาวิศวกรรมสิ่งแวดล้อม

(English) : Bachelor of Engineering Program in Environmental Engineering

3.3) Degree Title and Field of Study (Thai/ English)

3.3.1 Full Name (Thai) : ..... (.....)

(English) : ..... (.....)

3.3.2 Abbreviation (Thai) : ..... (.....)

(English) : ..... (.....)

Example.

3.3a) Full Name (Thai) : วิศวกรรมศาสตรบัณฑิต (วิศวกรรมสิ่งแวดล้อม)

(English): Bachelor of Engineering (Environmental Engineering)

3.3b) Abbreviation (Thai) : วศ.บ. (วิศวกรรมสิ่งแวดล้อม)

(English): B.Eng. (Environmental Engineering)

3.4) Major (if any):

☐ None

☐ Available which is/are (Specify) .....

Explanation

- An undergraduate program providing major(s) must have credit hours of compulsory courses not less than 30 credits per major.
- A graduate program cannot have a major due to insufficient credits collection for a major, if the program has divided fields, please specify them as subfields instead.

3.5) Total Credit Hours:

..... credit

Explanation: specify the total credit hour of the program according to its own level correctly, following the format below.

Bachelor's Degree ..... credit

Master's Degree

Plan 1 (Academic; a research-focused and thesis program) ..... credit

Plan 2 (Professional; a coursework-focused program with no thesis)..... credit

Doctoral Degree

Plan 1.1 Students who hold a master's degree ..... credit

plan 1.2 Students who hold a bachelor's degree ..... credit

plan 2.1 Students who hold a master's degree ..... credit

plan 2.2 Students who hold a bachelor's degree ..... credit

3.6) Program Degree Level Type:

4-Year or 5-Year Undergraduate (Bachelor's) Program

2-Year Graduate (Master's) Program under Plan ..... [Plan 1 (Academic) and/or Plan 2 (Professional)]

3-Year Ph.D. Program under Plan .... (1.1/2.1) or 4-Year Ph.D. Program under Plan .....(1.2/2.2)

3.7) Program Type

Explanation

- Professional bachelor's degree programs must be courses that require a professional license from a professional organization such as the Council of Engineers. Council of Architects, Guru Sabha, etc.
- The Bachelor of Operations program requires at least 36 credits of practical courses and at least 24 credits of theoretical courses, counting only courses in specific subjects, such as 3 (0-6-6) as practical subjects, 3 (3-0-6) as theoretical subjects, and not counting courses with both practical and theoretical subjects, such as 3 (3-2-6).

Bachelor's Degree (choose 1 type)

☐ Academic Bachelor's Degree

☐ Professional Bachelor's Degree

☐ Operations Bachelor's Degree

Master's Degree

☐ Academic Master's Degree

☐ Professional Master's Degree

Doctoral Degree

☐ Academic Ph.D. Degree

3.8) International Standard Classification of Education, ISCED

1) Broad Field: ...06 Information and Communication Technologies (ICTs)...

2) Narrow Field: ...061 Information and Communication Technologies (ICTs)...

3) Detail Field: ...0612 Database and network design and administration.....

Explanation

Please specify all topics (1-3) completely and in more detail; for more information, see the ISCED 2013 classification document.

ตัวอย่าง

1) Broad Field: 06 Information and Communication Technologies (ICTs)

2) Narrow Field: 061 Information and Communication Technologies (ICTs)

3) Detail Field: 0612 Database and network design and administration

06 Information and Communication Technologies (ICTs) (เทคโนโลยีสารสนเทศและการสื่อสาร)	061 Information and Communication Technologies (ICTs) (เทคโนโลยีสารสนเทศและการสื่อสาร)	0611 Computer use (การใช้คอมพิวเตอร์) 0612 Database and network design and administration (ฐานข้อมูลและการออกแบบและการจัดการเครือข่าย 0613 Software and applications development and analysis (การพัฒนาและการวิเคราะห์ซอฟต์แวร์และแอปพลิเคชั่น)

3.9) Language of Instruction

Explanation

- Specify the language of instruction of the program whether it is Thai, English or others.
- If it is a regular program taught both in Thai and foreign language(s) (e.g., English), please specify as the example: "The main language of instruction is Thai, with textbooks and supporting course materials in English and/or Thai."

The language of instruction is ..... [Thai, English or other foreign languages (specify)] with textbooks and supporting course materials in..... [Thai, English or other foreign languages (specify)]

3.10) Collaboration with other Institutions (If any)

Explanation

- Specify whether this is a program specific to the institution which is being taught directly by the institution or one which is organized in collaboration with another educational institution/ agency under an MOU. The name of the educational institution/ agency collaborating under an MOU must be specified. In the case of a collaboration under an MOU, supporting documentation should be appended, and the said MOU shall not have expired.

☐ A program specific to the institution which is being taught directly by the institution.

☐ A program which is organized in collaboration with another institution as follows:

- MOU-based collaboration: : .....

3.11) Conferring Degrees

.....

Explanation

Specify whether the degree comprises a single focus area or multiple focus areas (in the case of a dual-degree program) or other degrees completed during the course of the program, or a joint degree program with another higher education institution which has an existing MOU with KMUTT.

3.12) Location of Instruction

Department of....., Faculty of.....
King Mongkut's University of Technology Thonburi,
Bangmod Campus / Bangkhuntian Campus / Ratchaburi Learning Park

3.13) Dates and Time of Instruction

Explanation

Clearly specify the date and time of instruction and designate all semesters during which the program is offered. The first and last month in which the program is offered must be clearly specified

- Business hours (Mon – Fri, 08.30 am – 4.30 pm) and/or
- Outside of business hours (Mon – Fri, 6.00 pm – 8.00 pm and Sat – Sun, 09.00 am – 6.00 pm)

The date and time of instruction may be subject to change as appropriate.

Academic Calendar

Semester 1: August – December

Semester 2: January – May

Special Semester: June – July (if any)

3.14) Educational Management and Educational System

Education Management

The system divides each year of study into two semesters for full-time studies. Each semester has a duration of at least 15 weeks.

Education System

☐ The mode of instruction comprises in-person classroom settings and/or the use of electronic media.

☐ Others (Specify) .....

3.15) Full Name, Academic Rank and Educational Qualifications of the Program Responsible Faculty Members

(Add the symbol * after the name of the program director)

No.	Full Name	Educational Qualifications (Field of Study), Name of Institution, Country (Graduation Year) (Organize by the highest level of qualification to Bachelor's degree level of studies)
1	Dr. Sombat Appropriate*	Ph.D. (Computer Science) University of Alabama, U.S.A. (2020) M.Sc. (Computer Science) Vanderbilt University, U.S.A. (1999) B.Sc. (Computer Science) Thammasat University, Thailand. (1991)
2		
3		
4		
5		

3.16) Full Name, Academic Rank and Educational Qualifications of the Program Faculty Members. (Include the list of the Program Responsible Faculty Members.)

No.	Full Name	Educational Qualifications	Focus Areas Related to the Program (Explain)
	Name	Direct/ Related (Specify whether they are direct or related to the program)	Specify only in cases related to the program of study or specific areas
1	Dr. Sombat Moesom	Direct	-
2	Asst. Prof. Dr. Sudsuay Saendee	Related	The instructor has expertise in computer science and information technology, as well as communication and public relations, both in online media and media innovations, which aligns with the needs of the program.

3.17) Qualifications of Prospective Students

1. Specify whether “Thai students” or “international students” or “Both Thai and international students” are eligible for enrolment.

2. Specify the qualities and qualifications of the target students of the program, whereby the expected qualities and qualifications must be adequate to enable students to graduate in accordance with the program.

3. Qualities and qualifications of prospective students may be separate based on each plan of study.

Explanation

For the Ph.D. program, please specify the qualifications for prospective students as follows: "The prospective students must submit English language proficiency scores to be considered for admission qualifications according to the criteria set by each program. If a program does not specify, it will follow the university's English language development policy."

3.18) Program Status and Program Consideration/Approval

Explanation
The central administration of KMUTT will add information itself based on the consideration of the Academic Council and the University Council after the program has been duly approved by the University Council.

☐ New Program ⇨ Scheduled to commence in (Month)..... Year .....
Semester..... Academic Year.....

☐ Revised Program ⇨ Scheduled to commence in (Month)..... Year .....
Semester..... Academic Year.....

- Instruction began since (Year).....
  [Specify the year in which the instruction of the program began for the first time.]
- Revised from (Degree Title) ..... Program in (Field of Study) ..... New Program/ Revised Program B.E. .....
  [Specify the degree title, field of study and the year of the existing program prior to the revision.]

Considered by the Academic Council at Meeting No. ...../.....
Date..... Month..... Year .....
Approved by the University Council at Meeting No. .....
Date..... Month..... Year .....

3.19) Preparedness for Publication of a High-quality, Standardized Program

Explanation
The publication period should have a duration equivalent to half of the duration of the program (at the beginning of the year of study)
For revised programs that will become effective in the semester 1/2026, the "year of publication" should be designated as per the following guidelines:

- Bachelor's Degree/ Undergraduate 4-Year Program = Academic Year 2027 or 5-Year Program = Academic Year 2028
- Master's Degree/ Graduate 2-Year Program = Academic Year 2026
- PhD Program 3-5-Year Program = Academic Year 2027

The department is prepared to engage in the publication of a high-quality, standardized program in accordance with the Standards for Higher Education Qualifications B.E. 2565 (2022) in Academic Year .....

3.20) Career Opportunities of the Graduates

Explanation

Possible career pathways following graduation must be aligned with the program philosophy, program objectives and program learning outcomes (PLOs) and should be the core targeted profession for the program.

(1) .....

(2) .....

(3) .....

Part 4 Appendix

Appendix A Opinions of the External Experts and Program Responses
Appendix B Unit of Learning Descriptions
Appendix B1 Unit of Learning Descriptions : General Education / Basic Engineering / Basic Science and Mathematics
Appendix B2 Unit of Learning Descriptions of the subjects in the course
Appendix (B2.1) Unit of Learning Descriptions: Course
Appendix (B2.2) Unit of Learning Descriptions: Learning Path
Appendix (B2.3) Unit of Learning Descriptions: OBEM
appendix C Background of the Program Faculty Members and Supporting Staff
appendix C1 Background of the Program Faculty Members
appendix C2 Background of the Supporting Staff
appendix D Appointment of the Program Development/ Revision Committee
Appendix E Regulations of KMUTT on Undergraduate/ Graduate Studies
Appendix F Collaboration with other Institutions (If any)
Appendix G Course Comparison between the Former Program and the Revised Program (Only for Revised Program)
Appendix H .... Others.... (If any)

Appendix A: Opinions of the External Experts and Program Responses

Explanation

- ❖ A summary of the opinions and suggestions of the external experts and program responses.
- ❖ Clearly specify which parts need to be revised, where revisions were made, and only report topics reflecting the quality of the teaching path in the program. The program responses must be aligned with the opinions and suggestions of the external experts.

Example

Full Name: .....
Position and/or Academic Rank: .....
Affiliation: .....
Type of Expert: ... Academic, Industry, Employer... *(Specify the role of the experts as approved by the Academic Council)*
Approves the program, but has the following suggestions:

Suggestions	Program Responses
Information which should not be included, as they are suggestions which do not reflect the quality of teaching, for example: ~~1. The course name for course code number xxx123 on page 23 does not match the one on page 145.~~ ~~2. Many spelling errors were found.~~	~~1. All inconsistencies have been rectified.~~ ~~2. All spelling errors have been rectified.~~
Suggestions	Program Responses
Good examples to be followed, for example, the program should provide training on communication skills and presentation skills to students.	Courses XXX and YYY have been added to the program. These courses aim to provide all students with training in presentation skills. All courses in the program have been requested to integrate presentations as part of the course component in order to help students improve their communication skills and presentation skills.

Appendix B Unit of Learning Descriptions

Appendix B1 Unit of Learning Descriptions : General Education / Basic Engineering / Basic Science and Mathematics

Explanation

The program should specify the details of the learning units for General Education / Foundational Engineering / Foundational Science and Mathematics as selected by the program.

The program can download the structure of the General Education courses / Foundational Engineering / Foundational Science and Mathematics from the website of the Office of Educational Development and Services (https://eds.kmutt.ac.th).

Course Code .....

Course Name (Thai): .....

(English): .....

Number of Credits: ..... 3(3-0-6) .....

Category: .....Compulsory Course/Elective.....

Course Requirements (if any):

- ○ **Pre-requisite** : ..... None / Yes (Specify module code and course name).....
- ○ **Co-compulsory** : ..... None / Yes (Specify module code and course name).....
- ○ **Other (specify):** .....

..... *e.g. This course/module is offered only in this program. /This course/module is available only to fourth-year students.* .....

Course Description:

(Thai): .....

(English): .....

Course Learning Outcomes (CLOs):

1. .....
2. .....

Appendix B2 Unit of Learning Descriptions of the subjects in the course

Appendix (B2.1) Unit of Learning Descriptions: Course

Course Code .....MMD123.....

Course Name (Thai): .....

(English): .....

Number of Credits: ..... 3(3-0-6) .....

Category: .....Compulsory Course/Elective.....

Course Requirements (if any):

- **Pre-requisite** : ..... None / Yes (Specify module code and course name).....
- **Co-compulsory** : ..... None / Yes (Specify module code and course name).....
- **Other (specify):** .....

..... *e.g. This course/module is offered only in this program. /This course/module is available only to fourth-year students. .....*

Course Description:

(Thai): ....

(English): ....

Course Learning Outcomes (CLOs):

1. .....
2. .....

Appendix (B2.2) Unit of Learning Descriptions: Learning Path

Learning Pathway Name: .....

Learning Pathway Descriptions:

.....

.....

Competencies or Qualifications of Prospective Students:

.....

.....

Learning Pathway consists of the Following OBEM:

.....

.....

Learning Requirements (if any):

.....

.....

Example

Learning Path Name: Medical and Scientific Mannequin Maker Development Course

Learning Path Descriptions:

This course is designed to develop learners with mold making skills. Molding Casting of high-convex mannequins, low convex and floating to enhance the skills, abilities and efficiency of mannequin production for use in the medical and scientific industries.

Competencies or qualifications of Prospective students:

Student must have completed upper Secondary Education or its equivalent in all subject areas, or have completed an equivalent level of upper Secondary Education from abroad, or have graduated with a Vocational Certificate or its equivalent in the field of Medical Audio Visual Education, or Audio Visual Education (Medical demonstration), or Information and Communication Technology, or Computer Science, or Arts, or other related fields, subject to the discretion of the curriculum committee.

Components of the Learning pathway:

The learning pathway of the curriculum for developing medical and scientific simulation producers consists of 5 OBEMs as follows:

ลำดับ	รายวิชา	หน่วยกิต/ชั่วโมง
5	MMD 35002 Model Sculpting production in Medical and Science (การสร้างหุ่นจำลองทางการแพทย์และวิทยาศาสตร์)	3
4	MMD 25000 Relief Sculpting production in Medical and Science (การสร้างหุ่นจำลองนูนสูงและนูนต่ำทางการแพทย์และวิทยาศาสตร์)	3
3	MMD 23101 Medical and Science Illustration (ภาพประกอบทางการแพทย์และวิทยาศาสตร์)	2
2	MMD 12200 Principles of Anatomy Drawing (หลักการวาดภาพกายวิภาคศาสตร์)	2
1	MMD 12100 Human Anatomy (กายวิภาคศาสตร์ของมนุษย์)	3

Learning Requirements:

- o Learners must complete all 5 courses in the sequence of skill development to receive a Certificate from the university. They may transfer the credits from those courses to equivalent courses in a Degree Program, according to the course transfer conditions of the program and by university regulations.
- o Additionally, learners must achieve the learning outcomes for each course and obtain a grade of at least B in all courses as assessed by the instructor.

Appendix (B2.3) Unit of Learning Descriptions: OBEM

b (2.3.1) OBEM: (Part of the Learning pathway)

.....

.....

b (2.3.2) OBEM: (not part of the Learning pathway)

.....

.....

Course Code .....MMD12300.....

Course Name (Thai): .....

(English): .....

Number of Credits: ..... 3(3-0-6) .....

learning hours .....

Category: .....Compulsory Course/Elective.....

Course Requirements (if any):

- **Pre-requisite** : ..... None / Yes (Specify module code and course name).....
- **Co-compulsory** : ..... None / Yes (Specify module code and course name).....
- **Other (specify):** .....

  ..... *e.g. This course/module is offered only in this program. /This course/module is available only to fourth-year students.* .....

Course Description:

(Thai): .....

(English): .....

Course Learning Outcomes (CLOs):

1. .....
2. .....

Upon completing this OBEM:

a) Learners will have acquired certain competencies that enable them to successfully perform specific tasks or apply these skills effectively in various jobs or situations.

.....

.....

consist of:

K-Knowledge: .....

S-Skills: .....

E-Ethics: ....

C-Characters: ....

b) Criteria for the Competency Levels of the Learning Outcome (Rubric)

level	Explanation of the Steps in Evaluating Academic Performance (Performance Criteria)
Level 1	
Level 2	
Level 3*	
Level 4	
Level 5	

Explanation:

The establishment of assessment criteria (Rubric) should specify descriptions of competencies to be used for evaluating performance (Performance Criteria) that show the abilities of learners that can be achieved upon completion of the course. All courses are required to set a minimum threshold level that instructors deem acceptable for passing (threshold) or for learners to achieve the expected learning outcomes (meet expectation) at Level 3 to ensure the learning outcomes of the OBEM.

Performance Criteria, or the level of achievement, is in the form of a holistic rubric that the instructor uses to evaluate the overall learning outcome by setting the level that the instructor aims to ensure the learning outcome meets at Level 3 to guarantee the learning outcomes of OBEM.

Appendix C Background of the Program Faculty Members and Supporting Staff

Appendix C1 Background of the Program Faculty Members

Name - Surname Thai .....

Name – Surname English .....

1. Educational Background

Year B.E. ..... Ph.D. (.....), University ....., Thailand

Year A.D. ..... M.S. (.....), University of ....., U.S.A.

Year A.D. ..... B.S. (.....), University of ....., U.S.A.

Qualifications and Fields of Study

For instructors whose qualifications and fields of study/ subject areas are related to the program's field of study, please provide supporting reasons and information.

For Example:

- Expertise in Fermentation, Animal Cell Culture and Virus Clearance, which are related to the research topics of this course.
- Expertise in Postharvest Pathology, Microbiology, Food Safety, and Molecular Biology in Plant Pathology, with the ability to advise on research works under the program.

The information in this section must match the **topic 3.1.5**

☐ Qualifications and fields of study are matched with those of the program.

☐ Qualifications and fields of study/ subject areas are related to the course subjects of the program (Please explain) .....

2. Academic Work for the Past Five Years

Group 1 Research (for 1.1 and 1.2 must specify which database can be searched according to the Office of the Higher Education Commission's announcement, such as Scopus, Web of Science, etc.)

1.1 International journal (Weight value 1)

.....

1.2 National Journal (0.4 weight value)

.....

1.3 International Conference (0.4 Weight)

.....

1.4 National Conference (0.2 weight)

.....

Group 2 Academic Works in other Forms

1.1 Academic Works for Industry

.....

1.2 Academic Works for Teaching and Learning Development

.....

1.3 Academic Works for the Development of Public Policy

.....

1.4 Case Studies

.....

1.5 Translation Works

.....

1.6 Dictionaries, Encyclopedias, Directories, and Similar Academic Works

.....

1.7 Creative Works in Science and Technology

.....

1.8 Aesthetics and Artistic Creative Works

.....

1.9 Patents

.....

1.10 Software

.....

Group 3 Academic Works for Serving Society

.....

Group 4

4.1 Textbooks

.....

4.2 Books

.....

4.3 Academic Articles

.....

Guideline:

- Identify only updates of 3-5 works that are relevant to their fields of study. (excluding categories without works).
- Fill in information completely according to the principles of writing a bibliography. See the details of the manual for writing academic works according to the bibliographic format on the EDS website.

  Example writing format for journal articles:
  Author(s). (Year of publication). "Title of the article," Full name of the journal. Volume (vol.), Issue or edition (No.), Pages. (Available from TCI database...)
  For other formats of works, further details can be found in the manual for writing academic works.
- The specified work must be formatted and distributed in accordance with the Civil Service Commission in Higher Education Institutions.
- Works of no. 1.1-1.4 must specify which database it can be searched from as announced by the Office of the Higher Education Commission, such as Scopus, Web of Science, etc.
- Clearly separate the types of work. See the types of academic work attached to the Office of the Higher Education Commission's announcement regarding criteria and methods for considering appointments of persons to positions: Assistant Professor, Associate Professor, and Professor.
- Works presented at international and national academic conferences since B.E. 2565 (2022) must come from academic conferences organized by academic or professional associations, in accordance with the notification of the Office of the Civil Service Commission in Higher Education Institutions and must specify which entities organized the academic conference completely. In cases where there are more than ten organizing bodies, at least five primary organizers must be identified. Additionally, a cover page of the proceedings book comprising the academic articles must be attached to the work submitted.

  Articles in the conference proceedings should be formatted as follows:
  Author's Name. (Year of Publication). "Article Title," Conference Name. Conference Session (if applicable), Date of Conference, Location of Conference, Page Numbers. [Conference organized by.....]

Example:

"Niticai Lueang-aram, Kusakanna Kubaha, and Rungrojt Songkhaob. (2022). "Feasibility Assessment of Repurposing Lithium-Ion Batteries from Electric Vehicles as Energy Storage Systems along with Rooftop Solar Power in Thailand," Proceedings of Kasetsart University's Academic Conference, 60th Session, February 21-23, 2022, Kasetsart University, Bangkhen, Bangkok, Thailand, pp. 196-204." [Conference organized by Kasetsart University in collaboration with the Ministry of Higher Education, Science, Research and Innovation, the Ministry of Agriculture and Cooperatives, the Ministry of Education, the Ministry of Digital Economy and Society, the Office of the National Science, Research, and Innovation Policy Council, and the Prachachuen Research Network.]

3. Workload

3.1) Current Workload

- Undergraduate/graduate Workload (includes project/thesis/independent study)

Course Code	Course Name	Credit(s)	Credit Hour(s) per Academic Year (Approximately)

- Other workloads (if any)

.....

.....

3.2) Workload in this course

- Undergraduate/graduate Workload (includes project/thesis/independent study)

Course Code	Course Name	Credit(s)	Credit Hour(s) per Academic Year (Approximately)

4.Work experience/Operational experience

(for Professional Bachelor's Degree or Operations Bachelor's Degree program)

Explanation

In the case of Professional Bachelor's Degree or Operations Bachelor's Degree program that emphasize technical skills in that discipline, at least 2 out of 5 faculty members responsible for the program must have operational experience.

" Operational experience" refers to working with enterprises, supported by evidence of work performance that benefits the enterprise, or certification of labor skill standards, or academic contributions in the form of technology development, or creative works in science and technology related to the industry that have been published.

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Appendix C2 Background of the Supporting Staff

Name of Supporting Staff in the Program (e.g., laboratory staff, technicians, and practical teachers)

No.	Full name	All educational Background Information	Scope of Work

Appendix D: Appointment of the Program Development/Revision Committee

(Attach this document before proposing the program for the university's consideration)

The list of external experts considering the program must be as the one approved by the Academic Council.

Appendix E: Regulations of KMUTT on Undergraduate / Graduate Studies

(Attach this document before proposing the program for the university's consideration)

Appendix F: Collaboration with other Institutions (If any)

(Attach this document before proposing the program for the university's consideration)

If the program refers to the collaboration with other institutions in part 3, no.9 "Collaboration with other Institutions", please attach the up-to-date related documents, e.g., MOU.

Appendix H Comparison Table of Courses between the Original Course and the Revised Course (in case of the Revised Course)

explanation

- List **ALL** courses based on their categories as appearing in the program structure including those of General Education and those available to students outside of the program. (If any)
- Specify course code, course name (Both in English and Thai), and number of credits of **ALL** courses in **ALL** categories according to the former program and the revised program.
- Clearly specify details of any changes available of each course in the column "Remark"; for example, changes in the Thai/ English course names, addition/ reduction of number of credits, revision of course descriptions, new course offerings, canceling courses, changing the category of courses, etc.
- If there is no change available, please specify the word "No change" in the remark box.

** Remark: This part is an important supporting document for the KMUTT Council's consideration. **

Example

The Former Program B.E. 25.....	Credit(s)	The Revised Program B.E. 25.....	Credit(s)	Details of the changes
List **ALL** courses (including those of General Education) based on their categories as appearing in the program structure of the former program.	X (x-x-x)	List **ALL** courses (including those of General Education) based on their categories as appearing in the program structure of the revised program.	X (x-x-x)	Clearly specify the changes, such as: o Adjust course codes o Change / Edit the Thai/English course name. o Increase/Reduce the number of credits/credit hours o Revisie course descriptions. o Adjust/cancel prerequisite courses and co-requisite courses o Open new courses.
List courses which are available to students outside of the former program. (If any)	X (x-x-x)	List courses which are available to students outside of the revised program. (If any)	X (x-x-x)	

The Former Program B.E. 25.....	Credit(s)	The Revised Program B.E. 25.....	Credit(s)	Details of the changes
				o Cancel unnecessary courses. o Move courses to different categories (XXXxxx) etc. If there is no change available, please specify the word "No change"
DT130 Project Introduction (การทำโครงงานเบื้องต้น)	3 (0-6-6)	DT130 Project Introduction (การทำโครงงานเบื้องต้น)	4 (0-8-4)	- Increase the number of credits. - Move to the course category No. B.5) Project and Fieldwork Experience.
INA 211 Color, Materials and Presentation (สี วัสดุและการแสดงภาพทางสถาปัตยกรรมภายใน)	3 (1-4-6)	INA 21101 Introduction of Color Theory and Usability (ความรู้เบื้องต้นเกี่ยวกับทฤษฎีและการใช้งานสี)	1 (1-0-2)	- Revise/Update the course content and improve the teaching and learning approaches.
		INA 21102 Introduction of Material Theory and Usability (ความรู้เบื้องต้นเกี่ยวกับทฤษฎีและการใช้งานวัสดุทางสถาปัตยกรรมภายใน)	1 (0-2-2)	
		INA 21103 Color and Material Application in Interior Architecture (การประยุกต์ใช้สีและวัสดุในงานสถาปัตยกรรมภายใน)	1 (0-2-2)	