Please note that after you have downloaded this TQF2 Form, delete all the green-framed content before submitting the TQF2 draft to the University for consideration.

**TQF 2 Programme Specification**

The Programme Specification is an overview of programme arrangements, teaching and learning approaches that will enable graduates to achieve a programme’s expected learning outcomes specified in the National Higher Education Qualifications Framework and Standards of qualifications in each field of study. Each higher education institute can freely include additional courses other than those specified if it is appropriate to the needs or the identity of the institution. The lecturers must work together to plan and prepare the details of the programme.

The Programme Specification explains to students the courses they need to study, understand the teaching and learning approaches as well as assessment methods to ensure students that upon successful completion of the programme, they will meet all expected learning outcome standards set forth in the programme. It also shows the relationship of the course with the elements of study leading to the qualifications set forth in the qualification standard. The Programme Specification helps students choose a programme that best fits their learning style and needs. Moreover, prospective employers can use the information for recruitment purposes.



Programme Title: …………………………………………………………

Field of study ……………………………………………………………

(Multidisciplinary Programme) or (Interdisciplinary Programme)

Choose only one, …. characteristics as specified in Section 2, item 1.2.

(International Programme) or (English Programme)

Choose only one, ….

**(5-Year Programme)**

New Programme or Revision …………………… B.E…………..

Choose only one, ….

**Content**

**Section 1 General Information**

1. Programme code and title
2. Degree title and field of study
3. Major
4. Required credits for graduation
5. Programme format
6. Programme status and programme permission/approval
7. Expected date for the implementation of the programme
8. Career Opportunities after Graduation
9. Name, Academic Position, and Qualifications of lecturers in charge of the programme
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**Appendices**

|  |  |
| --- | --- |
| **Appendix A** | Executive Summary |
| **Appendix B1**  | Course Descriptions and Course Learning Outcomes  |
| **Appendix B2** | Table showing the comparison of the old and the revised programmes  |
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| **Appendix C** | Details of the lecturers in-charge of the programme, full-time lecturers, and guest lecturers |
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| **Appendix E** | KMUTT Regulations on Undergraduate Studies of the Year …. and the affiliation’s educational announcements/regulations |
| **Appendix F**  | MOUs made between domestic and foreign organizations (if any) |

**Programme Specification**

Programme of Study…………………………………………………

 Field of Study …………………………………………….………

New programme or revised programme of academic year ......................

Name of Institution King Mongkut’s University of Technology Thonburi

Faculty/Department ……………………………………………………………………

**Section 1 General Information**

**1. Programme code and title**

1.1 Code ……………… (Specify 14 digits in CHECO system) …………………………...

1.2 Name of the Programme

(in Thai): …………………………........................................................................................

 (in English): …………………………...................................................................................

**2. Degree Offered and Field of Study**

 2.1 Full title:

(in Thai): …………………………........................................................................................

 (in English): …………………………...................................................................................

2.2 Abbreviation

(in Thai): …………………………........................................................................................

 (in English): …………………………...................................................................................

**3. Major/Field of Study (if any)**

**NOTE:** To be considered as a major, there must be a minimum of 30 credits and graduate programmes will not specify a major because the number of credits cannot be a major by the graduate programme, if there is a separate study group, please specify it as a field instead.

**4. Total Credits Required**

 ………………………….. credits

Please specify in accordance with the study plan as shown in the example below:

Plan A1 36 credits

Plan B 36 credits

**5. Programme Format**

5.1 Degree Level: Bachelor’s, Master’s, Doctoral Degree

Specify the format of the programme if it is offered as a qualification programme according to the 2009 National Qualifications Framework for Higher Education.

\*\*\*Type of programme ………………… (Only bachelor’s degree programme) \*\*\*

**Specify the type of course.**

1) Academic Bachelor's Degree Programme – It is a programme that aims to produce graduates with knowledge of both the theoretical and practical with the emphasis on academic knowledge and skills and the ability to apply knowledge creatively in real-life situations.

2) Academic Progression Bachelor's Programme – It is a bachelor's degree programme for people with special abilities, which focuses on producing graduates with high level knowledge by using the regular programme that is already being taught to support the potential of students by requiring students to study certain courses at the graduate level and encourage students to conduct in-depth research.

3) A Professional or Practical Bachelor's Degree Programme – It is a programme that aims to produce graduates with knowledge, both theoretical and practical, emphasizing knowledge, competence and professional skills in accordance with the requirements of professional standards or have competence and practical technical skills in that field of science through an internship in an enterprise or cooperative education. The programme can be organized as a bachelor's degree (continuing programme) because it aims to produce graduates who already have operational skills to have more academic knowledge, including receiving more advanced treatment. The bachelor's degree programme (continuing programme) is deemed to be part of the bachelor's degree programme. and must fully reflect the philosophy and content of that bachelor's degree.

4) Professional or Practical Progression Bachelor's Degree Programme – It is a programme for people with special abilities, which focuses on producing graduates with advanced knowledge and professional competence using regular courses that are already being taught to support the potential of students by requiring students to study certain courses at the graduate and conducting in-depth research or receiving advanced training in organizations, organizations or establishments.

NOTE:

* A vocational or operational bachelor’s degree; only one can be selected.
* Professional Bachelor's Degree Programme must be a course that requires a license from a professional organization such as the Council of Engineers, the Architect Council, the Teachers Council of Thailand, etc.
* For Practical Bachelor, at least 36 credits of practical courses and not less than 24 credits in theory (counting practical courses in specific subjects only, e.g., 3 (0-3-6) and not counting practical and theoretical courses such as 3(3-2-6) etc.)
* An academic or professional Progression Bachelor's Degree Programme degree must complete at least 12 credits of graduate studies.

Must choose a vocational or operational bachelor’s degree.

5.3 Language Thai/English

Specify which language is used as medium of instruction: Thai or foreign language.

Note: If the course is a normal programme, but the course is taught in both Thai and a foreign language (English), specify Thai as medium of instruction but there may be textbooks in English for some courses.

5.4 Admission

Specify whether the admission of students to study in the programme is for Thai or foreign students only or accepting both groups to study. For example, in the case of a normal programme that accepts both groups of students, indicate that they accept Thai students and international students who can speak Thai, etc.).

5.5 Collaboration with Other institutions

 5.5.1 Collaborations with MOU…………………………….

5.5.2 Collaborations without MOU

Indicate that it is a specific programme of an institution that provides direct teaching or a programme in cooperation with ………… (other educational institutions/organizations) by specifying the name of the institution/organization that cooperates. For cooperation with educational institutions/other agencies in foreign countries, it must be in accordance with the Ministry of Education's Notification Guidelines for Academic Cooperation Agreements between Thai Higher Education Institutions and Foreign Higher Education Institutions B.E. 2550. The MOU must not be invalid.

5.6 Degree Offered

Indicates that only one degree is awarded, or more than one degree is awarded (in the case of a dual degree) or other degrees in the middle of the programme or it is a joint degree between a higher education institution and a higher education institution that has a cooperation agreement.

**6. Programme status and programme permission/approval**

 □ New programme Instruction begins in……….*(month)*…… B.E……………

 Semester ……………. Academic Year ……………………

 □ Revision programme Instruction begins in……….*(month)*…… B.E…………

 Semester ……………. Academic Year ………………

* The programme was initially established in \_\_\_\_\_\_\_\_\_\_\_\_\_ (specify the year it was started)
* The programme has been revised from the previous version of academic year \_\_\_\_\_\_, and will be applied in semester \_\_\_\_\_ of the academic year \_\_\_\_\_\_\_\_.

The University Academic Committee granted programme approval at Meeting No. …….../………... Date ………………………… Month………………… B.E.

The University Council granted programme permission at Meeting No. …….../………...

Date ………………………… Month………………… B.E. ……………….

Specify the month and year of the programme commencement for the Academic Council and the University Council consideration. The University will add the information again after the programme has been approved by the University Council.

**7. Expected date for the implementation of programme**

The programme is ready to be publicly disseminated its excellence and standardization based on:

□ Thai QF for Higher Education (TQF) B.E. 2552 (without TQF)

□ Undergraduate qualifications branch........(field of study as stated in TQF 1)........

 25xx (with TQF1) in the academic year .............

The publishing period should be half the duration of the programme of study (referring to the beginning of the school year).

For programme revision starting 1/2565, specify "the academic year in which the programme is ready to be disseminated” as follows:

* Bachelor's degree 4-year programme = academic year 2024, or 5-year programme = academic year 2025
* Master's degree programme 2 years = academic year 2023
* Doctoral degree course 3-5 years = academic year 2024

***Sample***

Without TQF 1, the curriculum is ready to be publicly disseminated as a programme and in accordance with National Qualifications Framework for Higher Education 2009 in the academic year 2023.

With TQF 1 (Engineering Major), the curriculum is ready to be publicly disseminated as a programme which attains the quality and standards in accordance with bachelor’s qualifications in Engineering, 2010, in the academic year 2024.

**8. Career Opportunities after Graduation**

1. …………………………………………………………………………………………
2. …………………………………………………………………………………………
3. …………………………………………………………………………………………

Careers that can be pursued after graduation must be consistent with the objectives of the programme and should be the main prospective profession that the programme aims for.

**9. Name, Academic Position, and Qualifications of lecturers in charge of the programme**

|  |  |
| --- | --- |
| No. | Name-Surname |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |

Lecturer in charge of the programme must meet the following programme standards:

* Five lecturers for a Bachelor’s Degree Programme and if there are majors in the programme, there must be at least three lecturers in charge of each major with a minimum of a Master's degree or equivalent or hold the position of Asst. Prof. and must have at least one academic achievement in the past 5 years.
* At least three lecturers for a Master’s degree, holding a doctoral degree or equivalent or at least a master's degree or equivalent with the position of Assoc. Prof. and having at least three academic works in the past five years, and at least 1 item must be a research project.
* At least three lectures for a Doctoral degree, holding doctoral qualifications or equivalent or at least a master's degree or equivalent with the position of Prof. and having at least three academic achievements in the past five years, and at least one item must be research.

**Note:** In the case of graduating abroad, use AD and B.E. for graduating in Thailand.

\*\* A lecturer may not be responsible for more than one programme at the same time, except for multidisciplinary or interdisciplinary studies in which an instructor can be responsible for more than one programme but this must not exceed two in each programme.

**Definition of a multidisciplinary or interdisciplinary Programme**

The multidisciplinary and interdisciplinary programme is the application of knowledge from various disciplines, sciences or subspecialties that can be combined for the analysis. Research and synthesize new knowledge and develop into a new science. Therefore, the multidisciplinary programme is a method in which knowledge of multiple disciplines or subspecialties are applied in teaching for the benefit of analysis and research, so learners can develop their new body of knowledge or new sub-science. In addition, the University Council or the Institute Council has approved it for multidisciplinary and interdisciplinary programme before presenting to the office for acknowledgment, so the Office can consider whether it is a multi-disciplinary programme or an interdisciplinary programme as proposed by a higher education institution to the Bureau of Standards presented to the Subcommittee on Higher Education Framework for consideration.

However, if the programme wishes to be multi-disciplinary or interdisciplinary, please describe the application of knowledge in multiple disciplines or subspecialties as combined in the design of the aforementioned programme in Section 2, Item 1, Philosophy, Significance, Programme Objectives and Programme Learning Outcomes.

**10. Study Site** ………………………. King Mongkut’s University Technology Thonburi

A Programme that has cooperation with other institutions and other additional teaching locations may be specified by mutual agreement.

**11. External situation and/or Development Considered in Programme Planning**

11.1 Economic Circumstances/Development

………………………………………………………………………………………………

11.2 Social and Cultural Circumstances/Development

………………………………………………………………………………………………

Demonstrate an overall analysis of the situation or need that affects the programme at the macro level, including demographics, economic, social, cultural, technological, political, policy or legal conditions in order to look for opportunities or obstacles from the external environment as well as the potential impact of these factors that will affect this programme.

**12. The effects mentioned in nos. 11.1 and 11.2 on programme development and their relevance to the mission of the university.**

 12.1 Programme Development

………………………………………………………………………………………………………

 12.2 Related Institutional Missions

………………………………………………………………………………………………………

In what areas does the programme clearly support the university's strategic plan? Specify the name of the strategy, sub-strategy, its goals, and the strategy's operational guidelines, and describe the links between Programme Learning Outcomes (PLOs) as being consistent with the vision and mission and desirable characteristics of KMUTT graduates (KMUTT Student QF).

**13.** **Cooperation to other programmes offered by other Faculties/Departments in the Institution**

13.1 Groups of subjects/courses in this programme offered by other faculties/departments/courses

………………………………………………………………………………………………………

Sample:

Number of courses……………………………..

1. Faculty ………………………………….. Number of courses…………………………….. as follows:

2. Faculty ………………………………….. Number of courses…………………………….. as follows:

13.2 Groups of courses /courses in the programme that are offered for other departments/courses to study.

Sample:

Number of courses……………………………. as follows:

13.3 Programme Management

Explain management plans for cooperation or coordination with other relevant departments. For example, is this a programme that students in other programmes can study? If so, what steps will be taken to ensure that the programme meets the needs of students in other courses?

1. The faculty appoints the members of the Programme Management Committee. This should consist of lecturers who are responsible for the programme.
2. The Programme Management Committee appoints a programme coordinator.
3. Follow up and evaluate every academic year.

**Section 2 Programme Specification**

1. Philosophy, Significance, and Objectives of the Programme

1.1 Programme Philosophy

………………………………………………………………………………………………………

1.2 Significance of the Programme

………………………………………………………………………………………………………

1.3 Objectives of the Programme

………………………………………………………………………………………………………

Identify the philosophy, significance, and objectives of this programme (What is this course for? Why should there be this course?) in accordance with the philosophy of higher education. What is the institution's philosophy and academic/professional standards or how to produce graduates with the desired characteristics and knowledge? The philosophy should be the belief towards the teaching and learning management of the programme.

For Multidisciplinary or Interdisciplinary Programme, identify how to bring knowledge form multiple disciplines or sub-disciplines to use in teaching for the benefit of analysis and research, so learners can develop their new body of knowledge or new sub-science.

Examples of courses that are multidisciplinary are biomedical engineering (Engineering + Medicine), Geographic Information (Geography + Information Technology), and Nano Engineering (Engineering + Chemical Science).

Examples of non-multidisciplinary courses are Business Computing Development education *(*Source: Subcommittee on the Improvement of Higher Education Programme Standards in the meeting No. 7/2006 on October 18, 2006).

By requesting the programme to be summarized in Section 2, Item 1.2, the significance of the programme, it must be proposed to the University Council to approve it as a multi-disciplinary or interdisciplinary programme and the course must be presented to the OHEC for acknowledgment before recording the programme in the CHECO system. If OPS considers that it is not a multi-disciplinary programme or an interdisciplinary programme as proposed by a higher education institution, the programme must be proposed to the Subcommittee on Higher Education Standards for consideration.

1.4 Programme–level Learning Outcomes: PLOs

PLO1 ……………………………………………………………………………………………….

 SubPLO1A …………………………………………………………………………………

SubPLO1B …………………………………………………………………………………

PLO2 ……………………………………………………………………………………………….

 SubPLO2A …………………………………………………………………………………

SubPLO2B …………………………………………………………………………………

PLO3 ……………………………………………………………………………………………….

 SubPLO3A …………………………………………………………………………………

SubPLO3B …………………………………………………………………………………

PLO4 ……………………………………………………………………………………………….

Programme Learning Outcome (PLOs), see the Executive Summary Section 2.3 for recommendations.

PLO5 ……………………………………………………………………………………………….

1.5 Stage -LOs or Year-LOs (Choose only one)

Stage-LO1 ………………………………………………………………………….

Period of Assessment …………………………………………………….

Methods of Assessment …………………………………………………….

Rubrics of Assessment ………………………………………………………….

Stage-LO2 ………………………………………………………………………….

Period of Assessment …………………………………………………………….

Methods of Assessment ………………………………………………………….

Rubrics of Assessment ………………………………………………………….

Stage-LOs or Year-LOs, see the Executive Summary Section 3.2 for recommendations.

2. Programme development plan

|  |  |  |
| --- | --- | --- |
| **Improvement/Modification Plan** | **Strategy** | **Evidence/Indicators** |
|  |  |  |
|  |  |  |

Identify topics that will be developed/improved in the programme in five years by specifying strategies for implementation and evidence of outcome-oriented indicators for students in the programme. For strategies related to lecturers or support staff, go to Section 6, Teacher development

For example:

* Improve the programme according to the standards of the National Institute of Development Administration, other standards and OBE.
* Revise the courses or PLOs to meet the needs and changes of business/industry.
* Promote learning management to achieve PLOs.

**Section 3 Educational Management System, Programme Implementation and Structure**

1. Educational Management System

1.1 System

A bi-semester system is used where one academic year is divided into two regular semesters and one regular semester has a duration of not less than 15 weeks.

1.2 Summer (special) semester

If there is a special semester, please specify how many weeks per semester the duration is of teaching and learning management. This must be related to the study plan in Section 3, Item 3.1.4., including the study plan as well.

For example:

There is a special education semester of one semester in the third year, each semester is 6-8 weeks or 480 hours/semester.

1.3 Credit Equivalence Ratio (In Reference to Semester System)

 N/A

2. Programme implementation

 2.1 Academic Calendar

Please specify clearly the date and time of the course and specify the semester that is open for all semesters with the month starting teaching and the month ending teaching clearly as follows:

For example:

* On normal business hours (Monday - Friday, 08.30 – 16.30)
* Outside office hours (Monday - Friday from 18.00 - 20.00 and Saturday - Sunday from 09.00 - 18.00)

However, the date and time for teaching and learning are subject to change as appropriate.

Academic calendar

* Semester 1 is from August – December.
* Semester 2 is from January – May.
* Special semester is from June - August (if applicable)

2.2 Admission Requirements

1. ……………………………………………………………………………………………
2. ……………………………………………………………………………………………
3. ……………………………………………………………………………………………

NOTE: For Doctoral programme students, English language test scores must be in accordance with the Announcement of King Mongkut's University of Technology Thonburi Subject: English Language Score Criteria for Doctoral Students B.E. 2021, subject to change depending on the announcement of King Mongkut's University of Technology Thonburi.

Specify the qualifications of students in the programme that correspond to the educational level according to the higher education framework approved by the OCSC such as having completed a high school education. For undergraduate programmes, if additional eligibility criteria are required, they must be fully and clearly stated.

 2.3 Problems of incoming students and 2.4 Strategies for solving the problems/constraints of students in Item 2.3

Identify the problem characteristics of students enrolled in the programme and identify strategies or methods of action to correct them. (Every problem must have a solution.) For example, students with limited IT skills or language, math, or adaptation to learning, etc.

|  |  |
| --- | --- |
| Problems of incoming students | Problem solving strategies |
| (1) ……………………(2) …………………(3) ………………… | (1) …………………(2) …………………(3) ………………… |

2.5 A Five-year Plan for Admission and Graduation

If there are multiple study plans, must separate the number of student enrollment plans for every study plan.

For example:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Details** | **2565** | **2566** | **2567** | **2568** | **2569** |
| **1.1 Master’s degree Greduates** |
| Year 1 | 2 | 2 | 2 | 2 | 2 |
| Year 2 | - | 2 | 2 | 2 | 2 |
| Year 3 | - | - | 2 | 2 | 2 |
| Total | 2 | 4 | 6 | 6 | 6 |
| **2.1 Master’s degree Greduates** |
| 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 study plans** | 4 | 8 | 12 | 12 | 12 |
| **Expected number of graduates**  | - | - | 4 | 4 | 4 |

**2.6 Planned Budget**

|  |
| --- |
| **1.1 Master’s degree Greduates** |
| Tuition Fee | 16,000 baht/person/semester | 32,000 | baht/person/semester |
| Credit fee | 1,800 baht/credit | 42,300 | baht/person/semester |
| Total fee | 74,300 | baht/person/semester |
|  Expenditures throughout the programme | 148,600 | baht/person |
| **2.1 Master’s degree Greduates** |
| Tuition Fee | 16,000 baht/person/semester | 32,000 | baht/person/semester |
| Credit fee | 1,800 baht/credit | 42,300 | baht/person/semester |
| Total fee | 74,300 | baht/person/semester |
|  Expenditures throughout the programme | 148,600 | baht/person |

2.6.1 Revenue Budget (Baht)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Revenue Budget** | **unit** | **2565** | **2566** | **2567** | **2568** | **2569** |
| Tuition fee | Baht/year | 480,000 | 1,920,000 | 1,920,000 | 1,920,000 | 1,920,000 |
| Credit fee | Baht/year | 634,500 | 2,538,000 | 2,538,000 | 2,538,000 | 2,538,000 |
| External fundings | Baht/year | 600,000 | 1,200,000 | 1,200,000 | 1,200,000 | 1,200,000 |
| Teaching and Research funding |  | 1,070,000 | 1,070,000 | 1,070,000 | 1,070,000 | 1,070,000 |
|  Total |  | 2,784,500 | 6,728,000 | 6,728,000 | 6,728,000 | 6,728,000 |

2.6.2 Expenditure (Baht)

|  |  |
| --- | --- |
| **Expenditure** | **Fiscal Year** |
| **2565** | **2566** | **2567** | **2568** | **2569** |
|  **1. Personal Expenditure** | **1,719,900** | **3,646,188** | **3,864,959** | **4,096,857** | **4,342,668** |
|  Salary | 1,365,000 | 2,893,800 | 3,067,428 | 3,251,474 | 3,446,562 |
|  Welfare benefit 26% | 354,900 | 752,388 | 797,531 | 845,383 | 896,106 |
|  **2. Administrative Expenditure** | **198,750** | **832,500** | **832,500** | **832,500** | **832,500** |
|  2.1 compensation | 33,750 | 157,500 | 157,500 | 157,500 | 157,500 |
|  2.2 unitization  | 45,000 | 195,000 | 195,000 | 195,000 | 195,000 |
|  2.3 materials and supplies | 45,000 | 180,000 | 180,000 | 180,000 | 180,000 |
|  2.4 utilities | 75,000 | 300,000 | 300,000 | 300,000 | 300,000 |
|  **3. Funding from university** | **450,000** | **1,800,000** | **1,800,000** | **1,800,000** | **1,800,000** |
|  **4. investment** | **100,000** | **50,000** | **50,000** | **50,000** | **50,000** |
| **Total** | **2,468,650** | **6,328,688** | **6,547,459** | **6,779,357** | **7,025,168** |
| Total expenditure per student | 82,288 | 105,478 | 109,124 | 112,989 | 117,086 |
|   | **105,393** |

**Note: Tuition fee rate is subject to the announcement of the university in each academic year.**

Article 2.5 and Article 2.6 as required by the Academic Council at the meeting No. 1/2012 (23 January 2012) when it was resolved to entrust the Strategic Office to analyze data on programme budgets before submitting to the university for consideration.

When the course is reviewed by the faculty committee finished The Faculty shall submit the course details to the Strategic Office for analysis of the programme budget. The information in TQF 2 is consistent with the analysis of the Strategic Office.

**2.7 Academic System**

The education system is classroom-based and/or using electronic media.

To allow flexibility in teaching and learning to accommodate future changes.

**2.8 Credit Transfer and Cross-institutional Enrollment (if any)**

 All transfers will be in accordance with the regulations of King Mongkut's University of Technology Thonburi on Bachelor's Degree 2014 or Graduate School Year 2019, subject to change depending on the announcement of King Mongkut's University of Technology Thonburi.

**3. Programme and lecturers**

3.1 Programme

3.1.1 The required number of credits in total must not be less than ………. credits.

3.1.2 Programme Structure of

 ……………………………………………………………… credits

……………………………………………………………… credits

……………………………………………………………… credits

Must be in accordance with the standards of the Programme of 2015 as follows:

- Undergraduate degree consists of:

1. General education courses not less than 30 credits
2. Specific courses, not less than 72 credits, and
3. Free elective courses, not less than 6 credits, and

The total number of credits must be at least 120 credits.

- Master level, the total number of credits is not less than 36 credits, divided into

* Plan A.1 Thesis is at least 36 credits (additional courses can be taken without credit)
* Plan A.2 Thesis is not less than 12 credits and coursework are not less than 12 credits.
* Plan B. Study of coursework without thesis but there must be at least independent research with 3 credits and no more than 6 credits

- Doctoral degree, divided into

* Form 1.1 Applicants who have completed a master's degree. Thesis is not less than 48 credits.
* Form 1.2 Students who have completed a bachelor's degree. Thesis is not less than 72 credits.
* Form 2.1 Students with a master’s degree. Thesis is not less than 36 credits and coursework are not less than 12 credits.
* Form 2.2 Applicants who have completed a bachelor's degree. Thesis is not less than 48 credits and coursework are not less than 24 credits.

And in the case of a programme with TQF 1, the programme structure must be in accordance with TQF 1 or professional criteria such as the Teachers Council of Thailand, and the Council of Engineers (if any).

**3.1.3 Courses**

The course code consists of three digits of letters and numbers and has the following meanings:

Letter Code:

 GEN means courses in General Education

 LNG means courses in Language and Communication

 XXX means ………………………………………….

Number Code: Enter only the XXX letter code of this course

The third digit indicates the level of the courses

Numbers 1-4 indicate undergraduate courses

Number 5 indicates graduate courses but undergraduate students can choose to study.

Number 6 and above indicates graduate level courses

The second digit indicates a group of courses

Number 0 indicates a group of courses …………….……………….

Number 1 indicates a group of courses …………….……………….

Number 2 indicates a group of courses …………….……………….

Number 3 indicates a group of courses …………….……………….

Number 4 indicates a group of courses …………….……………….

Number 5 indicates a group of courses …………….……………….

Number 6 indicates a group of courses …………….……………….

Number 7 indicates a group of courses …………….……………….

Number 8 indicates a group of courses …………….……………….

Number 9 indicates a group of courses …………….……………….

The third digit means the order of courses.

For undergraduate programme, the general education course structure can be downloaded at the website of the Office of Education and Service Development. https://sites.google.com/mail.kmutt.ac.th/programme-edskmutt

Course lists

A. Courses (based on Programme Structure) …………. Credits

 XXX xxx ……….Thai name……………… x(x-x-x)

 (………English name............…..)

 XXX xxx ……….Thai name……………… x(x-x-x)

 (………English name............…..)

 XXX xxx ……….Thai name……………… x(x-x-x)

 (………English name............…..)

3.1.4 Study Plan

 Year …. Semester ……

 XXX xxx ……….Thai name……………… x(x-x-x)

 (………English name............…..)

 XXX xxx ……….Thai name……………… x(x-x-x)

 (………English name............…..)

Total x(x-x-x)

Hour/Week = x

3.2 Name, Surname, Academic Position, Qualifications of lecturers

3.2.1 The programme lecturers in-charge (a list of lecturers who are responsible for the course in Section 1, Item 9.)

Full-time programme lecturers must meet the following programme standards:

* Undergraduate
1. Master's degree or equivalent or holding an academic position not lower than Assistant Professor in the field that corresponds to or is related to the field of study.
2. At least one academic achievement in the past 5 years.
* Master level minimum qualification is a master’s degree or equivalent with at least three academic works in the past five years, at least one of which must be research results.
* Ph.D. minimum qualification is a Ph.D. or equivalent or a minimum of a master's degree or equivalent with the rank of associate professor or above with at least three academic works in the past five years, at least one of which must be research results.

Note: In the case of graduating abroad, use AD and B.E. for graduating in Thailand.

Teaching workload in this programme must be specified before the schedule of teaching in the past one year in order to see the relationship of teaching workload of full-time lecturers before and after becoming full-time lecturers in this programme. This must be related to lecturers’ CV in the appendix.

|  |  |  |
| --- | --- | --- |
| No. | Name-Surname | Teaching Loads in this course(Number of hours/weeks/academic year) |
| 1 |  | Now | When the programme started |
| 2 |  |  |  |
| 3 |  |  |  |

**3.2.2 Full-time teacher**

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Name-Surname | Educational qualification (field of study), institution of graduation, country of graduation (year of graduation) | Teaching Loads in this course(Number of hours/weeks/academic year) |
| Now | When the programme started |
| 1 |  |  |  |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |

Full-time lectures must meet the following programme standards:

* Bachelor’s Degree
1. Master's degree or equivalent or holding an academic position not lower than Assistant Professor in that field or related fields or the discipline of the course taught.
2. If he/she is an instructor before this criterion is promulgated, he/she may apply for a bachelor's degree.
* Master's Degree
1. Master's degree or equivalent in that field or related fields or the discipline of the course taught
2. Must have teaching experience and have at least one academic achievement in the past five years.
* Doctoral Degree

Ph.D.

1. A doctoral degree or equivalent or a minimum of a master's degree or equivalent with the rank of associate professor in that field or related fields or the discipline of the course taught.
2. Must have teaching experience with at least one academic achievement in the past five years.

Note: In the case of graduating abroad, use AD and B.E. for graduating in Thailand.

3.2.3 Guest lecturers

All special instructor CVs must be attached in the appendix.

Guest lecturers must meet the following programme standards:

**Bachelor’s degree**

1. Master's degree qualifications or a bachelor's degree or equivalent; and
2. At least 6 years of working experience related to the subject taught
3. Teaching hours are not more than 50 percent of the course, with a full-time teacher responsible for the course.

**Master's degree**

1. Master's degree or equivalent in that field of study or related fields or the discipline of the course taught
2. Work experience related to the subject taught and have at least one academic achievement in the past 5 years.
3. Teaching hours are not more than 50 percent of the course, with a full-time instructor responsible for that course.

**Doctoral Degree**

1. A doctoral degree or equivalent or a minimum of a master's degree or equivalent with the rank of associate professor. in that field or related fields or the discipline of the course taught
2. Work experience related to the subject taught and have at least one academic achievement in the past 5 years.
3. Teaching hours are not more than 50 percent of the course, with a full-time instructor responsible for that course.

Note: In the case of graduating abroad, use A.D. and B.E. for graduating in Thailand.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. | Name-Surname | Affiliations | Expertise | Course taught in the programme |
|  |  |  |  |  |
|  |  |  |  |  |

4. Component of field experience (internship or co-operative education) (if any)

4.1 Learning outcomes of field experience

………………………………………………………………………………………………………

4.2 Duration

 Semester ………………….. Academic year…………………

4.3 Schedule and Timetable

List important items of the desired field experience learning outcomes. The learning outcomes of the field experience must be consistent with the CLOs of the field experience course specified in Appendix A Course Description.

…………Days per week; Weeks or full-time in…………………….. Semester

4.4 Preparation

……………………………………………………………………………………………………..

Briefly describe the preparation of academic advice and assistance to students.

4.5 Assessment Process

……………………………………………………………………………………………………..

Explain the evaluation process including a mechanism for verifying standards.

5. Requirements for Project or Research Work (if any)

5.1 Brief Description

 ……………………………………………………………………………………………..………

5.2 Research Learning Outcome

……………………………………………………………………………………………..………

Brief information about the requirements for the project or thesis. In addition to projects or research in other subjects. Requirements for the project.

5.3 Duration

5.4 Number of Credits

5.5 Preparation

Briefly describe the preparation of academic advice and assistance to students.

5.6 Assessment Process

…………………………………………………………………………………………..…………

Explain assessment process, including a mechanism for standard verification.

**Section 4 Programme Learning Outcomes, Teaching and Learning Approaches, and Assessment Methods**

1. Student preparation plan to achieve the expected learning outcomes
2. Formulating learning outcomes at the programme level for each item

|  |  |  |
| --- | --- | --- |
| **Learning outcomes**  | **Teaching and Learning Approaches** | **Assessment Strategies** |
| PLO 1:  |  |  |
| Sub PLO1A:  |  |  |
| Sub PLO1B:  |  |  |

Identify teaching strategies that will develop knowledge and skills specified in the learning outcomes. Assessment and evaluation method should be aligned with the learning outcomes specified by the programme. All explanation should be expressed as evidence-based (expressive and measurable behavior). The programme can refer to the Executive Summary, Section 3.1.

3. Curriculum mapping

3.1 PLOs curriculum mapping

The programme shall specify the courses according to Section 3, Item 3.1.4 Study plan by specifying the level of learning outcomes (Level) that are numbers or letters.

Undergraduate programmes, please add curriculum mapping for all general education courses.

| **Course** | **PLO 1** | **PLO 2** | **PLO 3** | **PLO 4** |
| --- | --- | --- | --- | --- |
| **1A** | **1B** | **1C** | **2A** | **2B** | **3A** | **3B** | **4A** | **4B** |
| **Academic Year 1 Semester 1** |  |  |  |  |  |  |  |  |  |
| XXX xxx …………………………………. | 1 |  |  |  | 1 |  | 1 |  |  |
| XXX xxx …………………………………. |  | 2 |  |  |  | 1 |  | 1 |  |
| **Academic Year 1 Semester 2** |  |  |  |  |  |  |  |  |  |
| XXX xxx …………………………………. |  |  | 2 | 1 |  |  |  |  | 1 |
| XXX xxx …………………………………. |  |  | 2 |  |  | 2 |  |  |  |
| **Academic Year 2 Semester 1** |  |  |  |  |  |  |  |  |  |
| XXX xxx …………………………………. |  | 3 |  |  |  |  |  |  |  |
| XXX xxx …………………………………. |  |  | 3 | 3 |  |  |  |  |  |
| **Academic Year 2 Semester 2** |  |  |  |  |  |  |  |  |  |
| XXX xxx …………………………………. | 3 |  |  |  | 3 |  |  | 3 |  |
| XXX xxx …………………………………. |  |  |  |  |  | 3 |  |  |  |
| **Elective courses** |  |  |  |  |  |  |  |  |  |
| XXX xxx …………………………………. |  |  |  |  |  |  |  |  |  |
| XXX xxx …………………………………. |  |  |  |  |  |  |  |  |  |
| XXX xxx …………………………………. |  |  |  |  |  |  |  |  |  |
| XXX xxx …………………………………. |  |  |  |  |  |  |  |  |  |

The relationship between the programme learning outcomes and the course in addition to demonstrating coherence of a lesson, course set, course, etc. in a programme, the correlation of learning outcomes formulated in a hierarchy to indicate the importance and necessity of the lesson.

**NOTE:** Undergraduate Programmes CLO Fundamentals of Science and Engineering Courses and Programme Mapping of General Education Courses can be downloaded from the website. <https://sites.google.com/mail.kmutt.ac.th/programme-edskmutt>

3.2 Table showing the relationship between programme learning outcomes (PLOs) and KMUTT Student QF and learning outcomes in five domains of TQF.

**3.2 The table shows the relationship between PLOs and KMUTT Student QF and 5 Domains of TQF**

| Programme Learning Outcomes | KMUTT Student QF | TQF Learning Outcomes |
| --- | --- | --- |
| KMUTT’s Citizenship | Knowledge | Professional | Thinking skill | Learning skill | Management | Communication | Leadership | 1. Ethical and Moral Development | 2. Knowledge | 3. Cognitive Skills | 4. Interpersonal Skills and Responsibility | 5. Analytical and Communication Skills, Mathematics and IT Application |
|   |   | Responsibility | Adaptability | Humanization | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 | 1 | 2 | 3 | 4 | 5 |
| PLO 1: | .............................. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sub PLO 1A | …………………………… |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sub PLO 1B | …………………………… |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PLO 2: | .............................. |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sub PLO 1A | …………………………… |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sub PLO 1B | …………………………… |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Note

1. Each PLO must be aligned with the TQF in at least the first three domains.
2. The overall PLOs must have all the sub-items in the TQF (five domains).

3. TQF Learning Outcomes TQF (five domains), each sub-item of each domain should be adjusted according to TQF 1 and/or at Programme level.

Meaning of learning outcomes in the five areas of TQF.

Definitions of Learning Outcomes based on the Higher Education Qualifications Framework can be downloaded from the website of the Office of Education and Service Development at <https://sites.google.com/mail.kmutt.ac.th/curriculum-edskmutt>

TQF 1 Engineering

TQF 1 Computer

TQF 1 Science

TQF 1 Education

TQF 1 Technology

Learning outcomes in five domains for the Bachelor’s degree

Learning outcomes in five domains for the Master's degree

Learning outcomes in five domains for Doctoral qualifications

For more information about TQF 1: <http://www.mua.go.th/users/tqf-hed/news/news6.php>.

**Sample from TQF1 Engineering (only bachelor’s):**

After completing the programme, the students will achieve five domains in the following areas of performance:

**Moral and Ethics Development**

**Students should**

1.1 understand and appreciate Thai culture; recognize the values ​​of the system of morality, ethics, sacrifice and honesty.

1.2 behave in an orderly manner, be punctual and responsible to self and society, respect rules and regulations of the organization and society.

1.3 have leadership and followership quality; be able to work in groups, can resolve conflicts in order of importance; respect the rights and listen to the opinions of others as well as respect the values ​​and dignity of human beings.

1.4 be able to analyze and assess the impact of the application of engineering on individuals, organizations, society and the environment.

1.5 have academic and professional ethics and have responsibilities as a professional, including understanding the social context of the engineering profession in each field from the past to the present.

**Knowledge**

**Students should**

2.1 have knowledge and understanding of basic mathematics, basic science, basic engineering and economics for application in engineering related work and creating technological innovations.

2.2 have knowledge and understanding of important principles both theoretical and practical in the content of special engineering disciplines.

2.3. be able to integrate knowledge in the field of study with knowledge in other related sciences.

2.4. be able to analyze and solve problems with the proper method, including the application of suitable tools such as computer programs, etc.

2.5. be able to use knowledge and skills in their field in solve problems in real work.

**Cognitive Skills**

**Students should**

3.1. have good judgment.

3.2. be able to collect, study, analyze and summarize issues and needs.

3.3. be able to think, analyze and solve engineering problems systematically, including the use of information to make decisions in working effectively.

3.4. be imaginative and flexible to apply relevant knowledge appropriately to creatively develop innovations or extend the knowledge from the past.

3.5. be able to search for information and seek additional knowledge for lifelong learning; keep up with the changes in knowledge and new technology.

**Interpersonal Skills and Responsibility**

**Students should**

4.1 be able to communicate with diverse groups of people and speak both Thai and foreign languages ​​effectively; be able to use knowledge in the professional field to communicate to society on appropriate issues.

4.2. be able to initiate constructively solving a situation both personally and collectively as well as showing a proper position for both one's own and the group's including providing assistance and facilitating in solving various situations.

4.3. be responsible for and be able to do their own learning development in accordance with the professional continuity.

4.4. know the roles, duties and responsibilities in the work assigned, both individual and group work, and be able to adapt and work with others

 as a leader and a follower effectively; be able to act appropriately with responsibility.

4.5. have a sense of responsibility for safety at work and maintain the environment for society.

**Analytical and ICT Skills**

**Students should**

5.1. have efficient skills in using computers for professional purposes.

5.2. have mathematical analysis skills, and applied statistics to solve related problems creatively.

5.3. be able to apply ICT skills appropriately and efficiently.

5.4 be able to effectively communicate through speaking, writing, and other symbolic communication.

5.5 be able to use calculation and engineering tools to pursue a career in engineering related fields.

**KMUTT Student QF**

1. **Knowledge** is having a deep academic knowledge based on a well-studied field and having extensive knowledge of the changes that have taken place and being able to apply knowledge to professional practice and to live properly.
2. **Professional Skill** is the ability to bring knowledge into practice. KMUTT students should be proficient in using professional tools and equipment and have the ability to apply technology to work. They should have the ability to help guide and train others to be able to perform tasks using various devices.
3. **Thinking skills** is creativity. KMUTT students should have a rational thought system and know how to process information, brainstorm all around from different perspectives and choose from a variety of conceptual schemes. They can use this skill to solve problems and make rational decisions.
4. **Learning skills** is knowledge-seeking attribute. KMUTT students should have the view that learning is possible anytime, anywhere. This will help develop them into a lifelong learner and they can learn through various media that are available in a variety of formats. They should have a good system and method of thinking, able to distinguish and filter the information obtained from learning appropriately.
5. **Communication skills** is the ability to use Thai language. KMUTT students should also be proficient in English skills (listening, speaking, reading and writing) and be able to communicate with others properly and appropriately. They should have the ability to transmit presentations and have good judgment in listening.
6. **Management skills** is the ability to set goals, and plan and act effectively according to resource constraints and on the basis of morality to achieve personal, team, organizational and social goals. They should be able to anticipate problems, impacts and related factors, including having a good attitude and the ability to prepare, prevent and proactively resolve situations or problems.
7. **Leadership** is the confidence and self-worth in oneself and others. KMUTT students should have a basic understanding of the team's needs and requirements and be able to create a team working atmosphere to inspire and encourage the creation of new things. They should be aware of situations, opportunities and challenges and be able to seek/create various methods for achieving various goals and have the ability to listen deeply and be able to communicate and coordinate to create cooperation in the thinking and action of the team as well as being able to be a role model for good practice.
8. **KMUTT’s Citizenship** is professionalism, integrity and ethics, including adhering to corporate ethical practices to develop humanization.
	1. Responsibility to self, profession 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 your actions, both direct and indirect. Respect the rules and regulations of the organization and society as well as having academic and professional ethics.
	2. Adaptability is flexibility, not clinging to one thing to the point of limiting oneself from others and being prepared to accept changes without thinking of resistance but being ready to understand the necessity of the changes that occur.
	3. Humanization (being completely human) is to have an optimistic view of the world. Do not look down on oneself and others. See the value of human beings, take care of the environment and the public, be able to coexist well with others, and know how to give, share and sacrifice.

**Section 5 Criteria for Students Assessment and Evaluation**

**1. Grading Rules/Guidelines**

The grading system shall be in accordance with the regulations of King Mongkut's University of Technology Thonburi on Bachelor's Degree 2014 or Graduate School Year 2019, subject to change depending on the announcement of King Mongkut's University of Technology Thonburi.

If a higher education institution, college, department or programme has policies or rules regarding the grading

student score, consideration is given to the assessment that reflects the expected learning outcomes. (Please mention the policy or rule or attach such document.)

2. Standard Verification Process for Student Achievement

2.1 Student Achievement Standard Verification Process

………………………………………………………………………………………………………

2.2 Verification of learning outcome standards after graduation

………………………………………………………………………………………………………

4.6 Verification process to standardize programme expected learning outcomes

Describe the process used to confirm student achievement according to each course learning outcome. For example, confirmation of test scores or assignments. The process may be different for different courses or for each learning outcome.

Describe the process in accordance with the programme's practical guidelines. This will ensure that it is practical and can be post-audited later. Quality assessments by internal and external organizations that are recognized nationally and internationally. This is one of the example processes to ensure the implementation of the programme and clearly specify the measurement intervals such as measurement time, frequency, etc.

3. Graduation Requirements

Graduation shall be in accordance with the regulations of King Mongkut's University of Technology Thonburi on Bachelor's Degree 2014 or Graduate School Year 2019, subject to change depending on the announcement of King Mongkut's University of Technology Thonburi.

If there are graduation criteria other than the university regulations, please specify such as English language score criteria or publications, etc. The additional criteria must not be lower than the university regulations.

**Section 6** **Lecturer Profession Development**

Describe guidelines for developing teacher competency in teaching and learning management to achieve expected learning outcomes.

**1. New lecturers’ orientation**

University level preparation

Guidelines for staff development of academic group of lecturers at King Mongkut's University of Technology Thonburi. All new lecturers must attend the university's new teacher orientation and development guidelines of academic staff shall be under KMUTT - Professional Standard Framework for Learning and Teaching with details as follows.

1. Academic staff for the position of a new lecturer must demonstrate the initial competence of being a teacher in terms of treating students equally. Designing lessons that support learners' learning and measuring and evaluating learning outcomes and classroom management competencies will be part of the consideration of the first contract trial (first six months assessment).
2. Academic staff for the position of new lecturers must be able to demonstrate knowledge. At the beginner level is the understanding in teaching and encouraging students to gain knowledge and understand how learning will be supported within the first two years and will be part of the consideration of the second contract renewal.
3. Academic staff for the position of new lecturers must be able to demonstrate their knowledge. Competent level is to understand and apply effectively within three years after the second contract is renewed and will be part of the consideration of the next contract.

However, there may be changes depending on the announcement of King Mongkut's University of Technology Thonburi.

**Faculty/Programme Level Preparation**

Describe the process used for orientation and/or introduction of new lecturers and guest lecturers to ensure that they understand the curriculum and the role of each course taught in the programme and the courses they are responsible for teaching; including development process in terms on teaching for new lecturers and current lecturers as well as supporting learning of theses lecturers in according with the criteria and best practice of KMUTT PSF (at least one lecturer per year, starting from the lecturer in charge of the programme first to achieve ‘Competent’ level and all teachers must have knowledge of instructional design according to OBE guidelines.

2. Knowledge and skill development for teachers

Teacher development at the university level

 Development guidelines shall be in accordance with KMUTT PSF. The development process for new lecturers and current lecturers must demonstrate competency at the Competent level for at least one person per year (within three years for lecturers hired from October 1, 2009 and within ten years for all lecturers). Person responsible for the course before and all teachers must have knowledge of course design according to OBE (Outcome Based Education) guidelines.

2.1 Development of teaching and learning management skills assessment and evaluation

……………………………………………………………………………………………………..

2.2 Other academic and professional development

……………………………………………………………………………………………………..

**Section 7 Programme Quality Assurance**

**1. Standard Control**

KMUTT follows the quality assurance system according to the ASEAN University Network - Quality Assurance (AUN-QA) guidelines. Any programme may wish to have quality assurance in accordance with other internationally accepted guidelines (if any) with the details as follows:

Assessment at Programme Level is divided into two components:

* Component 1 Supervision of Standards – In order to protect consumers, all courses must be supervised to ensure compliance with Component 1 (Programme Criteria) of the Office of the Permanent Secretary for Higher Education, Science, Research and Innovation (OPS) by the course, and conduct the examination of the data of Component 1 Governing Standard To meet the programme standards annually.
* Component 2 Development Criteria – Use the ASEAN University Network Quality Assurance (AUN-QA) guidelines, which the programme uses to conduct assessment for development according to the criteria. Pass a written self-assessment report (SAR) every year and if the course has been certified to meet the AUN-QA criteria, it will be assessed at least once in 5 years.

………………………………………………………………………………………………………………………………………………………………………………………………………………

Describe the process of programme management in accordance with the promulgated programme standards and the National Higher Education Qualifications Framework or the qualification standards in the field of study throughout the period of teaching and learning in the course. The programme must display the mechanism for monitoring and quality assurance of programme implementation to achieve the PLOs required.

**2. Graduates**

………………………………………………………………………………………………………

Explain the quality of graduates according to the National Higher Education Qualifications Framework, learning outcomes, employment, student and graduate performance by reviewing the direction of change in education of KMUTT. The mechanisms for monitoring and quality assurance of graduates in the programme must be explained to achieve the learning outcomes specified by the programme and if the graduates are unable to achieve the PLOs and special characteristics of the graduates according to Item 2.2 of the Executive Summary specified by the course. How will the course process be to guarantee the quality of graduates?

**3. Students**

Describe the mechanisms or processes the course will take to ensure that learners achieve the learning outcomes the programme has designed, including the implementation of the course when the learner fails to meet defined Stage-LOs/CLOs. Explain the process in managing the programme, which includes students’ admission and preparing them for admission, supervision, academic counseling and guidance, persistence, graduation, student satisfaction, and complaint.

3.1 Student admissions and pre-study preparation

………………………………………………………………………………………………………

3.2 Supervision of Academic Counseling and Student Guidance either about learning or other matters including monitoring and reporting on persistence and graduation results.

………………………………………………………………………………………………………

3.3 Satisfaction and outcomes of student complaints management as part of the course management process

………………………………………………………………………………………………………

………………………………………………………………………………………………………

3.4 Implementation of the programme if the learner fails to meet Defined Stage-LOs/CLOs ………………………………………………………………………………………………………

………………………………………………………………………………………………………

4. Lecturers

Explain mechanisms for monitoring and quality assurance of lecturers and developing lecturers. From the accepting new lecturers, selection of lecturers with qualifications, knowledge, expertise in disciplines and progress in producing academic works of lecturers.

4.1 The process of recruiting and selecting new teachers

………………………………………………………………………………………………………

4.2 The process of promoting and developing teacher skills

………………………………………………………………………………………………………

4.3 Satisfaction and results of handling complaints related to teachers, for example, teachers failing to teach according to CLOs, etc.

………………………………………………………………………………………………………

Item 2 Graduate, Item 3 Student and Item 4 Lecturers, please explain the mechanism for monitoring and ensuring graduate quality of the students and teachers in the course to achieve the learning outcomes specified by the programme if graduates and students do not achieve PLOs/Stage-LOs/CLOs specified by the course. Does the programme have the process for developing learners to ensure that all graduates meet all of the programme-level learning outcomes? And if the lecturers are unable to manage the teaching and learning according to the CLOs that are defined, how is the process to guarantee the quality of graduates? Students and teachers in all inputs (Input) as well as work or occupation. Lecturers work with students and graduates who are also an output factor.

5. Programme, Teaching and Learning Approaches and Assessment Methods

Explain the management of the programme to be efficient and effective on a continuous basis, for example, the quality control process for graduate production to achieve the formulated learning outcomes, programme design, control and supervision of course preparation, the establishment of an instructor system and the teaching and learning process in each course and that the student assessment supervision is assessed according to actual conditions. There are a variety of assessment methods, teaching and learning activities, and programme performance according to the National Higher Education Qualifications Framework.

………………………………………………………………………………………………………

………………………………………………………………………………………………………

6. Learning Support

Explain the operating system of departments, faculties, and institutions for the readiness of learning support facilities, both physical readiness and availability of equipment, technology, and facilities or resources that facilitate learning by participation of lecturers in charge of the programme /full-time course lecturers.

In this regard, textbooks, equipment, teaching aids and teaching aids as well as ready-made programme. Please review all learning supports and make sure that it is currently in operation.

Resource Sufficiency Assessment and providing additional teaching resources

………………………………………………………………………………………………………

………………………………………………………………………………………………………

7. Key Performance Indicators

| **Key Performance Indicators** | **Academic Years** |
| --- | --- |
| 2022 | 2023 | 2024 | 2025 | 2026 |
| 1. At least 80 percent of the programme lecturers in-charge take part in meetings to plan, monitor, and revise the programme’s operation.
 | x | x | x | x | x |
| 1. The programme description stated in TQF2 form complies with TQFHE or the programme TQF (if any).
 | x | x | x | x | x |
| 1. Descriptions of all courses and field work sessions (if any) are stated in the TQF3 and TQF4 forms at least before the semesters begin.
 | x | x | x | x | x |
| 1. The assessment of all courses and fieldwork sessions (if any) are reported in the TQF5 and TQF6 forms within 30 days after the semester ends.
 | x | x | x | x | x |
| 1. The programme report is made in the TQF7 form within 60 days after the academic year ends.
 | x | x | x | x | x |
| 1. Students’ achievement verification is made as stated in the TQF3 and TQF4 (if any) in at least 20 percent of the subjects in each semester.
 | x | x | x | x | x |
| 1. Teaching strategy and students' evaluation are developed/improved based on the information in the previous year’s TQF7.
 |  | x | x | x | x |
| 1. All new lecturers (if any) are orientated or advised in teaching.
 | x | x | x | x | x |
| 1. All lecturers of the programme receive academic or professional development at least once a year.
 | x | x | x | x | x |
| 1. At least 50 percent of the teaching assistants (if any) receive academic or professional development annually.
 | x | x | x | x | x |
| 1. The average final-year students’ satisfaction score or the fresh graduates’ satisfaction score towards the programme’s quality is at least 3.5 from 5.0.
 |  | x | x | x | x |
| 1. The average graduate users’ satisfaction score is at least 3.5 from 5.0.
 |  |  | x | x | x |

\* The report on the results of the course consists of the following:

1. Statistical data include:
* the number of first-year students admitted in the reported academic year
* the number of students graduating in the reporting year
* details about graduation rate
* the number and percentage of students who pass the examination according to the programme's study plan each year
* the rate of change in the number of students in each academic year
* graduate employment status within one year after graduation

2. The quality of educational management to achieve the expected learning outcomes are:

* percentage of graduating students who achieve expected learning outcomes
* important factors that cause the failing of education management quality to meet expected outcomes.

According to the Announcement of the Commission on Higher Education Re: Guidelines for Compliance with the National Qualifications Framework for Higher Education (No. 3) B.E. 2558 required for higher education institutions to be able to Performance [?]indicators according to the qualification’s standard framework itself. Each programme is free to define the performance indicators used to monitor, evaluate and report on the quality of the annual courses listed in Sections 1–6 of each programme according to the context and objectives of producing graduates. However, it needs approval from the Council of Higher Education Institutions and be in accordance with the qualification standards in the field/discipline (if any), or if any programme wishes to specify the same indicators, it also can be done.

**Section 8 Evaluation, Improvement, and Implementation**

The programme should take into account the issues in Sections 1-7 and link to the assessment of teaching and learning management on important issues that reflects the expected quality of graduates. These issues are used to assess the quality and standards of the programme for dissemination.

1. Assessing the effectiveness of teaching

1.1 Teaching Strategies Assessment

………………………………………………………………………………………………………

………………………………………………………………………………………………………

Describe the process used to assess planned teaching strategies for improving learning in areas such as opinions or suggestions of teachers after the training, implementing teaching strategies, consultation with course or teaching method professionals, analysis of student assessment results and related training courses in learning theory and teaching methods, and describe the process of applying the assessment results to improve the teaching strategy plan.

1.2 Assessing teachers' skills in using a teaching strategy plan

………………………………………………………………………………………………………

………………………………………………………………………………………………………

Describe the process used to assess teachers' skills in implementing planned strategies, such as student assessments for each course, observation of the instructor in charge of the programme or the department head, and students’ evaluation analysis compared to students of other institutions with similar programme. A ranking of the most effective knowledge and skill development processes that students need.

2. Overall Programme Assessment

………………………………………………………………………………………………………

………………………………………………………………………………………………………

Describe the process that will be used to obtain information in order to assess the overall quality of the programme and the learning outcomes expected from the following groups: 1) students and graduates; 2) experts and/or external assessors, and 3) employers and/or other stakeholders.

For example:

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

3. Evaluation of the performance according to the Programme Specification

………………………………………………………………………………………………………

………………………………………………………………………………………………………

The Programme shall be assessed according to the performance indicators specified in Section 7, Item 7, by at least three assessors, consisting of at least one expert in the same field/discipline (preferably the same assessment committee as the internal quality assurance).

4. Review of Evaluation Results and Plans for Improvement

………………………………………………………………………………………………………

………………………………………………………………………………………………………

Describe the process of reviewing the assessment results obtained by teachers and students, including the process of planning and improving the programme and strategic plans.

**Appendices**

|  |  |
| --- | --- |
| **Appendix A** | Executive Summary |
| **Appendix B1**  | Course Descriptions and Course Learning Outcomes  |
| **Appendix B2** | Table showing the comparison of the old and the revised programme  |
| **Appendix B2** | Table showing the comparison of the PLOs and the national TQF  |
| **Appendix C** | Details of the programme lecturers in-charge, full-time lecturers, and guest lecturers |
| **Appendix D** | Order of programme development committee or programme screening procedure committee or person in-charge |
| **Appendix E** | KMUTT Regulations on Undergraduate Studies of the Year …. and the affiliation’s educational announcements/regulations |
| **Appendix F**  | MOUs made between domestic and foreign organizations (if any) |

**Appendix A**

**Executive Summary**

**Appendix B.1**

**Course description and learning outcomes of the course**

**SCE 652 Psychology for Teachers** 3 (3-0-9)

 Pre-requisite: No

 This course will focus on role of psychology applied to education, theories and process of human growth and development, psychological principles and theories for human learning and psychology of teaching and learning.

**Learning outcomes:**

1. Learners correctly describe the principles of educational psychology and learning.

2. Learners can apply their knowledge of psychology to promote student learning.

3. Learners can give advice or be a mentor to others.

**Courses offered for extracurricular students**

**SCE 616 Special Topic in Analytical Chemistry** 2 (2-0-6)

 Pre-requisite: No

 Special topics from current active areas in analytical chemistry including research in method development and applications.

**Learning outcomes:**

1. Learners can explain the principles of interesting issues from researching information or studying from various research papers.
2. Students can present and discuss relevant issues.
* List of subjects and course descriptions in both Thai and English to be consistent by writing a course description (Course Description) to be written in the same format for the whole course (phrase or sentence).
* The CLO must be consistent with the mapping and be written in the same format.
* The courses shown in Appendix A must be complete as they appear in the programme structure. and in the case that the course opens courses for non-curricular/non-departmental students to study, please include course descriptions and additional CLOs.
* Any course that has prerequisite-joint prerequisite conditions must be in accordance with the conditions set by the course owner and in accordance with KMUTT regulations.

NOTE: Course Learning Outcomes (CLOs) of basic courses can be downloaded from the website: <https://sites.google.com/mail.kmutt.ac.th/programme-edskmutt>

**Appendix B.2**

**Table comparing the changes between the original and revised programmes (Only for programme improvement)**

|  |  |  |
| --- | --- | --- |
| **Original Programme B.E. 256...** | **Revised Programme B.E. 256...** | **Note** |
|  |  |  |
|  |  |  |

All changes should be clearly stated in the ‘NOTE’ column. If there is no change, specify the same or in case of change, specify such as adjusting the name of Thai/English courses, increasing the number of credits in the adjusted course description, opening of new courses, cancellation of the courses, transferring courses to other categories, etc. The courses shown in the table shall be separated by course categories that appear in the Programme specification.

**Appendix B.3**

**Table comparing course content with TQF 1 or Vocational Council Criteria**

 (Sample) See details at <http://www.mua.go.th/users/tqf-hed/news/news6.php>

| **Content based on TQF1** | **Content in this Programme** |
| --- | --- |
| **1. Mechanics and Machinery Knowledge Group** |
| Mechanics | MEE 217 Engineering Mechanics |
| Machine Design | PRE 315 Mechanics of Solids and Machine Design |
| PRE 155 Mechatronics Drawing |
| PRE 211 Advanced Machine Tools |
| Dynamic Systems | PRE 331 Thermodynamics |
| PRE 354 Industrial Robotics |
| PRE 461 Dynamics of Mechatronic Systems |
| PRE 332 Mechanical Engineering Laboratory |
| **2. Electrical and Electronics Knowledge Group** |
| Electric Circuits and Electric Devices  | EEE 105 Electric Circuits |
| Electronic Circuits and Devices | ENE 212 Electronic Circuits and Devices |
| Electrical machinery | EEE 102 Electrotechnology I (Power) |
| **3. Automation and Computer Knowledge Group** |
| Control Theories and Control System | PRE 352 Modeling and Control System I) |
| PRE 353 Modeling and Control System II) |
| Sensor and Actuator | PRE 251 Signal and Measurement System) |
| PRE 351 Manufacturing Automation) |
| Control Computer Programming | PRE 113 (Computer Programming for Engineers)  |
| PRE 252 Computer Systems and Interfacing) |
|  | PRE 351 Manufacturing Automation) |
| PRE 356 (Mechatronics Engineering Laboratory) |
| PRE 454 (Machine Vision) |
| PRE 458 (Introduction to Optimization and Applications) |
| **4. Mechatronics Knowledge Group** |
| Manufacturing Processes | PRE 133 (Engineering Materials) |
| PRE 103 (Production Technology) |
| PRE 261 (Manufacturing Processes) |
| PRE 271 Production Engineering Statistics) |
| Engineering Drawing | PRE 115 (Production Drawing) |
| PRE 155 (Mechatronics Drawing) |
| Products | PRE 357 Product Design and CAD/CAM/CAE) |
| Mechatronics Engineering Project | PRE 355 (Mechatronics Engineering Design) |
| PRE 496 (Mechatronics Engineering Project Study) |

**Appendix C**

 **Programme Vitae of Full-time lectures and Special lecturers**

* Check the format of writing qualifications as follows:

Educational qualification (field of study), institution of graduation, country of graduation (year of graduation) by sorting from the highest qualifications to the bachelor's degree to be complete and consistent throughout (In the case of graduating abroad, use the year A.D and graduating in Thailand use B.E.

* Academic works
* For programme revised in 1/2565, it must be a work from the past five years between 2018-2022.
* Must clearly distinguish the type of work such as International Journal/International Conference/National Journal/National Conference, etc.
* Complete information according to the principles of bibliography by the university; use APA reference writing.

Check the teacher's teaching workload, Appendix D, Item 2.2, teaching workload in this course. The teaching load must be specified in this course only. It must be consistent with the teaching tasks specified in Section 3, Item 3.2.1.

In this regard, the programme vitae must be attached to all full-time lecturers’ [CV?] as specified in Section 3, Item 3.2.1.

CV of lecturers in-charge of the Programme

(Example)

Dr. …………………………...

1. Educational Background

Year ......... Ph.D. (Engineering…………………………….), University……………………., Thailand

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

Year .......... B.S. (…………………………...), ………………………. Institute, U.S.A.

2. Teaching workload

2.1 Current teaching workload (only in the year the course is offered)

Undergraduate course

XXX xxx ………. Name of the course in Thai/English language……………… 3 credits

Graduate course

XXX xxx ………. Name of the course in Thai/English language……………… 3 credits

2.2 Teaching workload in this course (Only the workload of teaching in this course which must be consistent with the teaching tasks specified in Section 3, Item 3.2.1.)

Undergraduate course

XXX xxx ………. Name of the course in Thai/English language……………… 3 credits

3. Reasons for being assigned to take responsibility for this course (Choose only one item based on the teacher's qualifications.)

3.1 Qualifications and fields of study are directly related or not related to the field of study of the programme.

(Explain more in case of relationship or not in accordance with the course of study) ................................................

3.2 Academic work from the past five years (should specify works that are linked to the course of study and fill in the information completely according to the bibliography principle)

List only 3-5 up-to-date works related to the field of study.

1. International Journal (weight value 1)

……………………………………………………………………………………………………………………………………………………………………………………………………………..

In the database …………. (as announced by OHEC such as published in Scopus, Web of Science, etc.)

1. National Journal (weight value 0.4)

……………………………………………………………………………………………………………………………………………………………………………………………………………..

In the database …………. (as announced by OHEC such as published in Scopus, Web of Science, etc.) ….

3. International Conference (weight value 0.4)

……………………………………………………………………………………………………………………………………………………………………………………………………………..

4. National Conference (weight value 0.2)

……………………………………………………………………………………………………………………………………………………………………………………………………………..

5. Patent

………………………………………………………………………………………………………

6. Petty Patent

……………………………………………………………………………………………………………………………………………………………………………………………………………..

7. Textbook

………………………………………………………………………………………………………

8.Other academic works (e.g., national/international creative works, enterprise experience, social service work, etc.)

See details of the manual for writing academic works in bibliography format at <https://sites.google.com/mail.kmutt.ac.th/programme-edskmutt>

**Special teacher Information**

**Photo**

1. Name ........................................ Surname ............................... Age ...............years

Academic position (if any) .....................................................................................

Current position (if any) (e.g., Company Director, Director of the Institute,

Research and Development, etc.)

2**.** Educational background (specify qualifications, field of study, institution and year of graduation; sort by highest qualifications)

|  |  |  |
| --- | --- | --- |
| **Degree** | **Field of Study** | **Institution** |
| **Name of Institution** | **Country** | **Year B.E./A.D** |
| M.Sc. | Biochemical Engineering | University College London | U.K. | 2010 |
| M.Sc. | Applied Physics | King Mongkut’s University of Technology Thonburi | Thailand | 2551 |

**3. Work Experiences** (from past to present)

|  |  |  |  |
| --- | --- | --- | --- |
| **B.E. 2550 - 2563** | **Institution** | **Position** | **Duration** |
| B.E. 2562 – present | KMUTT | Guest Lecturer | 2 years |
| **B.E.**  2558 – present | Mahidol University | Faculty member, Department of Microbiology | 1 year |
| **B.E.** 2553 - 2557 | Thammasart University | Faculty member, Department of Microbiology | 5 years |
| **B.E.**  2550 - 2553 | ISTRS | Researcher  | 4 years |

**4. Field of Study/Subject of expertise (Should specify field of study or specialization in accordance with the type of nomination request)**

4.1. ………………………………………………………………………………………………….

4.2 ………………………………………………………………………………………………….

**5.Academic works/textbooks (It should indicate academic works/textbooks that have been published in authoritative academic journals. And there is a connection with the disciplines of the course. Fill out the information completely according to the principles of bibliography.)**

1. International Journal

2. International Conference

3. National Journal

4. National Conference

5. Patent

6. Petty Patent

7. Textbook

8.Other academic works (e.g., national/international creative works, enterprise experience, social service work, etc.)

6. Characteristics of teaching duties

□ Teaching hours not exceeding 50% of the courses □ Teaching hours exceeding 50% of the courses

Teaching workload of this course (with attached TQF 3 or a lesson plan in the form of Course Syllabus/Course Outline, etc.)

|  |  |  |
| --- | --- | --- |
| No. | Courses | lecturers |
| 1. |  |  |
| 2. |  |  |

Current teaching workload (if any)

|  |  |  |
| --- | --- | --- |
| No. | Courses | lecturers |
| 1. |  |  |
| 2. |  |  |

7. Reasons and necessity to invite a special teacher

………………………………………………………………………………………………………

**Appendix D Order of Appointment of Programme Development/**

**Improvement Committee**

*(Attach every time before submitting to the university for consideration)*

List of external experts to consider courses. Must be a list that is approved by the Academic Council.

**Appendix E KMUTT Regulations on Undergraduate Studies of the Year ….**

**and the affiliation’s educational announcements/regulations**

*(Attach every time before submitting to the university for consideration)*

**Appendix F MOUs made between domestic and foreign organizations (if any)**

*(Attach every time before submitting to the university for consideration)*

If the programme specifies cooperation with institutions in Section 1, Item 5.5.1, and/or cooperation with other institutions, requested to attach up-to-date additional documents (MOUs).