



**Internal Educational Quality Assessment Report
at the Program Level in accordance with
AUN-QA Criteria**

**Bachelor of Science Program in
Industrial Optimisation and Applications
(International Program)**

New Curriculum, Academic Year 2023
Faculty of Science

Maejo University

Academic Year 2024 (1 July 2024 to 1 June 2025)

Preface

This Self-Assessment Report (SAR) for the Bachelor of Science Program in Industrial Optimisation and Applications (International Program), Faculty of Science, Maejo University, presents the performance outcomes for the academic year 2024 (from 1 July 2024 to 1 June 2025).

The report has been prepared with the objective of demonstrating the program's internal quality assessment results, reflecting its implementation of quality assurance activities in accordance with the criteria of the Office of the Permanent Secretary, Ministry of Higher Education, Science, Research and Innovation (MHESI), under Component 1: Standards Oversight and Quality Criteria, and aligned with the ASEAN University Network – Quality Assurance (AUN-QA) framework.

This report is submitted to the internal quality assessment committee appointed by Maejo University and further presented to the Higher Education Standards Committee of the Office of the Permanent Secretary, MHESI, as the responsible supervisory authority. In addition, the report aims to publicly disseminate the program's quality assurance outcomes to promote transparency and stakeholder engagement.

This report for the academic year 2024 is organized into four sections: Section 1: Introduction to the program, Section 2: Performance based on indicator 1.1, Section 3: Performance based on the AUN-QA assessment criteria, and Section 4: Appendix.

The Bachelor of Science Program in Industrial Optimisation and Applications (International Program), Faculty of Science, expects that this Self-Assessment Report at the program level for the academic year 2024 will serve as a key document demonstrating the quality and standards of educational management. This report aims to build trust and confidence in the standards and quality of graduates from Maejo University, as well as to provide valuable information to all interested stakeholders.

Bachelor of Science Program in
Industrial Optimisation and Applications
(International Program)

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Section 1

Introduction

1.1 Executive Summary

The Bachelor of Science Program in Industrial Optimisation and Applications (International Program), Faculty of Science, Maejo University, is a newly established program in the academic year 2023 (B.E. 2566). This report has been prepared to present the self-assessment results in accordance with the assessment criteria of the Ministry of Higher Education, Science, Research and Innovation (MHESI), specifically under Component 1: Program Standards Oversight, and the ASEAN University Network – Quality Assurance (AUN-QA) at Program Level, Version 4.0.

For the academic year 2024 (B.E. 2567), the program enrolled its first cohort of 3 students. The program is currently operated by 5 faculty members, all of whom hold doctoral degrees. Among them, one holds associate professor, and 3 assistant professors.

The total operational budget allocated for Program management was 17,913.01 THB, entirely funded through internal revenue sources.

The assessment was conducted based on 8 AUN-QA criteria, with the overall performance rated at Level 4. The breakdown of performance by individual criterion is presented as follows:

Self-Assessment Summary Table Based on AUN-QA Criteria

Criteria		Self-Assessment
Indicator 1.1	self-assessment results in accordance with the assessment criteria of the Ministry of Higher Education, Science, Research and Innovation (MHESI),	Pass
Criterion 1	Expected Learning Outcome	4
Criterion 2	Programme Structure and Content	4
Criterion 3	Teaching and Learning Approach	4
Criterion 4	Student Assessment	4
Criterion 5	Academic Staff	4
Criterion 6	Student Support Services	4
Criterion 7	Facilities and Infrastructure	4
Criterion 8	Output and Outcomes	N/A

1.2 Methodology of the Self-Assessment Report

This Self-Assessment Report presents the operational results of the Bachelor of Science Program in Industrial Optimisation and Applications (International Program), Faculty of Science, Maejo University. This is a newly established Program in the academic year 2023, reporting for the academic year 2024 under Component 1: Standards Oversight, in accordance with the regulations and notifications issued by the Ministry of Education.

In the academic year 2024, the program-level quality assessment and performance evaluation were conducted based on AUN-QA criteria, which consist of 8 quality criteria. The program has established operational targets and prepared the self-assessment report through the collaboration of the program staff. This marks the first year of quality assessment for the program.

The self-assessment report presents data and performance results prepared for the internal quality audit conducted by an expert committee appointed by Maejo University. This report serves not only as an indicator of the quality level of program management but also as a communication tool to share the program's performance with external audiences. Moreover, it provides assurance to stakeholders that the program consistently upholds quality assurance standards each academic year.

1.3 Basic Information

1.3.1 Overview of the University

Maejo University originated from a policy to expand agricultural education to regional areas. It was established on June 7, 1934 under the name “Northern Agricultural Teacher Training School.” The institution specializes in agriculture with a strong emphasis on hands-on practical training for students. Currently, Maejo University operates under the Maejo University Act of 2017, focusing on promoting organic agriculture within the university, among farmers, and in society. This direction represents the university's core approach toward becoming an Eco University.

Philosophy:

Commit to educating its students to be graduates rich in wisdom, enduring work, being virtuous and ethical for the prosperity of Thai society with agriculture as a foundation.

Vision:

To be a leading university with international agricultural excellence.

Mission:

1. Educate students to have academic and professional knowledge, especially for being entrepreneurs who can keep up with the changing trends, with an emphasis on agriculture, applied sciences, foreign languages, information technology, and disciplines corresponding to the directions of economic development, local communities, and society of the country.
2. Expand opportunities for the disadvantaged to pursue higher education and promote lifelong learning for people of all levels.
3. Create and develop innovations and knowledge in various disciplines, especially in agriculture, and applied sciences for learning and technology transfer to society.

4. Expand academic services and cooperation nationally and internationally.
5. Develop the university to have academic excellence in agriculture to be a refuge for oneself and society.
6. Preserve the national arts and culture and conserve natural resources.
7. Create and develop an administration and management system for efficiency, effectiveness, and transparency in managing Maejo University's strategic issues.

1.3.2 Overview of the Faculty

The Faculty of Science is an academic unit under Maejo University, which has been under the Office of the Higher Education Commission, Ministry of Education, since July 1, 2003. Previously, it was under Ministry of University Affairs. The faculty was formally established as announced in the Royal Thai Government Gazette, Volume 110, Part 34, dated March 23, 1993. Originally, the Faculty of Science was organized a group of subject areas within the General Education Department of the Faculty of Agricultural Business.

In the 7th National Economic and Social Development Plan (1992–1996), a policy was set to produce and develop personnel in shortage fields, particularly in science and technology. To respond to this policy, Maejo University elevated the former Science Section, which included Mathematics and Statistics Sections of the General Education Department in the Faculty of Agricultural Business, to establish the Faculty of Science.

At the initial stage, the University Affairs Committee approved the establishment of the Faculty of Science, organizing it with only one administrative unit—the Secretariat Office. The approval to divide the faculty into separate departments had not yet been granted as the faculty was still in its early stage of establishment.

Currently, the Faculty of Science offers 10 undergraduate programs, 5 master's degree programs, and 3 doctoral degree programs. Each Program is managed by a program coordinator who is responsible for administration at the program level, under the supervision and oversight of the Faculty of Science.

Educational Philosophy:

Committed to generating knowledge toward internationalization in science and technology through the cultivation of graduates who are inquisitive, hardworking, and possess strong moral and ethical values forming a foundation for the advancement of Thai agriculture.

Vision:

To achieve academic excellence through the application of scientific and technological knowledge in research and innovation toward international recognition.

Mission:

1. To provide foundational education and produce graduates with academic and professional expertise, equipped with desirable graduate attributes.
2. To conduct research and foster innovation in the field of science, emphasizing integration to support local and national development.
3. To disseminate and transfer scientific and technological knowledge to local communities.

4. To preserve, promote, and develop arts, culture, local wisdom, and the environment, and to manage operations efficiently and effectively based on the principles of good governance.

1.3.3 Overview of the Program

The Bachelor of Science Program in Industrial Optimisation and Applications (International Program), Faculty of Science, Maejo University, is a new program established in 2023. It was approved by the University Council at its 5/2022 meeting on July 24, 2022. This program was developed through a collaborative agreement between Maejo University and Curtin University, Australia, signed in May 2021. The program commenced its first intake in the academic year 2024, with a study plan that supports students spending two years at Maejo University followed by one and a half years at Curtin University. Upon completion, students will be awarded degrees from both universities.

The new 2023 curriculum consists of nine main sections: Degree title and field of study, Philosophy, objectives, and learning outcomes, Curriculum structure, courses, and credit hours, Learning process organization, Readiness and capability in curriculum management, including faculty and thesis advisors, Admission qualifications, Student assessment and graduation criteria, Curriculum quality assurance, Systems and mechanisms for curriculum development. ([Reference 01](#))

In February 2025, the program received a notification from MHESI requesting revisions to the OBE-2 details under Case 2. The curriculum has since been revised following the recommendations from MHESI, the Faculty Academic Committee, and the Faculty Board. Currently, the revised documents are under review for acknowledgment by the university. ([References 02](#) / [Reference 03](#) / [Reference 04](#))

Program Title:

Thai: หลักสูตรวิทยาศาสตรบัณฑิต สาขาวิชาวิทยาการการหาภาวะที่เหมาะสมทางอุตสาหกรรม
(หลักสูตรนานาชาติ)

English: Bachelor of Science Program in Industrial Optimisation and Applications
(International Program)

Degree Title:

Thai: วิทยาศาสตรบัณฑิต (วิทยาการการหาภาวะที่เหมาะสมทางอุตสาหกรรม)

English: Bachelor of Science (Industrial Optimisation and Applications)

The curriculum was approved by the University Council at its 5/2022 meeting held on July 24, 2022.

Background of the Program:

The Bachelor of Science program in Industrial Optimisation and Applications has been developed to keep the curriculum up-to-date and aligned with the university's policies, as well as consistent with the memorandum of understanding between Maejo University and Curtin University, Australia. The program commenced its first intake in the academic year 2024.

Program Philosophy:

The program aims to produce graduates with the capability to manage industrial data effectively, with skills to optimize and advance the Thai industry to an international standard.

Program Objectives:

- To produce bachelor's degree graduates capable of solving problems related to data management and industrial optimization by applying computational thinking, programming skills, and data analysis creatively in community markets and at the international level.
- To develop graduates with comprehensive knowledge in both theory and practice, enabling them to pursue careers in both public and private sectors.
- To equip graduates with proficiency in English communication and academic presentation skills, as well as fostering lifelong learning skills.
- To cultivate graduates' abilities in systematic critical thinking and synthesis.
- To nurture graduates with a strong sense of morality and ethics who can work effectively with others.
- To produce graduates who are socially responsible and able to live happily within society.

Career Opportunities after Graduation:

1. Data Scientist specializing in Industrial Optimization, Data Analyst, IT Planner, Investment Planner, Production Planner, Logistics Specialist, Warehouse Manager, Procurement Manager, Scheduler, or Supply Chain Manager.
2. Systems Analyst and Designer, Programmer.
3. Entrepreneurship or Self-Employment.
4. Academic Staff, Researcher, Teaching Assistant.

Program Learning Outcomes (PLOs)

1. Use lifelong learning skills to live in the digital age.
2. Explain fundamental concepts for solving industrial problems using knowledge of mathematics, statistics, or programming.
3. Apply mathematical knowledge to construct industrial models.
4. Utilize optimization techniques to address problems and improve industrial efficiency.
5. Utilize appropriate information technology to present data for improving industrial efficiency.
6. Analyze and select appropriate approaches to solve industrial problems.
7. Communicate and present information accurately and appropriately in English, according to context.
8. Design and develop program code to solve industrial problems.
9. Demonstrate integrity, responsibility, and self-discipline.
10. Demonstrate teamwork, adaptability, and collaboration with others.
11. Demonstrate a positive attitude toward learning and consistently seek to acquire new knowledge.

[illegible]

Teaching and Learning Facilities

1. General classroom buildings within Maejo University
2. Faculty of Science

Library

1. Maejo University Library

Laboratories

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Practical Training Locations

- Industrial establishments or cooperative education workplaces involving data collection and data analysis to enhance industrial or business efficiency. These may include other private companies and government agencies such as the Northern Meteorological Center, companies requiring numerical computation skills, companies with positions in data analysis and business planning, or companies related to data science. These organizations collaborate with the program to provide practical training opportunities.

Teaching and Learning Strategies of the Program to Achieve the Intended Program Learning Outcomes (PLOs):

The details are provided in OBE-2 Version 2, Component 2: Philosophy, Objectives, and Learning Outcomes, pages 15 – 19. ([Reference 05](#))

Assessment and Evaluation of Students to Achieve the Defined Program Learning Outcomes (PLOs):

The details are provided in OBE-2 Version 2, Component 2: Philosophy, Objectives, and Learning Outcomes, pages 15 – 19 ([Reference 05](#)) and Table Showing the Alignment with the Achieved Program Learning Outcomes (PLOs) of the Curriculum Along with Assessment Methods, page 170. ([Reference 06](#))

Curriculum Management:

Curriculum Management Tasks	Description	Responsible person
Administrative Division	1. Manage and oversee the budget 2. Manage resources supporting teaching and learning 3. Personnel development 4. Educational quality assurance 5. Student admissions	1. Buraskorn Nuntadilok 2. Griengkrai Rajchakit 3. Urailuk Singthong

Curriculum Management Tasks	Description	Responsible person
Academic and Research Division	1. Research and funding management 2. Organizing training programs 3. Teaching workload management 4. Academic advising responsibilities 5. Supervision and monitoring of course files (OBE-3-6)	1. Griengkrai Rajchakit 2. Sita Chakrit 3. Urailuk Singthong
International Affairs Division	1. Communication and coordination with Curtin University 2. Facilitation of student exchange to Curtin University 3. Preparation for study at Curtin University	1. Sita Chakrit 2. Buraskorn Nuntadilok 3. Griengkrai Rajchakit
Student Affairs Division	1. Organizing Student development programs 2. Organizing English proficiency tests projects such as MJU-TEP and IELTS	1. Tawatchai Pettarathip 2. Urailuk Singthong 3. Sita Chakrit
Academic Services Division	1. Organizing camps and other extracurricular activities 2. Website management 3. Public relations	1. Urailuk Singthong 2. Tawatchai Pettarathip 3. Buraskorn Nuntadilok

Target Students: Senior high school students or equivalent, both domestic and international.

Stakeholders of the Curriculum: Refer to Appendix 9, OBE-2 Curriculum Design, Data Analysis, and Determination of Learning Outcomes of the Curriculum, pages 158 – 168. ([Reference 07](#))

Suppliers Group: Secondary schools or equivalent institutions, both domestic and international.

Collaborative Partners: Cooperative training sites and Curtin University.

Strengths of the Program:

1. It contributes to producing graduates who possess both theoretical knowledge and practical skills in optimizing and developing Thai business and industry.
2. As an international program, it broadens graduates' employment opportunities and enhances their potential for higher salaries.

Limitations of the Program:

1. It is the only program at the university that publicly states on the admissions.mju.ac.th website that the university reserves the right not to offer the program if fewer than 10 applicants enroll.

Development Plan of the Program: The details are provided in OBE-2 Version 2, Component 9: System and Mechanism for Curriculum Development, pages 58 – 65. ([Reference 08](#))

Section 2

Performance Based on Indicator 1.1

รายงานผลการดำเนินงานของหลักสูตรตามเกณฑ์มาตรฐานหลักสูตร
ของสำนักงานปลัดกระทรวงการอุดมศึกษา วิทยาศาสตร์ วิจัย และนวัตกรรม (สป.อว.)
เกณฑ์มาตรฐานหลักสูตรระดับปริญญาตรี พ.ศ. 2558

ตารางสรุปผลการดำเนินงานตามเกณฑ์การประเมินองค์ประกอบที่ 1 การกำกับมาตรฐาน
หลักสูตร : หลักสูตรวิทยาศาสตรบัณฑิต สาขาวิชาวิทยาการการหาภาวะที่เหมาะสมทางอุตสาหกรรม
(หลักสูตรนานาชาติ)
หลักสูตรใหม่ พ.ศ. 2566
คณะ/วิทยาลัย : คณะวิทยาศาสตร์

การกำกับให้เป็นไปตามมาตรฐาน

ข้อ	เกณฑ์การประเมิน	ผ่านเกณฑ์/ไม่ผ่านเกณฑ์
1	จำนวนอาจารย์ผู้รับผิดชอบหลักสูตร	ผ่านเกณฑ์
2	คุณสมบัติของอาจารย์ผู้รับผิดชอบหลักสูตร	ผ่านเกณฑ์
3	คุณสมบัติอาจารย์ประจำหลักสูตร	ผ่านเกณฑ์
4	คุณสมบัติของอาจารย์ผู้สอน	ผ่านเกณฑ์
5	การปรับปรุงหลักสูตรตามรอบระยะเวลาที่กำหนด	ผ่านเกณฑ์

สรุปผลการดำเนินงานองค์ประกอบที่ 1

- ☒ เป็นไปตามเกณฑ์
☐ ไม่ผ่านเกณฑ์ในข้อที่
 ข้อสังเกต : ถ้ามี-ระบุ....

จากรายงานผลการดำเนินงานตามเกณฑ์มาตรฐานหลักสูตรของหลักสูตรวิทยาศาสตรบัณฑิต สาขาวิชาวิทยาการการหาภาวะที่เหมาะสมทางอุตสาหกรรม (หลักสูตรนานาชาติ) พบว่ามีผลการดำเนินงานเป็นไปตามเกณฑ์การประเมินองค์ประกอบที่ 1 การกำกับมาตรฐานหลักสูตร

 (ผู้ช่วยศาสตราจารย์ ดร.บุรสร นันทดิлок) ประธานอาจารย์ ผู้รับผิดชอบหลักสูตร ผู้ให้ข้อมูล	 (ผู้ช่วยศาสตราจารย์ ดร.กฤษณะ ลานน้ำเที่ยง) รองคณบดีคณะวิทยาศาสตร์ ฝ่ายวิชาการและประกันคุณภาพ ผู้ตรวจสอบข้อมูล	 (ผู้ช่วยศาสตราจารย์ ดร.รุดน ชื่นบาล) คณบดีคณะวิทยาศาสตร์ ผู้รับรองข้อมูล
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(Reference 09 Report of Indicator 1.1)

Section 3

Performance Results
According to
AUN-QA Criteria

Criterion 1: Expected Learning Outcome

Req.-1.1: The programme to show that the expected learning outcomes are appropriately formulated in accordance with an established learning taxonomy, are aligned to the vision and mission of the university and are known to all stakeholders.

The Bachelor of Science Program in Industrial Optimisation and Applications (International Program) is a newly established curriculum launched in 2023 (B.E. 2566) under an academic collaboration with Curtin University, Australia. The program began admitting students and offering instruction for the first time in the academic year 2024 (B.E. 2567), utilizing the OBE-2 curriculum framework (Version 1) for the students admitted in academic year 2024 ([Reference 1.1-1](#)). Subsequently, the OBE-2 (Version 2) was revised and enhanced in accordance with the recommendations from the Office of the Permanent Secretary, Ministry of Higher Education, Science, Research, and Innovation (OPS MHESI) to ensure greater completeness and alignment ([Reference 1.1-2/ Reference 1.1-3](#)).

1. Development of Program Learning Outcomes (PLOs)

The Bachelor of Science Program in Industrial Optimisation and Applications was designed based on the principles of Outcome-Based Education (OBE). The initial step in the development process was to define the Program Learning Outcomes (PLOs), which were established through a comprehensive analysis of the needs and expectations of key stakeholders involved in the curriculum's design.

The PLOs were established with reference to Bloom's Taxonomy to ensure comprehensive coverage of the cognitive, psychomotor, and affective learning domains. Additionally, the learning outcomes were classified according to the levels of competence expected of undergraduate students.

These PLOs are designed to cultivate well-rounded graduates who demonstrate not only knowledge and skills, but also ethical integrity and strong personal character. This educational approach is aligned with the Thai Qualifications Framework for Higher Education (TQF) 2022, as issued by the Higher Education Standards Committee.

The curriculum has produced two versions of the PLOs, prepared for use in different periods and for distinct purposes, as follows:

PLOs Version 1: Based on OBE-2 Version 1 ([Reference 1.1-1](#))

This version was used in the proposal submitted to OPS MHESI for the approval of the new program. It was also applied in the teaching and learning process for the academic year 2024 (B.E. 2567), covering both the first and second semesters. Details are provided in Table 1 of [Reference 1.1-4](#).

PLOs Version 2: Based on OBE-2 Version 2 ([Reference 1.1-2](#))

This version represents an enhanced and more complete revision of the first version, developed in accordance with recommendations from OPS MHESI. It will be implemented starting from the following academic year. Details are provided in Table 2 of [Reference 1.1-4](#) as well as in [Reference 1.1-5](#) and [Reference 1.1-6](#).

2. Alignment of PLOs with the University and Faculty's Fundamental Requirements, Vision, and Mission

The PLOs of this program have been designed to align with the fundamental requirements, vision, and mission of the university and the Faculty of Science. In particular, the curriculum emphasizes the development of graduates with strong analytical thinking skills and the ability to solve industrial problems through the application of Optimization Science. Additionally, it aims to equip students with essential coding and programming skills necessary for competing in the global job market.

Supporting details on the alignment between the PLOs and the institutional and faculty-level goals are presented in Tables 1 to 3 of [Reference 1.1-7](#).

3. Communication and Awareness of PLOs among Stakeholders

The program ensures that key stakeholders, particularly program committee members, teaching staff, and students are well-informed of and understand the Program Learning Outcomes (PLOs). Communication regarding the PLOs has been carried out through multiple channels, including:

For Program Committee Members and Teaching Staff:

- Regular curriculum committee meetings
- Preparation of OBE-3 and OBE-5 documents, which clearly show the linkage between Course Learning Outcomes (CLOs) and Program Learning Outcomes (PLOs)

For Students:

- Through course instructors during classroom teaching
- Through academic advising provided by program advisors ([Reference 1.1-8](#))

Self-assessment	1	2	3	4	5	6	7
Req.-1.1: The programme to show that the expected learning outcomes are appropriately formulated in accordance with an established learning taxonomy, are aligned to the vision and mission of the university, and are known to all stakeholders.				✓			

Req.-1.2: The programme to show that the expected learning outcomes for all courses are appropriately formulated and are aligned to the expected learning outcomes of the programme

The program has systematically developed and refined the Course Learning Outcomes (CLOs) for the courses offered in the academic year 2024, which marks the first year of instructional implementation under the program. ([Reference 1.2-1](#))

Development of CLOs Based on PLOs Version 1:

In the academic year 2024, the program established a systematic process for developing Course Learning Outcomes (CLOs) based on PLOs Version 1 ([Reference 1.1-1](#)). The implementation included the following key actions:

- Each course instructor was assigned to develop the CLOs for their respective courses.
- The CLOs were verified through a review process using OBE-3 and OBE-5 review forms by the curriculum committee. ([Reference 1.2-2](#))
- The development of CLOs followed the criteria outlined in OBE-3, with emphasis on the following areas ([Reference 1.2-3](#)):
 1. Alignment of CLOs with PLOs (OBE-3 Section 5)
 - Each CLO was designed to support the corresponding PLOs and promote lifelong learning skills.
 2. Alignment among CLOs, Teaching Methods, and Assessment (OBE-3 Section 6)
 - Teaching strategies and assessment methods were designed to correspond with each CLO.
 3. Assessment Design and Weighting Based on CLOs (OBE-3 Section 8)
 - Assessment methods and their respective weightings were clearly linked to the CLOs.

Development of CLOs Based on PLOs Version 2:

Following revisions to the OBE-2 document in response to recommendations from the curriculum review conducted by OPS MHESI, and the subsequent approval of the revised curriculum report by the Faculty Academic Committee on 25 April 2025, the program updated OBE-2 Section 5.3: Curriculum Mapping ([Reference 1.1-2](#)).

This updated curriculum mapping illustrates the design process of Course Learning Outcomes (CLOs) by showing a progressive alignment of learning outcomes across academic years, moving from lower to higher levels of learning. It also ensures alignment with the PLOs in all dimensions: knowledge, skills, ethics, and character.

For example, PLO 3, which focuses on applying mathematical knowledge to construct industrial models (classified at the **Apply** level), is introduced at the **Understand** level in first-year courses and advances to the **Apply** level in second-year courses and beyond.

The revised CLOs and PLOs will be implemented in the following academic year.

Verification and Approval Process of CLOs:

The program has implemented a systematic process for verifying and approving CLOs and the preparation of OBE-3 review forms through an internal review mechanism. This process is carried out by the Learning Outcomes Verification Committee, and involves departmental meetings before submission to the faculty and the university.

A key principle in this process is that every CLO must be clearly aligned with the relevant PLOs. According to the results of the review conducted in the academic year 2024, all courses successfully passed the verification process, and their CLOs were found to be fully aligned with the corresponding PLOs. ([Reference 1.2-2](#))

Reporting and Assessment of Learning Outcomes (CLOs):

At the end of each semester, course instructors are required to report student learning outcomes in the OBE-5 form, which includes the following key components:

1. Support for student achievement of CLOs (OBE-5 Section 2)
2. Alignment between assessment methods and instructional approaches for each CLO (OBE-5 Section 3)
3. Student achievement levels for each CLO, along with assessment strategies and criteria (OBE-5 Section 6)

([Reference 1.2-4](#))

In addition, the program conducts verification of the OBE-5 forms by cross-checking them against the corresponding OBE-3 forms, to ensure consistency in assessment design. The review results from the academic year 2024 confirmed that all courses had assessment methods that were feasibly implemented and properly aligned with the stated CLOs. ([Reference 1.2-2](#))

Self-assessment	1	2	3	4	5	6	7
Req.-1.2: The programme to show that the expected learning outcomes for all courses are appropriately formulated and are aligned to the expected learning outcomes of the programme.				✓			

Req.-1.3: The programme to show that the expected learning outcomes consist of both generic outcomes (related to written and oral communication, problem solving, information technology, teambuilding skills, etc) and subject specific outcomes (related to knowledge and skills of the study discipline).

The program has formulated PLOs to comprehensively cover the following domains:

- **Generic outcomes** such as communication, information technology usage, analytical thinking, and teamwork.
- **Subject-specific outcomes** including knowledge in Optimization, Industrial Data Analysis, Simulation, Coding, and Problem-Solving in Industrial Systems.

In addition, the university has designated the learning outcomes of general education courses as PLO1, which consists of five sub-PLOs. Therefore, the program has defined its additional outcomes starting from PLO2 onward. These PLOs can be categorized into generic and subject-specific outcomes as follows:

PLOs Version 1 – Based on OBE-2 Version 1

The curriculum includes a total of 8 PLOs, categorized as shown in Table 1 of [Reference 1.3-1](#).

PLOs Version 2 – Based on OBE-2 Version 2

The updated version contains 11 PLOs, classified in Table 2 of [Reference 1.3-1](#).

All PLOs were designed with reference to Bloom's Taxonomy, covering all levels of learning ranging from understanding basic concepts to analysis, synthesis, and evaluation.

This design ensures that students are well-prepared for work in international industrial environments and for lifelong learning.

Self-assessment	1	2	3	4	5	6	7
Req.-1.3: The programme to show that the expected learning outcomes consist of both generic outcomes (related to written and oral communication, problem solving, information technology, teambuilding skills, etc) and subject specific outcomes (related to knowledge and skills of the study discipline).				✓			

Req.-1.4: The programme to show that the requirements of the stakeholders, especially the external stakeholders, are gathered, and that these are reflected in the expected learning outcomes.

The program places great importance on stakeholder needs in the formulation of PLOs. The development process was carried out as follows:

1. Compilation of fundamental curriculum requirements and collection of data from key stakeholders

- Identification and consolidation of the program's core requirements (see Table 1 in [Reference 1.1-7](#)).
- Identification of key stakeholders relevant to the program and collection of their input, as presented in Table 1.4.1.

Table 1.4.1 Stakeholder Identification and Input for PLO Formulation

Stakeholder Group	Stakeholder Analysis	Needs Assessment Method
1. Industry/Employers	High Power High Impact	Interviews with industry representatives and data collection from official websites (Reference 1.4-1)
2. Current Students	High Impact	Not applicable – the program is newly established (launched in 2023)
3. Teaching Staff	High Impact	Departmental meetings and discussions
4. Faculty and University	High Power High Impact	Consideration of the university's and faculty's vision, mission, and philosophy (See Tables 1–3 in Reference 1.1-7)
5. Curtin University	High Power High Impact	Discussions and details stated in the Memorandum of Understanding (Reference 1.1-2)

Stakeholder Group	Stakeholder Analysis	Needs Assessment Method
6. MHESI (Ministry of Higher Education, Science, Research and Innovation)	High Power	Specification of four core learning outcome domains according to the 2022 Higher Education Qualification Framework (Reference 1.1-6)
7. Lifelong Learning Skills	High Power	Identification of essential lifelong learning skills for the program (Reference 1.4-2)

Note:

- **High Power** refers to organizations or groups whose needs and opinions hold significant influence over the curriculum, particularly in defining learning outcomes. Examples include the faculty, university administration, or the Ministry of Higher Education, Science, Research and Innovation (MHESI).
- **High Impact** refers to organizations or groups that are highly affected by the implementation of the curriculum, such as students, academic staff, or industry employers.
- Stakeholder groups prioritized for data collection regarding learning needs and required competencies must be classified as **High Impact** and/or **High Power**, although data from other sources may also be considered.

2. Translating Stakeholder Needs into the Design of Learning Outcomes

Based on the data collected from the stakeholders mentioned above, the program committee and teaching staff analyzed and synthesized the information to formulate PLOs, as documented in [Reference 1.1-4](#).

Further details on how stakeholder input was reflected in the development of the PLOs are presented in [Reference 1.4-1](#).

3. Revision of PLOs

The program has developed two versions of the PLOs, each corresponding to different stages of implementation and purposes:

- **PLOs Version 1** – Based on OBE-2 Version 1

This version was used in the proposal submitted to OPS MHESI for the approval of the new program. It was also implemented in teaching and learning for the academic year 2024, covering both the first and second semesters. Details are provided in Table 1 of [Reference 1.1-4](#).

- **PLOs Version 2** – Based on OBE-2 Version 2

This revised version was enhanced to ensure greater completeness, developed in accordance with recommendations from MHESI. It will be implemented in teaching and learning starting from the following academic year. Details are presented in Table 2 of [Reference 1.1-4](#), along with [Reference 1.1-2](#) and [Reference 1.1-3](#).

Self-assessment	1	2	3	4	5	6	7
Req.-1.4: The programme to show that the requirements of the stakeholders, especially the external stakeholders, are gathered, and that these are reflected in the expected learning outcomes.				✓			

Req.-1.5: The programme to show that the expected learning outcomes are achieved by the students by the time they graduate

Monitoring and Assessment of Student Learning Outcomes:

The program has developed a structured approach to monitor and evaluate the achievement of student learning outcomes. This includes an annual assessment system that analyzes student performance in each course and aligns with the Yearly Learning Outcomes (YLOs), which are sequentially organized according to the students' year of study. The YLOs are structured to progressively equip students with the essential knowledge and skills throughout the four years of study, thereby supporting the systematic and integrated achievement of the PLOs.

The YLOs are explicitly mapped to the relevant PLOs, with clearly defined assessment methods as presented in [Reference 1.5-1](#) and [Reference 1.5-2](#).

In the academic year 2024, the program conducted a formal monitoring and assessment of YLO achievement for first-year students. The results are documented in [Reference 1.5-3](#).

Development and Supportive Activities for Achieving PLOs:

In addition, during the 2024 academic year, the program implemented co-curricular activities aimed at enhancing student development. One key initiative was the English Language Skill Development Project for first-year students, designed to improve comprehensive communication skills. This activity supported the attainment of PLO 2 (Version 1) and PLO 7 (Version 2). ([Reference 1.5-4](#))

Self-assessment	1	2	3	4	5	6	7
Req.-1.5: The programme to show that the expected learning outcomes are achieved by the students by the time they graduate.				✓			

Criterion 2: Programme Structure and Content

Req.-2.1: The specifications of the programme and all its courses^c are shown to be comprehensive, up-to-date, and made available and communicated to all stakeholders.

The Bachelor of Science Program in Industrial Optimisation and Applications (International Program), Faculty of Science, Maejo University, is a newly established program in 2023 (B.E. 2566). The program was developed as a result of a Memorandum of Understanding (MoU) between Maejo University and Curtin University ([Reference 2.1-1](#)).

The program has been designed through a structured system and mechanism for curriculum and course development, involving meetings and approvals at the program, faculty, and university levels. Additionally, it has been submitted and processed through the CHECO system as of February 27, 2025, with the submission status **P/1: Curriculum alignment reviewed and program code issued** ([Reference 2.1-2](#)).

In addition, the curriculum has been reviewed by the Office of the Permanent Secretary for Higher Education, Science, Research and Innovation (OPS MHESI), which recommended further refinement of the OBE-2 document for greater completeness. In response, the curriculum committee enhanced the context analysis of the program and clearly specified the Basic Requirements and key Stakeholders in Appendix 9: Curriculum Design, Data Analysis, and Program Learning Outcomes Determination (pages 158–170) ([Reference 2.1-3](#)). This appendix illustrates the process of data collection and analysis of stakeholder needs, and the formulation of curriculum and course characteristics that are up-to-date and responsive to industry demands—particularly in data analysis.

Furthermore, the curriculum committee revised and clarified the Program Learning Outcomes (PLOs) and Yearly Learning Outcomes (YLOs) without affecting the structure of the first-year curriculum ([Reference 2.1-4](#)).

The program has disseminated the revised OBE-2 document, which has been updated according to the recommendations from the Office of the Permanent Secretary for Higher Education, the Faculty of Science Academic Committee, and the Faculty Board. Dissemination has been conducted via the program's official [webpage](#) and the [Faculty of Science website](#), the student LINE group ([Reference 2.1-5](#)), and [Microsoft Teams](#).

For OBE-3 in the academic year 2024, the program requires instructors to present detailed course information through course syllabi ([Reference 2.1-6](#)). Additionally, both students and instructors can access OBE-3 information via the [website](#) of the Office of Academic Administration and Development, Maejo University

Self-assessment	1	2	3	4	5	6	7
Req.-2.1: The specifications of the programme and all its courses are shown to be comprehensive, up-to-date, and made available and communicated to all stakeholders.				✓			

Req.-2.2: The design of the curriculum is shown to be constructively aligned^D with achieving the expected learning outcomes.

According to Req.-2.1, which outlines the characteristics of the program, curriculum design, and revisions made in OBE-2, the program has defined PLOs or Expected Learning Outcomes (ELOs) by aligning CLOs with the PLOs. The alignment demonstrates a progression from lower to higher levels of competency.

As illustrated in Table 2.2.1, in the first year, students are expected to achieve PLO 2 and PLO 3 through courses 10315111 or 10315112, but not PLO 4. Students will attain PLO 4 through course 10315261 in the second year. ([Reference 01 OBE-2 Version1, pp. 22 – 27](#))

Table 2.2.1 Table Showing the Competency Levels of Each Course in OBE-2 Version1

Course	PLOs							
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8
10315111 Calculus for Industry I		●	●					
10315112 Calculus for Industry II		●	●					
10315261 Mathematical Modelling for Industry		●	●	●				

This corresponds with the example courses listed in Table 2.2.2, where in the first year, students will achieve PLO 2 and PLO 9 through Course 10315111 or 10315112. However, they will not yet achieve PLO 3. Students will attain PLO 3 through Course 10315261 in the second year. ([Reference 02 OBE-2 Version2, pp. 22 – 27](#))

Table 2.2.2 Table Showing the Competency Levels of Each Course in OBE-2 Version2

Course	PLOs										
	PLO1	PLO 2 (Und)	PLO 3 (App)	PLO 4 (App)	PLO 5 (App)	PLO 6 (Ana)	PLO 7 (Mec)	PLO 8 (Ada)	PLO 9 (Val)	PLO 10 (Org)	PLO 11 (Int)
10315111 Calculus for Industry I		(Und) Und	(App) Und				(Mec) Gui		(Val) Val		
10315112 Calculus for Industry II		(Und) Und	(App) Und				(Mec) Gui		(Val) Val		
10315261 Mathematical Modelling for Industry		(Und) Und	(App) App				(Mec) Gui		(Val) Val	(Org) Val	(Int) Val

Note: The parentheses indicate the competency levels of each PLO.

Furthermore, the program has also defined YLOs that are aligned with the achieved PLOs, along with assessment methods. These include student self-assessment through questionnaires or student performance on standardized tests. ([Reference 2.2-4, page170; and the program's criteria for assessing achievement of CLOs and PLOs.](#)) In the academic year 2024, the assessment results are presented in Req.-1.5.

Self-assessment	1	2	3	4	5	6	7
Req.-2.2: The design of the curriculum is shown to be constructively aligned with achieving the expected learning outcomes.				✓			

Req.-2.3: The design of the curriculum is shown to include feedback from stakeholders, especially external stakeholders.

According to Req.-2.1, which outlines the characteristics, design, and detailed revisions of the curriculum as presented in OBE-2, the curriculum committee has conducted content analysis to classify the obtained information as either **wants** or **needs** from various stakeholder groups. These stakeholders include companies such as Data Wow Co., Ltd., AIS Data Analytics, and KBTG (Kasikorn Business-Technology Group), among others ([Reference 2.1-3, pp. 158–168](#)).

Furthermore, in the academic year 2025, the program plans to invite external stakeholders for discussions and needs assessments in preparation for the curriculum review and development for the year 2028.

Self-assessment	1	2	3	4	5	6	7
Req.-2.3: The design of the curriculum is shown to include feedback from stakeholders, especially external stakeholders.			✓				

Req.-2.4: The contribution made by each course in achieving the expected learning outcomes is shown to be clear.

According to Req.-2.1, which outlines the characteristics of the curriculum, curriculum design, and the revision of details in OBE-2, the program demonstrates the process of designing CLOs that effectively support and promote the achievement of PLOs.

Within the curriculum, there are multiple courses that support and contribute to the achievement of each PLO. Examples of these courses are illustrated in Tables 2.4.1 and 2.4.2 as follows:

Table 2.4.1 Table showing the courses that support the achievement of each PLO.

Course	PLOs							
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8
10315111 Calculus for Industry I		●	●					
10315112 Calculus for Industry II		●	●					
10315261 Mathematical Modelling for Industry		●	●	●				
10315331 Applied Mathematical Modelling		●	●	●				

Course	PLOs							
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8
10315351 Computational Mathematics		●	●		●			
10315461 Dynamic and Stochastic Modelling and Optimisation		●	●	●		●		

From Table 2.4.1, ([Reference 01 OBE-2 Version1](#), pp. 22 – 27)

- There are six courses that support the achievement of PLO 2.
- There are six courses that support the achievement of PLO 3.
- There are three courses that support the achievement of PLO 4, for example.

Table 2.4.2 Table showing the courses that support the achievement of each PLO.

Course	PLOs										
	PLO1	PLO 2 (Und)	PLO 3 (App)	PLO 4 (App)	PLO 5 (App)	PLO 6 (Ana)	PLO 7 (Mec)	PLO 8 (Ada)	PLO 9 (Val)	PLO 10 (Org)	PLO 11 (Int)
10315111 Calculus for Industry I		(Und) Und	(App) Und				(Mec) Gui		(Val) Val		
10315112 Calculus for Industry II		(Und) Und	(App) Und				(Mec) Gui		(Val) Val		
10315261 Mathematical Modelling for Industry		(Und) Und	(App) App				(Mec) Gui		(Val) Val	(Org) Val	(Int) Val
10315331 Applied Mathematical Modelling		(Und) Und	(App) App				(Mec) Mec		(Val) Val	(Org) Val	
10315351 Computational Mathematics			(App) Und	(App) Und			(Mec) Mec	(Ada) Mec	(Val) Val	(Org) Val	
10315461 Dynamic and Stochastic Modelling and Optimisation		(Und) Und	(App) App	(App) App	(App) Und	(Ann) App	(Mec) Mec		(Val) Val	(Org) Org	(Int) Int

From Table 2.4.2, ([Reference 02 OBE-2 Version2](#), pp. 22 – 27)

- There are five courses that support the achievement of PLO 2.
- There are three courses that support the achievement of PLO 3.
- There are three courses that support the achievement of PLO 7.
- There are six courses that support the achievement of PLO 9, for example.

In addition, each course has defined CLOs that align with PLOs, as specified in the OBE-3 of each course ([Reference 2.4-1](#)).

Self-assessment	1	2	3	4	5	6	7
Req.-2.4: The contribution made by each course in achieving the expected learning outcomes is shown to be clear.				✓			

Req.-2.5: The curriculum to show that all its courses are logically structured, properly sequenced (progression from basic to intermediate to specialised courses), and are integrated.

The program has structured its curriculum to align with the requirements of Maejo University, which mandates a minimum of 120 credits, and those of Curtin University ([Reference 2.5-1](#), pp. 28–36). The program also includes a clear system for assigning course codes to distinguish courses by academic year ([Reference 2.5-1](#), pp. 36–38). This reflects a

logical progression of course sequencing from foundational to intermediate, and eventually to specialized courses ([Reference 2.5-2](#)).

In addition, the curriculum includes courses that emphasize integration within the compulsory major courses. For example, course 10315389: *Industrial Project*, focuses on developing strategies to achieve optimal outcomes aligned with one or more user-defined objective functions. It involves the integration of various processes, hands-on practice in industrial settings, and the preparation of a project report.

As for elective major courses, students may begin selecting these according to the study plan starting from the second semester of the second academic year. Examples include course 10315252: *Internet of Things for Industry*, which emphasizes the integration of programming knowledge with IoT systems to control agricultural systems; and course 10315365: *Network Optimization for Transportation and Logistics*, which applies mathematical knowledge in business contexts, including transportation planning and logistics, among others.

The program has established a systematic study plan by organizing courses in a sequential manner (with prerequisite courses) and structuring the learning outcomes progressively from lower to higher competency levels ([Reference 2.5-3](#), pp. 20–27).

Self-assessment	1	2	3	4	5	6	7
Req.-2.5: The curriculum to show that all its courses are logically structured, properly sequenced (progression from basic to intermediate to specialised courses), and are integrated.				✓			

Req.-2.6: The curriculum to have option(s) for students to pursue major and/or minor specialisations.

The program has a structured curriculum design that allows students to begin selecting elective major courses from Year 2, Semester 2 onward ([Reference 2.5-1](#), pp. 39–41). Students are required to complete no fewer than 30 credits (10 courses) of major electives. Of these, at least 24 credits (8 courses) must be chosen from the 16 designated major elective courses specified by the program. The remaining elective credits may be fulfilled by selecting additional courses from the designated list or by choosing relevant courses offered by the Mathematics Program, the Statistics and Information Management Program, or the Computer Science Program listed in the OBE-2 documentation. Other related courses may also be selected with the approval of the program director, for at least 6 additional credits ([Reference to 2.5-3](#), pp. 24–27).

For core and compulsory major courses, students are required to follow the prescribed courses of the program in alignment with the courses specified by Curtin University as outlined in the Memorandum of Understanding (MoU).

Additionally, for the Free Elective category, students may select any course offered by the university, totaling not less than 6 credits.

Self-assessment	1	2	3	4	5	6	7
Req.-2.6: The curriculum to have option(s) for students to pursue major and/or minor specialisations.				✓			

Req.-2.7: The programme to show that its curriculum is reviewed periodically following an established procedure and that it remains up-to-date and relevant to industry.

The Bachelor of Science Program in Industrial Optimisation and Applications (International Program) is a newly established curriculum in 2023 (B.E. 2566) and commenced its first academic year in 2024 (B.E. 2567). Therefore, no curriculum review process has been conducted during this year.

However, since the program was developed under a Memorandum of Understanding (MoU) with Curtin University, any updates or modifications to courses made by Curtin University to enhance relevance and responsiveness to industry needs will prompt a corresponding mechanism within this program for curriculum revision and improvement.

Self-assessment	1	2	3	4	5	6	7
Req.-2.7: The programme to show that its curriculum is reviewed periodically following an established procedure and that it remains up-to-date and relevant to industry.			✓				

Criterion 3: Teaching and Learning Approach

Req.-3.1: The educational philosophy is shown to be articulated and communicated to all stakeholders. It is also shown to be reflected in the teaching and learning activities.

The philosophy of the program is outlined in Section 2 of the OBE-2 document ([Reference 3.1-1](#) /[Reference 3.1-2](#)). It is designed to be in alignment with both Maejo University's educational philosophy and PLOs, as detailed below:

1. Alignment Between Educational Philosophy, PLOs, and Teaching and Learning Design

The program has analyzed the alignment between the following components:

- The educational philosophy of Maejo University
- The educational philosophy of the program
- The Programme Learning Outcomes (PLOs)

This alignment is clearly reflected through the PLOs (see Tables 1–5 in [Reference 3.1-3](#)).

The philosophy has been integrated into the curriculum through various learning activities that support both the PLOs and the program's educational philosophy, such as:

- Orientation for first-year students
- Introduction to industrial mathematics research
- Academic service projects in science and technology
- English skill development program for first-year students ([Reference 3.1-4](#))

In addition, instructional design is closely aligned with both the CLOs and PLOs, which in turn reflect the educational philosophy. This alignment is documented in the OBE-3 and OBE-5 forms of all courses offered in Academic Year 2024. ([Reference 3.1-5](#))

2. Communication of the Educational Philosophy to Stakeholders

The program has taken steps to communicate its educational philosophy to relevant stakeholders, such as:

- **Students:** through academic advisory sessions held prior to the start of the semester ([Reference 3.1-6](#))
- **Faculty members:** through program meetings and the preparation of AUN-QA documentation ([Reference 3.1-7](#), [Agenda 3-4](#))

In addition, the program plans to develop an official website in the next academic year to provide access to key information including the educational philosophy, vision, mission, curriculum structure, and PLOs. This initiative aims to enhance accessibility and promote wider understanding of the program's core values. ([Reference 3.1-8](#))

Self-assessment	1	2	3	4	5	6	7
Req.-3.1: The educational philosophy is shown to be articulated and communicated to all stakeholders. It is also shown to be reflected in the teaching and learning activities.				✓			

Req.-3.2: The teaching and learning activities are shown to allow students to participate responsibly in the learning process.

In the academic year 2024, the program actively participated students in the teaching and learning process in the following ways:

1. Student participation in instructional design has been explicitly included in Section 4 of the OBE-3 documents for all courses. ([Reference 3.1-5](#))
2. Course instructors designed learning activities that promote student participation, as reported in the OBE-3 and OBE-5 forms of each course.

For example, in the course 10315131: Differential Equations and Industrial Applications, students participated in the following ways:

- Formed project groups based on their own interests
- Selected their preferred presentation dates based on readiness
- Completed a take-home exam in which they chose how to apply differential equations to real-world problems

3. Student feedback was used to design co-curricular activities.

From a survey of first-year students, it was found that they were interested in attending industrial field trips related to industrial mathematics. As a result, the program organized a study visit in May 2025, which was originally scheduled for third-year students ([Reference 3.2-1](#)). This experience proved to be highly motivational, with students expressing increased enthusiasm and career aspiration in their field of study.

([Reference 3.2-2](#))

Self-assessment	1	2	3	4	5	6	7
Req.-3.2: The teaching and learning activities are shown to allow students to participate responsibly in the learning process.				✓			

Req.-3.3: The teaching and learning activities are shown to involve active learning by the students.

The program has systematically designed instructional activities in all courses to align with Active Learning principles. The emphasis is placed on engaging students in the learning process through critical thinking, analytical skills, and hands-on practice.

The instructional design integrates the following key components of Active Learning:

1. Advanced Thinking Based Learning – learning through higher-order thinking

2. Learning by Doing – learning through real practice
3. Cooperative Learning – learning through group collaboration
4. Inquiry-Based Learning – learning through exploration and questioning

For all courses offered in Academic Year 2024, the Active Learning strategies are clearly specified in Section 6 of the OBE-3 documents. ([Reference 3.1-5](#))

Examples of Active Learning Activities in the Program:

- **10315111 Calculus for Industry I:** Students work collaboratively in groups to solve problems using analytical thinking exercises.
- **10315112 Calculus for Industry II:** Students work collaboratively in groups to solve problems using analytical thinking exercises.
- **10315113 Introduction to Linear Algebra:** Students work collaboratively in groups to solve problems using analytical thinking exercises.
- **10315114 Introduction to Scientific Computing:** Students work collaboratively in groups to solve problems using analytical thinking exercises.
- **10315115 Probability and Data Analysis:** Students work collaboratively in groups to solve problems using analytical thinking exercises.
- **10315131 Differential Equation and Industrial Applications:** Students work collaboratively in groups to solve problems using analytical thinking exercises and are assigned group projects, which they present orally.
- **10315132 Combinatorics and its Applications:** Students work collaboratively in groups to solve problems using analytical thinking exercises.

Self-assessment	1	2	3	4	5	6	7
Req.-3.3: The teaching and learning activities are shown to involve active learning by the students.				✓			

Req.-3.4: The teaching and learning activities are shown to promote learning, learning how to learn, and instilling in students a commitment for life-long learning (e.g., commitment to critical inquiry, information-processing skills, and a willingness to experiment with new ideas and practices).

The curriculum has integrated lifelong learning skills as part of the key stakeholders and data collection process ([Reference 2.1-3, pp. 160–161](#)). These stakeholders fall into the "High Power" group (organizations/individuals whose opinions or essential needs have significant influence on the curriculum in determining learning outcomes). Lifelong learning skills ([Reference 3.4-1](#)) are also explicitly stated in all course syllabi under OBE-3 ([Reference 2.4-1](#)).

In the academic year 2024 (B.E. 2567), all courses have incorporated lifelong learning skills (LLs) in **OBE-3, Section 5: Alignment between Program Learning Outcomes (PLOs), Course Learning Outcomes (CLOs), and Lifelong Learning Skills (LLs)** ([Reference 3.4-2](#)). Additionally, the teaching methods and assessment approaches

for lifelong learning skills are reported in all **OBE-5, Section 3: Alignment of Learning Outcomes, Teaching Methods, and Assessment** ([Reference: 3.4-3](#)). These efforts aim to promote student learning aligned with the intended program learning outcomes.

Self-rating	1	2	3	4	5	6	7
Req.-3.4: The teaching and learning activities are shown to promote learning, learning how to learn, and instilling in students a commitment for life-long learning (e.g., commitment to critical inquiry, information-processing skills, and a willingness to experiment with new ideas and practices).				✓			

Req.-3.5: The teaching and learning activities are shown to inculcate in students, new ideas, creative thought, innovation, and an entrepreneurial mindset.

In the academic year 2024 (B.E. 2567), the program organized the following activities that foster students' creativity, innovation, and entrepreneurial mindset:

1. English Skills Development Project for First-Year Students (Academic Year 2024)

This project was organized to enhance English language skills, particularly in communication and presentation, for first-year students. ([Reference 3.5-1](#))

2. Curtin University Preparation Program (Australia)

This program was organized to provide first-year students with knowledge and understanding regarding further study pathways at Curtin University, Australia. The session was conducted by experts from Curtin University. ([Reference: 3.5-2](#))

3. Industrial Optimization and Application Field Trip Program

This program was organized to allow students to gain insights into real-world operations within industrial settings. Students observed how principles of Industrial Optimization are applied in production and management processes. The objective was also to inspire students to develop their potential and prepare for future careers. ([Reference: 3.5-3](#))

Self-rating	1	2	3	4	5	6	7
Req.-3.5: The teaching and learning activities are shown to inculcate in students, new ideas, creative thought, innovation, and an entrepreneurial mindset.				✓			

Req.-3.6: The teaching and learning processes are shown to be continuously improved to ensure their relevance to the needs of industry and are aligned to the expected learning outcomes.

The program has designated **Active Learning** as one of its **Key Performance Indicators (KPIs)** for curriculum implementation. This is stated in OBE-2, Element 8, Item 2: Key Performance Indicators of the Program ([Reference 3.6-1, pp. 57](#)).

In the academic year 2024 (B.E. 2567), the program reported that all courses implemented student-centered learning through Active Learning strategies. This is documented in OBE-3, Section 5: Alignment between Program Learning Outcomes (PLOs), Course Learning Outcomes (CLOs), and Lifelong Learning Skills (LLs) ([Reference 2.4-1](#)).

Furthermore, the teaching methods and assessments related to lifelong learning skills using Active Learning approaches were reported in OBE-5, Section 3: Mapping of Learning Outcomes, Teaching Methods, and Assessments ([Reference: 3.4-3](#)).

This ensures that the teaching and learning processes are aligned with the program's learning outcomes.

Self-rating	1	2	3	4	5	6	7
Req.-3.6: The teaching and learning processes are shown to be continuously improved to ensure their relevance to the needs of industry and are aligned to the expected learning outcomes.				✓			

Criterion 4: Student Assessment

Req.-4.1: A variety of assessment methods are shown to be used and are shown to be constructively aligned to achieving the expected learning outcomes and the teaching and learning objectives.

The program has established student assessment methods that are aligned with the intended learning outcomes and the learning achievements. The assessment formats and their respective weightings are clearly specified in Section 8 of the OBE-3 form for each course, and are aligned with PLOs Version. ([Reference 4.1-1](#))

For example:

- In the course **10315131: Differential Equations and Industrial Applications**, assessment includes written exams, oral presentations, and assigned work submissions. ([Reference 4.1-2](#))
- In the course **10315114: Introduction to Scientific Computing**, assessment is based on written exams, lab work, and group project. ([Reference 4.1-3](#))

All courses are verified for CLO alignment through the OBE-3 review process, conducted by the curriculum committee ([Reference 4.1-4](#)), to ensure alignment between each CLO and its corresponding PLO. ([Reference 4.1-5](#))

Self-assesment	1	2	3	4	5	6	7
Req.-4.1: A variety of assessment methods are shown to be used and are shown to be constructively aligned to achieving the expected learning outcomes and the teaching and learning objectives.				✓			

Req.-4.2: The assessment and assessment-appeal policies are shown to be explicit, communicated to students, and applied consistently.

The program informs students of the channels and procedures for appealing assessment results through academic advisory sessions conducted by program advisors. ([Reference 4.2-1](#))

In addition, all course instructors are required to communicate the appeal process clearly to students in the first class session, as documented in the course syllabus. ([Reference 4.2-2](#))

If a complaint is submitted, the Faculty of Science and the university follow an established process, which includes:

- Listening to both the instructor and the student,
- Reviewing the issue in a committee meeting,
- Establishing a resolution plan, and
- Informing the student of the appeal outcome within two weeks.

Maejo University and Faculty of Science has also provided multiple official channels for students to file complaints, including:

- University's Direct Line via [Maejo University Student Complaint Center website](#)

- Dean's Direct Line via [the Faculty of Science website](#)
- Teaching Evaluation System via [the Office of Academic Services website](#)

Both the university and the Faculty of Science will coordinate with the program to develop appropriate solutions as needed.

In Academic Year 2024, no formal student appeals were reported.

Self-assessment	1	2	3	4	5	6	7
Req.-4.2: The assessment and assessment-appeal policies are shown to be explicit, communicated to students, and applied consistently.				✓			

Req.-4.3: The assessment standards and procedures for student progression and degree completion, are shown to be explicit, communicated to students, and applied consistently.

The program has established an assessment process to monitor student progression. In Academic Year 2024, teaching and learning activities were conducted in accordance with the OBE-2 Version 1 for first-year students. ([Reference 4.1-1, pp. 54–55](#))

Students were informed of the grading criteria, graduation requirements, and conditions for degree conferment through academic advising sessions conducted by the program's advisors. ([Reference 4.2-1](#))

Advisors were also assigned to support students in completing their studies within the expected timeframe, in accordance with the Maejo University Regulations on Undergraduate Education. ([Reference 4.3-1](#))

The program regularly holds curriculum committee meetings to monitor student academic progress ([Reference 4.3-2, Agenda 3.1](#)). These meetings review the relationship between YLOs, PLOs, and the assessment methods used to evaluate student progress. ([Reference 4.3-3](#))

Additionally, the program has revised and enhanced the OBE-2 document based on recommendations from OPS MHESI. These revisions include improvements to the clarity of PLOs, elective course structures, and methods for assessing YLOs, which will be officially implemented starting from the upcoming academic year. ([Reference 4.3-4](#))

Self-assessment	1	2	3	4	5	6	7
Req.-4.3: The assessment standards and procedures for student progression and degree completion, are shown to be explicit, communicated to students, and applied consistently.				✓			

Req.-4.4: The assessments methods are shown to include rubrics, marking schemes, timelines, and regulations, and these are shown to ensure validity, reliability, and fairness in assessment.

The program has clearly defined assessment methods, grading criteria, scoring rubrics, and grading methods in Section 8 of the OBE-3 document ([Reference 4.4-1](#)). These assessment plans are subject to validation through the OBE-3 review process ([Reference 4.1-4](#)).

A variety of assessment methods are used to evaluate student learning outcomes, including:

- Written examinations
- Attendance records
- Assignment submissions

At the end of each semester, instructors assign students' final scores or grades based on these criteria ([Reference 4.4-2](#)).

The results are subsequently validated through the OBE-5 review process ([Reference 4.1-4](#)) and then submitted to the program committee for approval. ([Reference 4.4-3](#), Agenda 4)

After the program committee's review, the results are forwarded to the Faculty Board for approval, and then submitted to the Office of Academic Administration and Development for official announcement to students.

This entire process demonstrates that the assessment system is valid, reliable, and fair.

Self-assesment	1	2	3	4	5	6	7
Req.-4.4: The assessments methods are shown to include rubrics, marking schemes, timelines, and regulations, and these are shown to ensure validity, reliability, and fairness in assessment.				✓			

Req.-4.5: The assessment methods are shown to measure the achievement of the expected learning outcomes of the programme and its courses.

The program has developed a structured approach for monitoring and evaluating students' achievement of learning outcomes. It has established specific assessment criteria for the attainment of both CLOs and PLOs, along with a year-by-year assessment system aligned with the academic progression of students. ([Reference 4.5-1](#))

This system is designed to guide students in gradually achieving YLOs, allowing them to accumulate the knowledge and skills necessary to fully attain the PLOs within the four-year program. The YLOs are systematically mapped to the corresponding PLOs, and each is accompanied by defined assessment methods.

The alignment between YLOs and PLOs, including the assessment approach, is illustrated in Table 1 – for YLOs under OBE-2 Version 1 and Table 2 – for YLOs under OBE-2 Version 2. ([Reference 4.3-3](#))

Self-assesment	1	2	3	4	5	6	7
Req.-4.5: The assessment methods are shown to measure the achievement of the expected learning outcomes of the programme and its courses.				✓			

Req.-4.6: Feedback of student assessment is shown to be provided in a timely manner.

The program has established clear regulations requiring instructors to provide formative assessment results and systematic feedback to students in all courses. This is to ensure that students have opportunities to reflect and improve throughout the learning process. Each instructor is required to specify the feedback and assessment procedures in both the OBE-3 form and the course syllabus. ([Reference 4.4-1](#) / [Reference 4.4-2](#))

Examples of these procedures include:

- **Score correction process:** Students may appeal or request a review of mid-semester assessment scores within one week after each result is announced.
- **Appeal criteria:** Clearly specified in the course syllabus provided on the first day of class.
- **Student feedback:** Instructors actively collect informal feedback during class, such as after learning activities, assignment reviews, quizzes, and midterm assessments.

Additionally, at the end of each semester, the university conducts a formal student satisfaction survey for every course. Instructors are required to summarize their course evaluation results and reflections in the OBE-5 form. ([Reference 4.4-2](#))

The program chair (or designated curriculum advisor) is responsible for monitoring and reviewing these evaluation results in order to plan improvements for teaching and learning in subsequent semesters.

Self-assesment	1	2	3	4	5	6	7
Req.-4.6: Feedback of student assessment is shown to be provided in a timely manner.				✓			

Req.-4.7: The student assessment and its processes are shown to be continuously reviewed and improved to ensure their relevance to the needs of industry and alignment to the expected learning outcomes.

The program initially established the student assessment process as documented in OBE-2 Version 1 ([Reference 4.1-1](#)). Subsequently, the program undertook a review of the assessment system and developed a plan for its improvement. This led to a refinement

of CLOs and PLOs to enhance their clarity and effectiveness, as reflected in OBE-2 Version 2. ([Reference 4.3-4](#))

The revised version of OBE-2 includes defined assessment criteria to evaluate the achievement of CLOs and PLOs. It also introduces a structured year-by-year assessment system, aligned with students' academic progression. ([Reference 4.5-1](#))

These improvements respond to the expectations of stakeholders and align with the competency needs of the industrial sector. ([Reference 4.7-1](#))

Self-assesment	1	2	3	4	5	6	7
Req.-4.7: The student assessment and its processes are shown to be continuously reviewed and improved to ensure their relevance to the needs of industry and alignment to the expected learning outcomes.				✓			

Criterion 5: Academic Staff

Req.-5.1: The programme to show that academic staff planning (including succession, promotion, re-deployment, termination, and retirement plans) is carried out to ensure that the quality and quantity of the academic staff fulfil the needs for education, research, and service.

Academic Staff Workforce Planning Process

The program has organized joint meetings between the faculty members to assess the academic staff workforce requirements in terms of both quantity and quality. This process is based on the 4-year academic workforce plan of Maejo University, which is reviewed annually ([Reference 5.1-1](#)).

The program has the following process for workforce planning:

- Consider the necessity to drive the curriculum and support the missions (teaching, research, and services).
- Review the FTE (Full-Time Equivalent) as a measure of adequacy and efficiency of workforce utilization ([Reference 5.1-2](#)).
- Hold curriculum meetings for approval by the curriculum committee before submitting to the Faculty of Science for further processing.

From the analysis of academic staff workforce, it was found that the program has a sufficient number and quality of academic staff for all operations ([Reference 5.1-3](#)).

Academic Staff Details for Academic Year 2024

The program has 7 full-time academic staff members, all holding at least a Master's degree. They can be categorized by educational qualifications and academic positions as shown in Tables 5.1.1–5.1.2 ([Reference 5.1-4](#)).

Self-assessment	1	2	3	4	5	6	7
Req.-5.1: The programme to show that academic staff planning (including succession, promotion, re-deployment, termination, and retirement plans) is carried out to ensure that the quality and quantity of the academic staff fulfil the needs for education, research, and service.				✓			

Req.-5.2: The programme to show that staff workload is measured and monitored to improve the quality of education, research, and service.

Process for Measuring and Monitoring Workload

The program, under the supervision of the program committee, conducts workload measurement and evaluation for academic staff within the framework of the Faculty of Science Announcement regarding the criteria and methods for performance evaluation for

personnel under the Faculty of Science, Maejo University, for the fiscal years 2024-2025 ([Reference 5.2-1](#)).

For the fiscal years 2024–2025, a minimum workload is set for the four main missions (teaching, research, academic services, and cultural preservation).

The program follows this process:

- Academic staff prepare Terms of Reference (TOR) and record performance results in the university's Performance Management System (PMS).
- The program chairperson supervises, monitors, inspects, and provides comments on the workload via the PMS, with approval from the curriculum committee.
- The program checks individual workloads, detailing tasks in each mission area, and utilizes this data to improve the management of teaching, research, and academic services.

Self-assessment	1	2	3	4	5	6	7
Req.-5.2: The programme to show that staff workload is measured and monitored to improve the quality of education, research, and service.				✓			

Req.-5.3: The programme to show that the competences of the academic staff are determined, evaluated, and communicated.

Process for Defining and Evaluating Competencies of Academic Staff

Maejo University has officially defined competencies for academic staff through:

- Maejo University Competency Manual (Revised Edition, June 2011) ([Reference 5.3-1](#))
- Announcement of the Maejo University Personnel Management Committee 2019 and its second edition

Competency assessments are conducted for Core Competency, Functional Competency, and Managerial Competency regularly ([Reference 5.3-2](#)).

- Academic Government Civil Servants in Higher Education: Assessed every 6 months
- University Employees and Sectional Employees: Assessed every 12 months

The competency assessment process is carried out by the screening committee and the results are officially announced.

Details of Core Competencies and Functional Competencies

Core Competencies:

1. Learning Motivation
2. Teamwork and Networking

3. Creativity
4. Foreign Language Usage
5. Information Technology Skills

Functional Competencies:

1. Counseling/Advising Skills
2. Teaching Skills
3. Research and Innovation Skills
4. Academic Expertise
5. Enthusiasm and Role Model Behavior

Process for Communicating Competencies and Evaluation Results

- Competency assessment results are communicated individually to academic staff through the university's ERP system.
- There is a channel for staff to inquire or discuss self-development in the direction set by the faculty and the university.
- Annual workload agreements are prepared, demonstrating awareness and acceptance of the assessment criteria by the academic staff ([Reference 5.2-1](#)).

Self-assessment	1	2	3	4	5	6	7
Req.-5.3: The programme to show that the competences of the academic staff are determined, evaluated, and communicated.				✓			

Req.-5.4: The programme to show that the duties allocated to the academic staff are appropriate to qualifications, experience, and aptitude.

Process for Allocating Academic Staff Workload

The program allocates workloads based on data from Req.-5.1, which has been collected and analyzed as follows:

- Number of academic staff ([Reference 5.1-4](#))
- Experience and expertise ([Reference 5.4-1](#))
- Courses for which the staff are responsible ([Reference 5.4-3](#))
- Research topics of expertise ([Reference 5.4-1](#))

This workload allocation is reviewed by the program committee to ensure transparency and appropriateness based on the qualifications and abilities of each staff member.

Workload Allocation Results for Academic Year 2024

- The results of student evaluations of teaching in all courses were in the range of 4.50–5.00, indicating high levels of satisfaction and teaching effectiveness. ([Reference 5.4-2](#))

- The verification of teaching and learning management (OBE-3-4-5-6) was complete and covered all courses ([Reference 5.4-4](#)).

Self-assessment	1	2	3	4	5	6	7
Req.-5.4: The programme to show that the duties allocated to the academic staff are appropriate to qualifications, experience, and aptitude.				✓			

Req.-5.5: The programme to show that promotion of the academic staff is based on a merit system which accounts for teaching, research, and service.

Process for Measuring and Evaluating Performance for Promotion

The program operates within the framework of the criteria established by the Faculty of Science, based on Req.-5.3 and 5.4, which specify the criteria for performance evaluation covering quantity, quality, and competencies.

The announcement of criteria and methods for performance evaluation for personnel under the Faculty of Science for the fiscal years 2024–2025, which has been approved by the committee and representatives from all sectors ([Reference 5.2-1](#)). The evaluation results were subsequently communicated through the Performance evaluation review memorandum for the fiscal year 2024 ([Reference 5.5-1](#)).

The evaluation criteria include:

Teaching performance: success in teaching, student evaluations, verification of teaching and learning management (OBE-3-5).

Research performance: research output, publications, innovative research, research grants.

Academic service performance: academic services to society, training, lectures, consulting.

Work behavior and competencies: as specified in the Maejo University Competency Manual and faculty criteria ([Reference 5.2-1](#)).

Mechanisms for Fair and Transparent Operation

- Appointment of a screening committee for performance evaluation results at both university and faculty levels, consisting of representatives from academic and support staff, to review evaluation results fairly ([Reference 5.5-2](#)).
- All academic staff must prepare workload agreements and performance reports through the university's Performance Management System (PMS), which are approved by the program, faculty, and university.
- An appeal and grievance channel is available for staff who feel that the evaluation is unfair. The faculty will consider such grievances and revise criteria and methods as needed ([Reference 5.5-1](#)).

Performance Results for Fiscal Year 2025

- A flexible minimum workload is set to allow academic staff to choose areas of work where they excel, enabling them to fully demonstrate their potential and enhance their performance.
- Promotion and salary increment results are in line with the set criteria, and all staff achieved the minimum standard in their 2024 performance evaluations.

Self-assessment	1	2	3	4	5	6	7
Req.-5.5: The programme to show that promotion of the academic staff is based on a merit system which accounts for teaching, research, and service.				✓			

Req.-5.6: The programme to show that the rights and privileges, benefits, roles and relationships, and accountability of the academic staff, taking into account professional ethics and their academic freedom, are well defined and understood.

Defining Roles, Duties, and Responsibilities

The program defines the roles, duties, and responsibilities of academic staff based on:

- University employment position standards for academic staff.
- Minimum workload standards covering the four main missions: teaching, research, academic services, and cultural preservation.
- Faculty of Science announcement on criteria and methods for performance evaluation ([Reference 5.2-1](#)), covering clear roles, workload, behavior, and competencies.
- TOR and APS established with integrity and transparency, reviewed in curriculum meetings.
- Curriculum strategies and performance evaluation criteria covering clear roles, workload, behavior, and competencies ([Reference 5.6-4](#)).

Defining Benefits and Special Privileges

- Basic benefits such as leave, expense reimbursement, and medical treatment are defined according to university regulations and communicated through [the Human Resources Division website](#).
- Additional special privileges, such as individual professional development budgets for academic staff, are determined by the faculty and communicated via the ERP system and faculty website.

Promoting Ethics, Morality, and Academic Freedom

- The university has regulations on professional ethics and a faculty code of ethics manual ([Reference 5.6-1](#), and [5.6-2](#)), covering ethics towards colleagues, institutions, and society.

- Programs to promote ethics and morality, such as the Academic Staff Capacity Building Program on Ethics and Professional Code of Conduct ([Reference 5.6-3](#)).
- Clear communication through training, meetings, the university website, and staff council publicity.

Communication and Understanding

- All academic staff prepare annual workload agreements approved by the curriculum, faculty, and university to confirm acknowledgment of roles, duties, and assessment criteria.
- OBE-3-5 reports detail teaching roles and responsibilities for each course.
- Communication channels include the ERP system, university website, faculty website, and curriculum meetings.

Performance Results

- In the academic year 2024, the program had no complaints regarding ethics, program management, or workload assignment, indicating understanding of the roles, duties, and benefits of academic staff.

Self-assessment	1	2	3	4	5	6	7
Req.-5.6: The programme to show that the rights and privileges, benefits, roles and relationships, and accountability of the academic staff, taking into account professional ethics and their academic freedom, are well defined and understood.				✓			

Req.-5.7: The programme to show that the training and developmental needs of the academic staff are systematically identified, and that appropriate training and development activities are implemented to fulfil the identified needs.

Process for Analyzing Development Needs of Academic Staff

Maejo University conducts Training and Learning Needs Analysis to prepare staff for their work, address performance, behavior, and other work, organizational, and personal issues([Reference 5.7-1](#)).

Sources of information for analyzing development needs include:

- Performance evaluation results
- Staff-reported needs through Individual Development Plans (IDP)
- Budget requests for self-development and research funding
- Meetings and feedback from staff

Support and Implementation Process for Development Needs

The program supports the development of academic staff by:

- Surveying self-development needs (2024–2028) ([Reference 5.7-2](#)).

- Using the university's online IDP system to develop individual staff members, with oversight and monitoring by the program chairperson ([Reference 5.7-3](#)).

Supporting activities include:

- Sending staff to attend training seminars, study visits, online training, and various development activities as outlined in the plan.
- Providing budget and resources to enhance staff capacity.

Self-assessment	1	2	3	4	5	6	7
Req.-5.7: The programme to show that the training and developmental needs of the academic staff are systematically identified, and that appropriate training and development activities are implemented to fulfil the identified needs.				✓			

Req.-5.8: The programme to show that performance management including reward and recognition is implemented to assess academic staff teaching and research quality.

Process for Evaluating and Managing Performance Results

Maejo University has established clear performance evaluation criteria for the fiscal year 2024 ([Reference 5.2-1](#)), with a transparent implementation process as follows:

Performance evaluation covers both quantitative and qualitative workloads. The use of information technology systems to store and evaluate data enhances the accuracy and traceability of performance management.

The results are reviewed by the performance evaluation screening committee, which includes representatives from all sectors ([Reference 5.5-2](#)).

Criteria for Assessing Competence and Performance

The evaluation criteria include:

- Teaching: no less than 15 hours per week
- Research and Academic Work: no less than 6 hours per week
- Academic Services: no less than 3 hours per week
- Cultural Preservation: 1 hour per week

The program also evaluates work competency and behavior, with the program chairperson serving as the evaluator.

Reward and Recognition System

The university considers allocating budget for salary/ wage increases, focusing on staff who contribute to the university's reputation at the program, faculty, and university levels. The results of the budget allocation are announced officially and transparently to all

staff ([Reference 5.5-1](#)). Moreover, the university also recognizes outstanding faculty members in various areas.

Performance Results

- There were no complaints regarding the evaluation process, salary increments, and wages in the fiscal year 2024.
- The use of information technology has made the evaluation process transparent and traceable.
- Academic staff are evaluated based on actual workloads and performance, reflecting the quality of teaching and research.
- One of the program staff members received an academic award for research presentation ([Reference 5.8-1](#)).

Self-assessment	1	2	3	4	5	6	7
Req.-5.8: The programme to show that performance management including reward and recognition is implemented to assess academic staff teaching and research quality.				✓			

Criterion 6: Student Support Services

Req.-6.1: The student intake policy, admission criteria, and admission procedures to the programme are shown to be clearly defined, communicated, published, and up-to-date.

Process for Setting Admission Policies and Criteria

The program has a clear process for setting admission policies and criteria based on Maejo University Regulations on Undergraduate Education B.E. 2562 (2019), Section 4, which specifies general qualifications for eligible applicants ([Reference 6.1-1](#)).

The Faculty of Science admission committee, chaired by the Dean of the Faculty of Science, sets policies for admitting new students in accordance with the university's enrollment plan and the timeline set by the Council of University Presidents of Thailand (CUPT).

The program directly participates in determining the qualifications and intake numbers for Academic Year 2024 ([Reference 6.1-1](#)), aligned with the updated OBE-2 ([Reference 6.1-2](#)).

Admission Process and Procedures

The admission process for new students follows the System and Mechanisms for Student Admission for Academic Year 2024 ([Reference 6.1-1](#)), which shows clear steps including:

- Setting policies and intake numbers
- Announcing admissions through the university website, Office of Academic Administration and Development, and Faculty of Science
- Accepting applications during specified rounds each year (Portfolio, Quota, Admission, Direct Admission)
- Selection based on defined qualifications
- Announcing selected candidates
- Reporting and confirming the selected candidates' acceptance

Communication and Information Dissemination

- Announce admission policies and criteria through the university website, Office of Academic Administration and Development, Faculty of Science, and the program website
- Update information annually to reflect university announcements and national policies
- Publicize through Open House events, social media, websites, and printed materials to raise awareness among applicants

Performance Results

- In Academic Year 2024, the program has a transparent, clear student admission system in compliance with university regulations

- Communication is modern and reaches applicants both domestically and internationally
- No complaints about unclear policies or admission criteria

Self-assessment	1	2	3	4	5	6	7
Req.-6.1: The student intake policy, admission criteria, and admission procedures to the programme are shown to be clearly defined, communicated, published, and up-to-date.				✓			

Req.-6.2: Both short-term and long-term planning of academic and non-academic support services are shown to be carried out to ensure sufficiency and quality of support services for teaching, research, and community service.

Process for Planning Support Services

The program has systems and mechanisms for both short-term and long-term planning to ensure sufficient and high-quality support services, covering teaching, research, and academic services.

System and Mechanisms for Developing Projects of Faculty of Science in the Annual Action Plan 2024 ([Reference 6.2-1](#)) clearly illustrates the planning process, which begins with gathering proposals and needs from stakeholders → submitting them to the curriculum meeting → proposing them to the Faculty of Science → including them in the annual action plan.

- In Academic Year 2024, the program provided financial support for the capacity development of each staff member at 5,000 THB per person, and there is a plan to support specialized capacity development grants for staff ([Reference 6.2-2](#)).
- Developing a support services development plan that covers both academic aspects (e.g., academic workshops, library/database development) and non-academic aspects (e.g., facility improvements, mental health services, career services).
- Integrating needs from staff and students into strategic and annual action plans to plan for sustainable and responsive support services.
- Continuously evaluating and improving the plan based on feedback and performance results.

Performance Results

- In Academic Year 2024, the program has a comprehensive and systematic support service system covering both academic and non-academic aspects.
- Sufficient support has been provided to ensure quality in teaching, research, and academic services.
- No complaints were received regarding deficiencies or inadequacies in support services.

Self-assessment	1	2	3	4	5	6	7
Req.-6.2: Both short-term and long-term planning of academic and non-academic support services are shown to be carried out to ensure sufficiency and quality of support services for teaching, research, and community service.				✓			

Req.-6.3: An adequate system is shown to exist for student progress, academic performance, and workload monitoring. Student progress, academic performance, and workload are shown to be systematically recorded and monitored. Feedback to students and corrective actions are made where necessary.

The program has a systematic system and mechanisms to monitor student progress and academic performance according to the Monitoring System and Mechanisms for academic year 2024 ([Reference 6.3-1](#)). The process includes:

Progress Monitoring System

- Assigning academic advisors to monitor student progress through www.reg.mju.ac.th and co-curricular activities via www.erp.mju.ac.th.
- Providing academic guidance to students before registration to plan their studies according to the academic year plan ([Reference 6.3-2](#)).

Academic Performance Monitoring System

- Academic advisors monitor students' performance, especially those with a GPA below 2.00, through the online system (www.reg.mju.ac.th).
- Using multiple communication channels (phone, Line, Facebook, E-mail, MS Teams).
- Reporting inappropriate academic behavior from course instructors to the curriculum committee ([Reference 6.3-3](#)).

Study Load Monitoring System

- Academic advisors check the student load through www.reg.mju.ac.th.
- Course instructors evaluate students' performance and notify results before the last withdrawal date (W) as specified in OBE-3, Section 10, Item 1.4, and allow score corrections within one week after the announcement (Section 11) ([Reference 6.3-4](#)).

Feedback and Assistance

- Evaluation and monitoring results are brought to curriculum meetings for consideration and action planning.
- Students with academic performance or learning load issues are directly contacted by academic advisors and course instructors to find solutions.
- Open and student-friendly communication systems are in place.

Performance Results

- In academic year 2024, the system for monitoring student progress, academic performance, and study load operated systematically and transparently.
- No complaints were received about delays in reporting grades or lack of transparency in providing feedback.
- Study load as per the curriculum structure (not exceeding 21 credits per semester) is effectively controlled.

Self-assessment	1	2	3	4	5	6	7
Req.-6.3: An adequate system is shown to exist for student progress, academic performance, and workload monitoring. Student progress, academic performance, and workload are shown to be systematically recorded and monitored. Feedback to students and corrective actions are made where necessary.				✓			

Req.-6.4: Co-curricular activities, student competition, and other student support services are shown to be available to improve learning experience and employability.

The program has a clear mechanism for determining activities and support services according to the System and Mechanisms for Project Development in the Annual Action Plan 2024 ([Reference 6.2-1](#)) by:

- Designing co-curricular activities and competitions aligned with the philosophy, vision, mission, and objectives of Maejo University and the Faculty of Science.
- Covering the Faculty of Science's strategic goals:
 - Strategy 1: Producing graduates with expertise in science and up-to-date technology.
 - Strategy 2: Developing graduates as leaders with English proficiency to drive towards internationalization ([Reference 6.4-1](#)).

Details of Co-Curricular Activities and Competitions

Co-curricular activities cover academic, life skills development, leadership, volunteerism, and ethics.

- Students are required to participate in no fewer than 16 activities and 80 hours according to university criteria to develop well-rounded skills and desirable characteristics.
- Competitions promote knowledge, skills, and networking, such as academic skill contests, speech competitions, startup competitions, and hackathons.
- Other Support Services to Enhance Capabilities and Enrich Experience
- Career guidance and preparation for the workforce.
- Additional language and technology skills services to enhance work capabilities.
- Counseling services for mental health, learning, and personal development through faculty and university support units.
- Participation in Open House, Career Day, and other capacity-building programs.

Self-assessment	1	2	3	4	5	6	7
Req.-6.4: Co-curricular activities, student competition, and other student support services are shown to be available to improve learning experience and employability.				✓			

Req.-6.5: The competences of the support staff rendering student services are shown to be identified for recruitment and deployment. These competences are shown to be evaluated to ensure their continued relevance to stakeholders needs. Roles and relationships are shown to be well-defined to ensure smooth delivery of the services.

Process for Defining Competencies and Position Standards

The program relies on Maejo University's systems and mechanisms to define competencies and position standards for support staff as follows:

- Based on the Maejo University Competency Manual (Revised Edition, June 2011) ([Reference 6.5-1](#)).
- Referencing the Maejo University Personnel Administration Committee announcements and the Maejo University Regulations on Personnel Management B.E. 2561 (2018) for recruitment, appointment, and designation of personnel according to position frameworks.
- Defining qualifications and competencies in accordance with job position standards to ensure suitability for required support functions, such as Academic Officers, Scientists, Career Counselors, Computer Officers, etc.

Recruitment, Evaluation, and Development Process for Support Staff

Recruitment and Appointment: Conducted in accordance with Maejo University announcements and regulations specifying position standards and competencies.

Performance Evaluation:

- Utilizing criteria from the Competency Manual and the Performance Evaluation Criteria Announcement B.E. 2562 (2019) and the latest 2024 updates.
- Conducted by the Faculty of Science's Screening and Evaluation Committee, which includes representatives from all programs ([Reference 5.5-2](#)).

Support Staff Development:

- Preparing an Individual Development Plan (IDP) for personal development.
- Supporting training, seminars, study visits both inside and outside the university.
- Promoting the creation of operation manuals, job analysis, and improvements to work systems.
- Disseminating development results as online articles on the faculty's website.

Defining Roles, Duties, and Relationships:

- Clearly defining roles and responsibilities according to position frameworks and the Competency Manual to ensure smooth service provision to students and stakeholders.
- Each support staff position has a clear scope of work, roles, and responsibilities.
- Collaboration across units at the program, faculty, and university levels.

Performance Results:

- Support staff performance is evaluated according to standard criteria, and continuous development opportunities are provided.
- The service system operates smoothly and is well-received by service users.
- Articles and reports showcasing development efforts demonstrate a commitment to enhancing service quality.

Self-assessment	1	2	3	4	5	6	7
Req.-6.5: The competences of the support staff rendering student services are shown to be identified for recruitment and deployment. These competences are shown to be evaluated to ensure their continued relevance to stakeholders needs. Roles and relationships are shown to be well-defined to ensure smooth delivery of the services.				✓			

Req.-6.6: Student support services are shown to be subjected to evaluation, benchmarking, and enhancement.

The program has a systematic and comprehensive evaluation system through student satisfaction surveys on support for teaching and learning for Academic Year 2024 ([Reference 6.6-1](#)) and the evaluation system for support for teaching and learning in each course ([Reference 5.4-2](#)).

Performance Results

In Academic Year 2024, data was collected on student satisfaction that reflects the quality of support services, serving as a guideline for supporting teaching and learning in the following academic year.

Self-assessment	1	2	3	4	5	6	7
Req.-6.6: Student support services are shown to be subjected to evaluation, benchmarking, and enhancement.				✓			

Criterion 7: Facilities and Infrastructure

Req.-7.1: The physical resources to deliver the curriculum, including equipment, material, and information technology, are shown to be sufficient.

The program conducts shared classrooms in the Maejo 60th Anniversary Building, Maejo 70th Anniversary Building, and Maejo 80th Anniversary Building for teaching and learning activities. These buildings are equipped with the necessary teaching and learning facilities. The program receives support from the Office of Academic Administration and Development in collaboration with the Digital Technology Division to facilitate online teaching through Microsoft Teams for all courses offered in the academic year 2024.

Additionally, [licensed software services](#) are provided for students, instructors, and staff of Maejo University. Licensed software can be downloaded via the Network System and Internet Services Office, as listed in the official software documentation of Maejo University.

The Digital Technology Division also surveys the software needs of students and staff through questionnaires and consultation with the Committee for Screening Educational and Research Software. This committee considers the software required for teaching and research purposes and allocates a budget for the procurement accordingly. In the academic year 2024, software usage was analyzed and evaluated based on download statistics records ([Reference 7.1-1](#)).

The program, in collaboration with the Faculty of Science, conducts student satisfaction surveys regarding the support provided for teaching and learning, the readiness of classrooms and laboratories, and the learning environment within the faculty buildings.

In Academic Year 2024, student satisfaction in both semesters scored a perfect 5.0, reflecting the highest level of satisfaction. ([Reference 7.1-2](#)).

Self-assessment	1	2	3	4	5	6	7
Req.-7.1: The physical resources to deliver the curriculum, including equipment, material, and information technology, are shown to be sufficient.				✓			

Req.-7.2: The laboratories and equipment are shown to be up-to-date, readily available, and effectively deployed.

The program is supported by adequate, modern, and comprehensive learning resources and facilities to support teaching and student learning, as follows: ([Reference 7.2-1](#))

- Computer Laboratories: Maejo University provides computer laboratories, such as those located in the Maejo 80th Anniversary and 70th Anniversary Buildings. These laboratories are equipped with sufficient, up-to-date materials and equipment that are ready for use in the program's teaching and learning activities.

- University Library: The library offers group and individual study rooms equipped with convenient and safe facilities, including 40 computers, access to electronic books through the Srangsook application, wireless internet, air conditioning, and reading areas free of charge.
- Language Center: This center serves as a hub for providing and organizing foreign language training courses, such as English for communication and introductory Chinese. It also offers language proficiency tests, online lessons, and electronic language learning materials to enhance the language skills of students and staff.

The program, in collaboration with the Faculty of Science, conducted student satisfaction surveys regarding supporting resources, laboratories, and the availability and modernity of tools and equipment. In Academic Year 2024, students evaluated their satisfaction at 4.5 in the first semester and 5.0 in the second, reflecting a high to highest level of satisfaction. ([Reference 7.1-2](#))

Self-assessment	1	2	3	4	5	6	7
Req.-7.2: The laboratories and equipment are shown to be up-to-date, readily available, and effectively deployed.				✓			

Req.-7.3: A digital library is shown to be set-up, in keeping with progress in information and communication technology.

The program utilizes [the Maejo University Library](#) as a key learning resource for both students and faculty members. The library provides convenient, fast, and diverse access to academic resources.

The library serves as an academic service center, offering a wide range of materials such as books, journals, printed media, and online databases including Science Direct, CAB eBooks, Springer Link, E-Journal, as well as software tools such as EndNote, Turnitin, SPSS, and Open Athens to support learning, research, and quality of life. Additional services provided by the library include:

- Group and individual study rooms
- 40 computer workstations
- Electronic books accessible via the Srangsook application
- Wireless internet access
- A learning-conducive library environment

The library's vision is: "To be a Smart Library that supports teaching, research, and lifelong learning," aiming to transform the library into a digital library in line with advances in information and communication technology.

Library service hours are as follows:

1. During the academic semester:
 - Monday to Friday: 8:30 AM – 7:00 PM
 - Saturday to Sunday: 10:00 AM – 6:00 PM

2. During the summer semester:

- Monday to Friday: 8:30 AM – 4:30 PM

The library is designed with designated spaces to create a supportive learning atmosphere. ([Reference 7.3-1](#))

In collaboration with the Faculty of Science, the program surveyed student satisfaction regarding the availability and readiness of books, journals, media, and other resources provided by the university library. Students gave perfect scores of 5.0 in both semesters of Academic Year 2024, reflecting the highest level of satisfaction. ([Reference 7.1-2](#))

Self-assessment	1	2	3	4	5	6	7
Req.-7.3: A digital library is shown to be set-up, in keeping with progress in information and communication technology.				✓			

Req.-7.4: The information technology systems are shown to be set up to meet the needs of staff and students.

Maejo University has set a strategic vision to become a Digital University by integrating digital technologies to reshape learning beyond traditional classrooms. To support this transformation, the university has developed an IT system that serve academic staff, academic support staff, and students. A centralized University Data Center enables access to shared resources and facilitates data-driven planning across all sectors.

These systems enhance teaching and learning with a strong emphasis on staff and student support. The university promotes the use of licensed software including Windows and Microsoft Office offered free of charge to students and staff. Additionally, various information systems have been implemented to support staff operations, with all data managed centrally to ensure efficiency and integration.

Furthermore, in collaboration with Krung Thai Bank, Maejo University has developed the MJU Mobile App to integrate university activities and digital transactions in support of its Smart University policy. Key features of the app include: ([Reference 7.4-1](#))

- Virtual ID as a substitute for student ID cards
- Activity calendar notifications
- Room reservations
- Grade checking
- Cashless payment system
- Points accumulation system
- Book borrowing and returning
- Digital door access for classrooms and dormitories

Self-assessment	1	2	3	4	5	6	7
Req.-7.4: The information technology systems are shown to be set up to meet the needs of staff and students.				✓			

Req.-7.5: The university is shown to provide a highly accessible computer and network infrastructure that enables the campus community to fully exploit information technology for teaching, research, service, and administration.

The program employs information and communication systems provided by the Digital Technology Division of Maejo University to support teaching, learning, research, and academic services. These systems are supported by a reliable and accessible IT infrastructure, facilitating comprehensive information management across academic, administrative, and research functions, including:

- Learning management systems for students and staff to support teaching and learning
- Academic records and registration information systems
- Financial, human resources, and electronic document systems (ERP)
- Modern hardware and software to support education and research

These information technology supports enable the program to conduct teaching and learning efficiently, enhance access to data and knowledge, and promote skill development among students and staff at all levels. ([Reference 7.5-1](#))

In collaboration with the Faculty of Science, the program surveyed student satisfaction with IT facilities and digital learning infrastructure for teaching and research. Students gave full scores of 5 out of 5 in both semesters of the 2024 academic year, indicating the highest level of satisfaction. ([Reference 7.1-2](#))

Self-assessment	1	2	3	4	5	6	7
Req.-7.5: The university is shown to provide a highly accessible computer and network infrastructure that enables the campus community to fully exploit information technology for teaching, research, service, and administration.				✓			

Req.-7.6: The environmental, health, and safety standards and access for people with special needs are shown to be defined and implemented.

The program ensures effective management of utilities and safety systems in collaboration with Maejo University and the Faculty of Science. Security personnel are stationed to safeguard the premises around the clock, while custodial staff maintain daily cleanliness to ensure a safe and conducive learning environment.

To further strengthen campus safety and efficiency, the Faculty of Science works with relevant units to implement 5S activities (Sort, Set in Order, Shine, Standardize, Sustain) and conduct regular emergency drills in coordination with the university, ensuring systematic preparedness.

Additionally, Maejo University provides annual accident insurance coverage for all students and staff, reinforcing its commitment to campus safety and the well-being of its community.

The program has consistently maintained effective safety measures, with no reports of serious incidents or adverse impacts on stakeholder well-being to date. At present, there

are no students enrolled in the program who require special needs support. ([Reference 7.6-1\)](#))

Self-assessment	1	2	3	4	5	6	7
Req.-7.6: The environmental, health, and safety standards and access for people with special needs are shown to be defined and implemented.				✓			

Req.-7.7: The university is shown to provide a physical, social, and psychological environment that is conducive for education, research, and personal wellbeing.

Maejo University provides a supportive learning environment that promotes student well-being, quality of life, health, and safety, covering physical, social, and psychological aspects.

In collaboration with the program, the Faculty of Science conducts an orientation for new students to introduce university systems, rules, and campus life. The session also covers curriculum overview and provides academic and personal guidance to support student adjustment, engagement, and long-term academic success. ([Reference 7.7-1\)](#))

Under the Faculty of Science, the program assigns qualified academic support staff to assist in developing student skills aligned with program objectives. These staff also support teaching, research, and academic services.

In the academic year 2024, the program established a student lounge equipped with facilities that support relaxation, study, mental, physical, and social.

The program, in collaboration with the Faculty of Science, surveyed student satisfaction with spaces supporting interaction and collaborative learning. Scores improved from 3.5 (moderate satisfaction) in the first semester to 5.0 (highest satisfaction) in the second semester of the 2024 academic year. ([Reference 7.1-2\)](#))

Self-assessment	1	2	3	4	5	6	7
Req.-7.7: The university is shown to provide a physical, social, and psychological environment that is conducive for education, research, and personal wellbeing.				✓			

Req.-7.8: The competences of the support staff rendering services related to facilities are shown to be identified and evaluated to ensure that the skills remain relevant to stakeholders needs.

Maejo University has announced updated position standards for academic support personnel, available on the university website [Position Standards for Personnel \(as of February 23, 2024\)](#). The announcement outlines general job descriptions, core responsibilities, including operations, planning, coordination, and service, and required

competencies for each role. These standards provide a structured framework for the recruitment, evaluation, and development of personnel in academic support functions.

The university has established a competency-based position standard manual outlining job qualifications and requirements. Committees such as the Competency Standards Committee and the Knowledge Management Committee are formally appointed to define university-wide competencies aligned with the university's vision. Competencies are defined as the knowledge, skills, and behaviors served as the foundation for successful job performance and ongoing development. Knowledge management is used to guide this framework, with competency development seen as essential to both individual growth and organizational advancement. Relevant documents are available on the Human Resource Management Division website [Maejo University Personnel Competency Manual](#).

In the academic year 2024 (fiscal year 2025), Maejo University implemented revised competency definitions and new levels of expectations for both executives and staff. This was announced by the Maejo University Personnel Administration Committee under the title: [“Specification of Competencies and Expected Levels of Competency for Executives and Staff at Maejo University.”](#) which came into effect on October 1, 2024. All staff must demonstrate competencies according to the new framework, as follows:

- **Core Competency** refers to behavioral characteristics expected of all personnel. These are designed to cultivate shared values and desired behaviors that align with the university's philosophy, vision, and mission.
- **Functional Competency** refers to behavioral characteristics defined specifically for different roles or positions. These aim to support appropriate behavior for each job function and improve the effectiveness of role performance.
- **Managerial Competency** refers to behavioral characteristics defined specifically for managerial positions, with the purpose of enhancing leadership potential and ensuring effective and efficient task performance.

Table 7.8.1 Comparison of Change in the Competency Framework between Fiscal years 2024 and 2025

Previous Competency Framework (Fiscal Year 2024)	Previous Competency Framework (Fiscal Year 2025)
Core Competencies: 1. Desire for Learning 2. Teamwork and Networking 3. Creativity and Innovation 4. Foreign Language Proficiency 5. Information Technology Skills	Core Competencies: 1. Achievement Orientation 2. Service Excellence 3. Professional Expertise Development 4. Integrity and Ethics 5. Teamwork
Functional competencies are categorized based on the job function and position of the personnel.	Functional Competency For academic support staff (all positions), excluding administrative positions, as follows: 1. Analytical Thinking 2. Proactive Execution 3. Process Accuracy Verification 4. Persuasive Communication Skills

Previous Competency Framework (Fiscal Year 2024)	Previous Competency Framework (Fiscal Year 2025)
Managerial Competency refers to the characteristics or capabilities of executives.	Managerial Competency includes: 1. Leadership and the ability to drive change 2. Vision and strategic planning 3. Coaching and delegation

The Faculty of Science issued [an announcement outlining the criteria and methods for performance evaluation of its personnel for the fiscal year 2025 \(additional criteria\)](#), specifically regarding the competencies required for staff within the Faculty of Science at Maejo University. A meeting was organized under the project titled [“Creating Understanding on Competency Level Measurement and Competency Evaluation Criteria for Personnel of the Faculty of Science, Maejo University – Session 1.”](#) This session included presentations on measuring competency levels and evaluation criteria for staff performance, as well as a lecture on "Techniques for Creating Links to Enhance Accessibility and Data Connectivity" held on January 29, 2025. The aim was to improve understanding of the new competency input format and competency levels for the performance evaluation of faculty staff.

The program utilizes systems and mechanisms provided by the Faculty of Science and Maejo University for information technology (IT) and audiovisual (AV) services. The program receives support from academic support personnel responsible for central IT and AV services within the faculty, such as requesting services for installing computer operating systems and software and requesting maintenance or repair of audiovisual equipment in program classrooms. [\(Reference 7.8-1\)](#)

The program, in collaboration with the Faculty of Science, conducted student satisfaction surveys on student services. Results showed high satisfaction, with average scores of 4.8 and 5.0 out of 5 in the first and second semesters of academic year 2024, respectively. [\(Reference 7.1-2\)](#)

Self-assessment	1	2	3	4	5	6	7
Req.-7.8: The competences of the support staff rendering services related to facilities are shown to be identified and evaluated to ensure that their skills remain relevant to stakeholder needs.				✓			

Req.-7.9: The quality of the facilities (library, laboratory, IT, and student services) are shown to be subjected to evaluation and enhancement.

In the academic year 2024, the program evaluated learning support quality through a student survey [\(Reference 7.1-2\)](#). Based on the results, improvements were made to better meet student needs, including:

- Establishing a student lounge for relaxation and study [\(Reference 7.9-1\)](#)
- Adding more learning materials and books to the university library
- Planning the procurement of new computers [\(Reference 7.9-2 /Reference 7.9-3\)](#)

The program conducts annual evaluations to ensure ongoing improvement.

Self-assessment	1	2	3	4	5	6	7
Req.-7.9: The quality of the facilities (library, laboratory, IT, and student services) are shown to be subjected to evaluation and enhancement.				✓			

Criterion 8: Output and Outcomes

Req.-8.1: The pass rate, dropout rate, and average time to graduate are shown to be established, monitored, and benchmarked for improvement.

The program monitors and compiles data on graduation rates, dropout rates, and the average time to graduation through the following sources:

- [Maejo University's Educational Quality Assurance](#)
- [Maejo University's Management Information System](#)

As the program admitted its first students in the academic year 2024, available data currently include only the number of students categorized by reasons for withdrawal and the program's dropout rate, as presented in Table 8.1.1.

Table 8.1.1 Number of Students by Reasons for Withdrawal and Dropout Rate

Academic Year of Admission	Number of Students Admitted	Student Withdrawal Breakdown and Dropout Rate (%)							
		Resigned	GPA < 1.5	GPA < 1.75	Voluntary Withdrawal	Dismissed	Did Not Report	Unpaid Fees	Total (Persons, %)
2567	5	1 (20)	-	-	-	-	-	1 (20)	2 (40)

Student Dropout Rate

Table 8.1.1 presents the breakdown of student dropout cases and reasons for withdrawal in the academic year 2024. Among the five students admitted, one student voluntarily resigned, and another failed to pay the required tuition fees on time, resulting in a **dropout rate of 40%**. Follow-up by the program revealed that both students intended to transfer to other programs or faculties. The program analyzed these cases and reported the findings in the curriculum committee meeting ([Reference 8.1-1](#), [Agenda 3.1](#)).

To prevent potential dropout rates, the program revised its admission policy by requiring a minimum Mathematics GPA requirement of **2.5**, aiming to ensure that incoming students have sufficient mathematical aptitude ([Reference 8.1-2](#)).

Graduation rate

N/A

Average Time to Graduation

N/A

Self-assessment	1	2	3	4	5	6	7
Req.-8.1: The pass rate, dropout rate, and average time to graduate are shown to be established, monitored, and benchmarked for improvement.							

Req.-8.2: Employability as well as self-employment, entrepreneurship, and advancement to further studies, are shown to be established, monitored, and benchmarked for improvement.

N/A

Self-assessment	1	2	3	4	5	6	7
Req.-8.2: Employability as well as self-employment, entrepreneurship, and advancement to further studies, are shown to be established, monitored, and benchmarked for improvement.							

Req.-8.3: Research and creative work output and activities carried out by the academic staff and students, are shown to be established, monitored, and benchmarked for improvement.

The program has established a monitoring system to track research outputs of academic staff ([Reference 8.3.1](#)). Based on the Summary of Research Publications in 2024, the program is able to report the proportion of research publications produced by academic staff during the 2024 academic year (counted by the number of publications in the calendar year 2024) as follows:

Academic year	The proportion of research publications
2024	4.6

Currently, there are no student research publications, as the program is in its initial stage, having admitted its first students in 2024.

Self-assessment	1	2	3	4	5	6	7
Req.-8.3: Research and creative work output and activities carried out by the academic staff and students, are shown to be established, monitored, and benchmarked for improvement.			✓				

Req.-8.4 : Data are provided to show directly the achievement of the programme outcomes, which are established and monitored.

The program monitors the achievement of CLOs and PLOs using OBE-2 (Version 1), supported by clearly defined assessment criteria to ensure alignment with the intended learning outcomes ([Reference 8.4-1/ Reference 8.4-2](#)).

In the academic year 2024, the achievement of Course Learning Outcomes (CLOs) for first-year students was evaluated for each course, as presented in Table 8.4.1.

Table 8.4.1: CLO Achievement Results of First-Year Students by Course

Course	Number of Students	Number of Students Achieving CLOs	Number of Students Not Achieving CLOs
10315111 Calculus for Industry I	3	3	0
10315112 Calculus for Industry II	3	2	1
10315113 Introduction to Linear Algebra	3	2	1
10315114 Introduction to Scientific Computing	3	3	0
10315115 Probability and Data Analysis	3	3	0
10315131 Differential Equation and Industrial Applications	3	3	0
10315132 Combinatorics and its Applications	3	3	0

Based on Table 8.4.1, one student did not achieve CLOs in two courses:

- 10315112 Calculus for Industry 2
- 10315113 Introduction to Linear Algebra

Follow-up by the program's academic staff revealed that both CLO failures were by the same student.

In the academic year 2024, the program also evaluated PLOs achievement of first-year students across all courses. The results are shown in Table 8.4.2 as follows.

Table 8.4.2 PLO Achievement Results by Course for First-Year Students (based on 3 students)

Course	The number of students who achieved PLOs							
	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8
10315111 Calculus for Industry I		3	3					
10315112 Calculus for Industry II		2	2					
10315113 Introduction to Linear Algebra		2	2					
10315114 Introduction to Scientific Computing		3	3					
10315115 Probability and Data Analysis		3	3					
10315131 Differential Equation and Industrial Applications		3	3					
10315132 Combinatorics and its Applications		3	3					

As shown in Table 8.4.2, all three first-year students successfully met the expected outcomes for PLO2 and PLO3.

The program revised OBE-2 document in accordance with recommendations from OPS MHESI to improve clarity and completeness ([Reference 8.4-3](#)). The revisions include improved descriptions of PLOs, elective structure, and clearer assessment methods for YLOs. The YLOs in OBE-2 Version 1 and Version 2 remain consistent.

Additionally, PLO2 and PLO3 in Version 1 correspond to PLO9 and PLO2 in Version 2, respectively ([Reference 8.4-4](#)). Therefore, the program adopts OBE-2 Version 2 for YLO assessment of first-year students in the 2024 academic year ([Reference 8.4-5](#)). The assessment results based on self-evaluations and standardized YLO tests are presented in Table 8.4.3.

Table 8.4.3 Number of Students Achieving Program YLOs in Academic Year 2024

YLOs	Students Achieving Corresponding PLOs	Students Achieving YLOs (Self-Assessment)	Students Achieving YLOs (Year-Level Knowledge Test)
YLO1	3	3	1

Based on Table 8.4.3, all three students achieved YLO1 of the program. To ensure students meet the expected CLOs and PLOs, the program has instructed academic advisors to provide close guidance and continuous monitoring.

Self-assessment	1	2	3	4	5	6	7
Req.-8.4: Data are provided to show directly the achievement of the programme outcomes, which are established and monitored.				✓			

Req.-8.5: Satisfaction level of the various stakeholders are shown to be established, monitored, and benchmarked for improvement.

The program has established a monitoring and feedback system to gather input from key stakeholders for continuous assessment and quality improvement, utilizing [the university's central database](#). This system enables performance evaluation and informs program enhancements. Feedback is collected from the following sources:

- Employers**
N/A – As the program is newly established.
- Alumni**
N/A – As the program is newly established.
- Students**
Feedback is obtained through student satisfaction surveys conducted by Faculty of Science. In the academic year 2024, the average student satisfaction score regarding the program's operations was 4.76 out of 5, indicating a very high level of satisfaction.
([Reference 8.5-1](#))

4. Faculty Members

Feedback from teaching staff is also collected through satisfaction surveys conducted by Faculty of Science. In the academic year 2024, the average satisfaction score from faculty members responsible for the program was 4.63 out of 5, reflecting a very high level of satisfaction. ([Reference 8.5-2](#))

Self-assessment	1	2	3	4	5	6	7
Req.-8.5: Satisfaction level of the various stakeholders are shown to be established, monitored, and benchmarked for improvement.							

Section 4

Appendix

**Summary of the Self-Assessment Results of the Bachelor of Science Program in
Industrial Optimization and Application (International Program),
Faculty of Science, Academic Year 2024**

	Criteria	AUN-QA Rating Score						
		1	2	3	4	5	6	7
1	Expected Learning Outcomes							
1.1	The programme to show that the expected learning outcomes are appropriately formulated in accordance with an established learning taxonomy, are aligned to the vision and mission of the university, and are known to all stakeholders				✓			
1.2	The programme to show that the expected learning outcomes for all courses are appropriately formulated and are aligned to the expected learning outcomes of the programme				✓			
1.3	The programme to show that the expected learning outcomes consist of both generic outcomes (related to written and oral communication, problemsolving, information technology, teambuilding skills, etc) and subject specific outcomes (related to knowledge and skills of the study discipline)				✓			
1.4	The programme to show that the requirements of the stakeholders, especially the external stakeholders, are gathered, and that these are reflected in the expected learning outcomes				✓			
1.5	The programme to show that the expected learning outcomes are achieved by the students by the time they graduate				✓			
2	Programme Structure and Content							
2.1	The specifications of the programme and all its courses are shown to be comprehensive, up-to-date, and made available and communicated to all stakeholders				✓			
2.2	The design of the curriculum is shown to be constructively aligned with achieving the expected learning outcomes				✓			
2.3	The design of the curriculum is shown to include feedback from stakeholders, especially external stakeholders			✓				
2.4	The contribution made by each course in achieving the expected learning outcomes is shown to be clear				✓			
2.5	The curriculum to show that all its courses are logically structured, properly sequenced (progression from basic to intermediate to specialised courses), and are integrated				✓			
2.6	The curriculum to have option(s) for students to pursue major and/or minor specialisations				✓			
2.7	The programme to show that its curriculum is reviewed periodically following an established procedure and that it remains up-to-date and relevant to industry			✓				
3	Teaching and Learning Approach							
3.1	The educational philosophy is shown to be articulated and communicated to all stakeholders. It is also shown to be reflected in the teaching and learning activities				✓			
3.2	The teaching and learning activities are shown to allow students to participate responsibly in the learning process				✓			

	Criteria	AUN-QA Rating Score						
		1	2	3	4	5	6	7
3.3	The teaching and learning activities are shown to involve active learning by the students				✓			
3.4	The teaching and learning activities are shown to promote learning, learning how to learn, and instilling in students a commitment for life-long learning (e.g., commitment to critical inquiry, information-processing skills, and a willingness to experiment with new ideas and practices)				✓			
3.5	The teaching and learning activities are shown to inculcate in students, new ideas, creative thought, innovation, and an entrepreneurial mindset				✓			
3.6	The teaching and learning processes are shown to be continuously improved to ensure their relevance to the needs of industry and are aligned to the expected learning outcomes				✓			
4	Student Assessment							
4.1	A variety of assessment methods are shown to be used and are shown to be constructively aligned to achieving the expected learning outcomes and the teaching and learning objectives				✓			
4.2	The assessment and assessment-appeal policies are shown to be explicit, communicated to students, and applied consistently				✓			
4.3	The assessment standards and procedures for student progression and degree completion, are shown to be explicit, communicated to students, and applied consistently				✓			
4.4	The assessments methods are shown to include rubrics, marking schemes, timelines, and regulations, and these are shown to ensure validity, reliability, and fairness in assessment				✓			
4.5	The assessment methods are shown to measure the achievement of the expected learning outcomes of the programme and its courses				✓			
4.6	Feedback of student assessment is shown to be provided in a timely manner				✓			
4.7	The student assessment and its processes are shown to be continuously reviewed and improved to ensure their relevance to the needs of industry and alignment to the expected learning outcomes				✓			
5	Academic Staff							
5.1	The programme to show that academic staff planning (including succession, promotion, re-deployment, termination, and retirement plans) is carried out to ensure that the quality and quantity of the academic staff fulfil the needs for education, research, and service				✓			
5.2	The programme to show that staff workload is measured and monitored to improve the quality of education, research, and service				✓			
5.3	The programme to show that the competences of the academic staff are determined, evaluated, and communicated				✓			

	Criteria	AUN-QA Rating Score						
		1	2	3	4	5	6	7
5.4	The programme to show that the duties allocated to the academic staff are appropriate to qualifications, experience, and aptitude				✓			
5.5	The programme to show that promotion of the academic staff is based on a merit system which accounts for teaching, research, and service				✓			
5.6	The programme to show that the rights and privileges, benefits, roles and relationships, and accountability of the academic staff, taking into account professional ethics and their academic freedom, are well defined and understood				✓			
5.7	The programme to show that the training and developmental needs of the academic staff are systematically identified, and that appropriate training and development activities are implemented to fulfil the identified needs				✓			
5.8	The programme to show that performance management including reward and recognition is implemented to assess academic staff teaching and research quality				✓			
6	Student Support Services							
6.1	The student intake policy, admission criteria, and admission procedures to the programme are shown to be clearly defined, communicated, published, and up-to-date				✓			
6.2	Both short-term and long-term planning of academic and non-academic support services are shown to be carried out to ensure sufficiency and quality of support services for teaching, research, and community service				✓			
6.3	An adequate system is shown to exist for student progress, academic performance, and workload monitoring. Student progress, academic performance, and workload are shown to be systematically recorded and monitored. Feedback to students and corrective actions are made where necessary				✓			
6.4	Co-curricular activities, student competition, and other student support services are shown to be available to improve learning experience and employability				✓			
6.5	The competences of the support staff rendering student services are shown to be identified for recruitment and deployment. These competences are shown to be evaluated to ensure their continued relevance to stakeholders needs. Roles and relationships are shown to be well-defined to ensure smooth delivery of the services				✓			
6.6	Student support services are shown to be subjected to evaluation, benchmarking, and enhancement				✓			
7	Facilities and Infrastructure							
7.1	The physical resources to deliver the curriculum, including equipment, material, and information technology, are shown to be sufficient				✓			
7.2	The laboratories and equipment are shown to be up-to-date, readily available, and effectively deployed				✓			

	Criteria	AUN-QA Rating Score						
		1	2	3	4	5	6	7
7.3	A digital library is shown to be set-up, in keeping with progress in information and communication technology				✓			
7.4	The information technology systems are shown to be set up to meet the needs of staff and students				✓			
7.5	The university is shown to provide a highly accessible computer and network infrastructure that enables the campus community to fully exploit information technology for teaching, research, service, and administration				✓			
7.6	The environmental, health, and safety standards and access for people with special needs are shown to be defined and implemented				✓			
7.7	The university is shown to provide a physical, social, and psychological environment that is conducive for education, research, and personal wellbeing				✓			
7.8	The competences of the support staff rendering services related to facilities are shown to be identified and evaluated to ensure that their skills remain relevant to stakeholder needs				✓			
7.9	The quality of the facilities (library, laboratory, IT, and student services) are shown to be subjected to evaluation and enhancement				✓			
8	Output and Outcomes							
8.1	The pass rate, dropout rate, and average time to graduate are shown to be established, monitored, and benchmarked for improvement							
8.2	Employability as well as self-employment, entrepreneurship, and advancement to further studies, are shown to be established, monitored, and benchmarked for improvement							
8.3	Research and creative work output and activities carried out by the academic staff and students, are shown to be established, monitored, and benchmarked for improvement			✓				
8.4	Data are provided to show directly the achievement of the programme outcomes, which are established and monitored				✓			
8.5	Satisfaction level of the various stakeholders are shown to be established, monitored, and benchmarked for improvement							
Over all								

**Common Data Set of the Bachelor of Science Program in
Industrial Optimization and Application (International Program),
Faculty of Science, Academic Year 2024**

CdsID	CdsName	CdsValues
1.	จำนวนหลักสูตร	
	- ---ระดับปริญญาตรี	1
	- ---ระดับ ป.บัณฑิต	-
	- ---ระดับปริญญาโท	-
	- ---ระดับ ป.บัณฑิตชั้นสูง	-
	- ---ระดับปริญญาเอก	-
2.	จำนวนหลักสูตรนอกที่ตั้ง (จำนวนหลักสูตรที่จัดการเรียนการสอนนอกสถานที่ตั้ง)	
	- ---ระดับปริญญาตรี	-
	- ---ระดับ ป.บัณฑิต	-
	- ---ระดับปริญญาโท	-
	- ---ระดับ ป.บัณฑิตชั้นสูง	-
	- ---ระดับปริญญาเอก	-
3.	จำนวนนักศึกษา (จำนวนนักศึกษาปัจจุบันทั้งหมดทุกระดับการศึกษา)	
	- ---จำนวนนักศึกษาปัจจุบันทั้งหมด - ระดับปริญญาตรี	3
	- ---จำนวนนักศึกษาปัจจุบันทั้งหมด - ระดับ ป.บัณฑิต	-
	- ---จำนวนนักศึกษาปัจจุบันทั้งหมด - ระดับปริญญาโท	-
	- ---จำนวนนักศึกษาปัจจุบันทั้งหมด - ระดับ ป.บัณฑิตชั้นสูง	-
	- ---จำนวนนักศึกษาปัจจุบันทั้งหมด - ระดับปริญญาเอก	-
4.	จำนวนอาจารย์ประจำตามตำแหน่งทางวิชาการและคุณวุฒิการศึกษา	
4.1	จำนวนอาจารย์ประจำทั้งหมด รวมทั้งที่ปฏิบัติงานจริงและลาศึกษาต่อ	7
	- ---จำนวนอาจารย์ประจำทั้งหมดที่ปฏิบัติงานจริงและลาศึกษาต่อ วุฒิปริญญาตรีหรือเทียบเท่า	-
	- ---จำนวนอาจารย์ประจำทั้งหมดที่ปฏิบัติงานจริงและลาศึกษาต่อ วุฒิปริญญาโทหรือเทียบเท่า	1
	- ---จำนวนอาจารย์ประจำทั้งหมดที่ปฏิบัติงานจริงและลาศึกษาต่อ วุฒิปริญญาเอกหรือเทียบเท่า	6
4.2	จำนวนอาจารย์ประจำทั้งหมดที่ดำรงตำแหน่งอาจารย์	
	- ---จำนวนอาจารย์ประจำ (ที่ไม่มีตำแหน่งทางวิชาการ) ที่มีวุฒิปริญญาตรี หรือเทียบเท่า	-

CdsID	CdsName	CdsValues
4.3	- ---จำนวนอาจารย์ประจำ (ที่ไม่มีตำแหน่งทางวิชาการ) ที่มีวุฒิปริญญาโท หรือเทียบเท่า	-
	- ---จำนวนอาจารย์ประจำ (ที่ไม่มีตำแหน่งทางวิชาการ) ที่มีวุฒิปริญญาเอก หรือเทียบเท่า	1
	จำนวนอาจารย์ประจำทั้งหมดที่ดำรงตำแหน่งผู้ช่วยศาสตราจารย์	
	- ---จำนวนอาจารย์ประจำตำแหน่งผู้ช่วยศาสตราจารย์ ที่มีวุฒิปริญญาตรี หรือเทียบเท่า	-
	- ---จำนวนอาจารย์ประจำตำแหน่งผู้ช่วยศาสตราจารย์ ที่มีวุฒิปริญญาโท หรือเทียบเท่า	-
	- ---จำนวนอาจารย์ประจำตำแหน่งผู้ช่วยศาสตราจารย์ ที่มีวุฒิปริญญาเอก หรือเทียบเท่า	5
4.4	จำนวนอาจารย์ประจำทั้งหมดที่ดำรงตำแหน่งรองศาสตราจารย์	
	- ---จำนวนอาจารย์ประจำตำแหน่งรองศาสตราจารย์ ที่มีวุฒิปริญญาตรี หรือเทียบเท่า	-
	- ---จำนวนอาจารย์ประจำตำแหน่งรองศาสตราจารย์ ที่มีวุฒิปริญญาโท หรือเทียบเท่า	-
	- ---จำนวนอาจารย์ประจำตำแหน่งรองศาสตราจารย์ ที่มีวุฒิปริญญาเอก หรือเทียบเท่า	1
4.5	จำนวนอาจารย์ประจำทั้งหมดที่ดำรงตำแหน่งศาสตราจารย์	
	- ---จำนวนอาจารย์ประจำตำแหน่งศาสตราจารย์ ที่มีวุฒิปริญญาตรี หรือเทียบเท่า	-
	- ---จำนวนอาจารย์ประจำตำแหน่งศาสตราจารย์ ที่มีวุฒิปริญญาโท หรือเทียบเท่า	-
	- ---จำนวนอาจารย์ประจำตำแหน่งศาสตราจารย์ ที่มีวุฒิปริญญาเอก หรือเทียบเท่า	-
5.	คุณวุฒิอาจารย์ประจำหลักสูตร	
5.1	จำนวนอาจารย์ประจำหลักสูตรแยกตามวุฒิการศึกษา	
	- - ---ระดับปริญญาตรี	-
	- - ---ระดับ ป.บัณฑิต	-
	- - ---ระดับปริญญาโท	1
	- - ---ระดับ ป.บัณฑิตชั้นสูง	-
	- - ---ระดับปริญญาเอก	6
5.2	จำนวนอาจารย์ประจำหลักสูตรที่มีตำแหน่งทางวิชาการ	
	- - ---จำนวนอาจารย์ประจำหลักสูตรที่ไม่มีตำแหน่งทางวิชาการ	1
	- - ---จำนวนอาจารย์ประจำหลักสูตรที่มีตำแหน่งผู้ช่วยศาสตราจารย์	5
	- - ---จำนวนอาจารย์ประจำหลักสูตรที่มีตำแหน่งรองศาสตราจารย์	1
	- - ---จำนวนอาจารย์ประจำหลักสูตรที่มีตำแหน่งศาสตราจารย์	-
6.	ผลงานทางวิชาการของอาจารย์ประจำหลักสูตร	
6.1	จำนวนรวมของผลงานทางวิชาการของอาจารย์ประจำหลักสูตร	23
	- - ---บทความวิจัยหรือบทความวิชาการฉบับสมบูรณ์ที่ตีพิมพ์ในรายงานสืบเนื่องจากการประชุมวิชาการระดับชาติ	

CdsID	CdsName	CdsValues
	---บทสนทนาที่ตีพิมพ์ในรายงานสืบเนื่องจากการประชุมวิชาการระดับนานาชาติ หรือในวารสารทางวิชาการระดับชาติที่ไม่อยู่ในฐานข้อมูล ตามประกาศ ก.พ.อ. หรือระเบียบคณะกรรมการการอุดมศึกษาว่าด้วย หลักเกณฑ์การพิจารณาวารสารทางวิชาการสำหรับการเผยแพร่ผลงานทางวิชาการ พ.ศ.2556 แต่สถาบันนำเสนอสถาบันอนุมัติและจัดทำเป็นประกาศให้ทราบเป็นการทั่วไป และแจ้งให้ กพอ./กกอ.ทราบภายใน 30 วันนับแต่วันที่ออกประกาศฉบับสมบูรณ์ที่ตีพิมพ์ในรายงานสืบเนื่องจากการประชุมวิชาการระดับนานาชาติ หรือในวารสารทางวิชาการระดับชาติที่ไม่อยู่ในฐานข้อมูล ตามประกาศ ก.พ.อ. หรือระเบียบคณะกรรมการการอุดมศึกษาว่าด้วย หลักเกณฑ์การพิจารณาวารสารทางวิชาการสำหรับการเผยแพร่ผลงานทางวิชาการ พ.ศ.2556 แต่สถาบันนำเสนอสถาบันอนุมัติและจัดทำเป็นประกาศให้ทราบเป็นการทั่วไป และแจ้งให้ กพอ./กกอ.ทราบภายใน 30 วันนับแต่วันที่ออกประกาศ	3
	---ผลงานที่ได้รับการจดอนุสิทธิบัตร	-
	---บทความวิจัยหรือบทความวิชาการที่ตีพิมพ์ในวารสารวิชาการที่ปรากฏในฐานข้อมูล TCI กลุ่มที่ 2	
	---บทความวิจัยหรือบทความวิชาการที่ตีพิมพ์ในวารสารวิชาการระดับนานาชาติที่ไม่อยู่ในฐานข้อมูล ตามประกาศ ก.พ.อ. หรือระเบียบคณะกรรมการการอุดมศึกษาว่าด้วย หลักเกณฑ์การพิจารณาวารสารทางวิชาการสำหรับการเผยแพร่ผลงานทางวิชาการ พ.ศ.2556 แต่สถาบันนำเสนอสถาบันอนุมัติและจัดทำเป็นประกาศให้ทราบเป็นการทั่วไป และแจ้งให้ กพอ./กกอ.ทราบภายใน 30 วันนับแต่วันที่ออกประกาศ (ซึ่งไม่อยู่ใน Beall's list) หรือตีพิมพ์ในวารสารวิชาการที่ปรากฏ ในฐานข้อมูล TCI กลุ่มที่ 1	
	---บทความวิจัยหรือบทความวิชาการที่ตีพิมพ์ในวารสารวิชาการระดับนานาชาติที่ปรากฏในฐานข้อมูลระดับนานาชาติตามประกาศ ก.พ.อ. หรือระเบียบคณะกรรมการการอุดมศึกษา ว่าด้วย หลักเกณฑ์การพิจารณาวารสารทางวิชาการสำหรับการเผยแพร่ผลงานทางวิชาการ พ.ศ.2556	20
	---ผลงานได้รับการจดสิทธิบัตร	-
	---ผลงานวิชาการที่ใช้สังคมที่ได้รับการประเมินผ่านเกณฑ์การขอตำแหน่งทางวิชาการแล้ว	-
	---ผลงานวิจัยที่หน่วยงานหรือองค์กรระดับชาติว่าจ้างให้ดำเนินการ	-
	---ผลงานค้นพบพันธุ์พืช พันธุ์สัตว์ ที่ค้นพบใหม่และได้รับการจดทะเบียน	-
	---ตำราหรือหนังสือหรืองานแปลที่ได้รับการประเมินผ่านเกณฑ์การขอตำแหน่งทางวิชาการแล้ว	-

CdsID	CdsName	CdsValues
	---ตำราหรือหนังสือหรืองานแปลที่ผ่านการพิจารณาตามหลักเกณฑ์การประเมินตำแหน่งทางวิชาการแต่ไม่ได้นำมาขอรับการประเมินตำแหน่งทางวิชาการ ---จำนวนงานสร้างสรรค์ที่มีการเผยแพร่สู่สาธารณะในลักษณะใดลักษณะหนึ่ง หรือผ่านสื่ออิเล็กทรอนิกส์ online ---จำนวนงานสร้างสรรค์ที่ได้รับการเผยแพร่ในระดับสถาบัน ---จำนวนงานสร้างสรรค์ที่ได้รับการเผยแพร่ในระดับชาติ ---จำนวนงานสร้างสรรค์ที่ได้รับการเผยแพร่ในระดับความร่วมมือระหว่างประเทศ ---จำนวนงานสร้างสรรค์ที่ได้รับการเผยแพร่ในระดับภูมิภาคอาเซียน ---จำนวนงานสร้างสรรค์ที่ได้รับการเผยแพร่ในระดับนานาชาติ ---จำนวนบทความของอาจารย์ประจำหลักสูตรปริญญาเอกที่ได้รับการอ้างอิงในฐานข้อมูล TCI และ Scopus ต่อจำนวนอาจารย์ประจำหลักสูตร	-
7.	การมีงานทำของบัณฑิต (ปริญญาตรี)	
	จำนวนบัณฑิตระดับปริญญาตรีทั้งหมด	N/A
	จำนวนบัณฑิตระดับปริญญาตรีที่ตอบแบบสำรวจเรื่องการมีงานทำภายใน 1 ปี หลังสำเร็จการศึกษา	N/A
	จำนวนบัณฑิตระดับปริญญาตรีที่ได้งานทำหลังสำเร็จการศึกษา (ไม่นับรวมผู้ที่ประกอบอาชีพอิสระ)	N/A
	จำนวนบัณฑิตระดับปริญญาตรีที่ประกอบอาชีพอิสระ	N/A
	จำนวนผู้สำเร็จการศึกษาระดับปริญญาตรีที่มีงานทำก่อนเข้าศึกษา	N/A
	จำนวนบัณฑิตระดับปริญญาตรีที่ศึกษาต่อระดับบัณฑิตศึกษา	N/A
	เงินเดือนหรือรายได้ต่อเดือน ของผู้สำเร็จการศึกษาระดับปริญญาตรีที่ได้งานทำหรือประกอบอาชีพอิสระ (ค่าเฉลี่ย)	N/A
	ผลการประเมินจากความพึงพอใจของนายจ้างที่มีต่อผู้สำเร็จการศึกษาระดับปริญญาตรีตามกรอบ TQF เฉลี่ย (คะแนนเต็ม ๕)	N/A
	จำนวนบัณฑิตระดับปริญญาตรีที่มีกิจการของตนเองที่มีรายได้ประจำอยู่แล้ว	N/A
	จำนวนบัณฑิตระดับปริญญาตรีที่อุปสมบท	N/A
	จำนวนบัณฑิตระดับปริญญาตรีที่เกณฑ์ทหาร	N/A