

Degree Bachelor Master Doctoral

Faculty of Engineering

TQF 2 Bachelor of Engineering Program in Chemical Engineering (International program) Department of Chemical Engineering

Bachelor's Degree Program	
1. Name of the program (Thai) หลักสูตรวิศวกรรมศาสตรบัณฑิต สาขาวิชาวิศวกรรมเคมี (หลักสูตรนานาชาติ) (English) Bachelor of Engineering Program in Chemical Engineering (International Program)	
2. Degree Name (Thai) วิศวกรรมศาสตรบัณฑิต (วิศวกรรมเคมี) (English) Bachelor of Engineering (Chemical Engineering)	
General information of the program	
Type of the program	Academic Program
Required number of credits	Plan A No less than 141 MU credits Plan B No less than 86 MU credits and 280 UoS ¹ credits
Studying duration / program round	4 years
The program's status and opening schedule	Revised Program 2019
Degree granted	Bachelor's Degree
Degree-granting Institutions (MOU with The University of Strathclyde)	Mahidol University
Organizations certifying the standard	The Council of Engineers
Specific information of the program	
Purpose / Goals / Objectives	Goal: To develop MU graduate attributes and globally-competent chemical engineering graduates who possess both knowledge and practical skills for Thailand and overseas. Objectives: On successful completion of this program, graduates will be able to: (1) Practice proficiently as professional chemical engineers in the economic and industrial aspects

¹ UoS: University of Strathclyde



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	<p>(2) Pursue professional growth through advanced studies and research in chemical engineering, or related fields</p> <p>(3) Function efficiently in multidisciplinary teams using their communication, leadership and interpersonal skills</p> <p>(4) Conduct themselves in a professional and ethical manner with social responsibility and the protection of the environment</p>
Distinctive Features	<p>This degree program in Chemical Engineering aims to develop professional chemical engineers whose academic and working qualities satisfy local and international employers, by fostering undergraduate education and research skills in a stimulating multidisciplinary scientific and engineering environment. The program includes a series of skill-building learning activities that allow students to develop employability skills and ability to learn independently. Additionally, we have secured commitments through memorandum of understanding with international universities to provide students with opportunities to participate in academic activities those universities, e.g. research activities, credit transfer.</p>
Educational system	Semester system; classroom mode
Graduates' advancement	
Obtainable jobs	Chemical engineers, Process engineers, Process design engineers, Product design engineers, Academic scholars, Researchers
Further fields of study	After this program, the graduates can pursue their studies in Masters and doctoral degrees in Chemical Engineering or



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	related fields.
Philosophy in program administration	
Educational philosophy	This international program for B.Eng. in Chemical Engineering aims to produce competent graduates, who are full of knowledge and employability skills, through outcome-based education. A blend of learner-centered instruction and assessment will be implemented to equip students with knowledge and prepare them to be ready to work.
Strategy / teaching guidelines	<ul style="list-style-type: none"> • Lecture, interactive lecture • Participatory learning activities: group discussion, group activities, case studies, projects, seminars, peer instruction • Blended learning: flipped classroom, e-learning, computer simulation • Practical work: laboratory, engineering training, engineering projects
Strategy / student's evaluation guidelines	Questioning, observing student behavior, homework, tests, examinations, reports, projects, products, oral presentation, rubrics, self-and peer-assessment
Competences provided to the students	
Generic Competences	<p>Ethical and professional responsibilities: have integrity and altruism, be diligence, respect rules and regulations of organization and community.</p> <p>Critical thinking and Problem-solving: able to identify, formulate and solve problems; think critically; able to make decisions and take action.</p>



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	<p>Planning and time management: able to plan and set priorities to complete tasks in a timely manner.</p> <p>Collaboration: able to work effectively in teams to establish team goals; able to work according to designated roles, be receptive to others' ideas.</p> <p>Communication: demonstrate effective communication verbally and non-verbally.</p> <p>Computer and IT: Effectively use computational and simulation software for chemical engineering and information technology for solving engineering-related problems, communication and collaboration.</p> <p>Learning how to learn: able to acquire knowledge beyond classroom independently; able to analyze and synthesize information, and able to reflect on their own learning.</p>
Subject-specific Competences	<ul style="list-style-type: none"> <input type="checkbox"/> Ability to apply knowledge of basic science and chemical engineering fundamentals <input type="checkbox"/> Ability to solve problems related to chemical engineering based on knowledge in basic science and chemical engineering fundamentals <input type="checkbox"/> Ability to analyze and design chemical equipment and processes <input type="checkbox"/> Ability to conduct experiments in chemical engineering
Graduates' learning outcomes	
PLOs	<p>On successful completion of this program, graduates will be able to:</p> <p>PLO1: identify, formulate, and solve complex engineering problems by applying</p>



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	<p>principles of engineering, science, and mathematics, and integrate to solve the problems related to chemical engineering.</p> <p>PLO2: apply engineering design to produce solutions that meet specified needs related to chemical engineering with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.</p> <p>PLO3: communicate effectively with a range of audiences.</p> <p>PLO4: recognize ethical and professional responsibilities in chemical engineering situations and make informed judgments, which must consider the impact of chemical engineering solutions in global, economic, environmental, and societal contexts.</p> <p>PLO5: function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.</p> <p>PLO6: develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions related to chemical engineering.</p> <p>PLO7 acquire and apply new knowledge as needed, using appropriate learning strategies.</p>
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