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Admission Number

Master of Engineering Programme in Integrated Chemical Engineering (International Programme)

หลักสูตร วิศวกรรมศาสตรมหาบัณฑิต สาขาวิชา วิศวกรรมเคมีบูรณาการ(หลักสูตรนานาชาติ)(ภาคปกติ)

Faculty of Engineering

คณะวิศวกรรมศาสตร์

Expected number of Students to be accepted all year round : 5 Students

Admission Requirements

A candidate must:

1. students must hold a Bachelor's degree in Engineering or Science or any field equivalent of Engineering or Science;
2. they should receive a cumulative GPA of at least 3.00;
3. have a TOEFL score of at least 480, TOEFL computer-based score of 157, TOEFL Internet-based score of 54, or IELTS score of 4.5 or pass the English Proficiency Examination arranged by the Faculty of Graduate Studies. For those who already hold a valid English score, please submit its certificate along with all application documents.

Curriculum Structure

	Credit
Pre-requisite Courses	-
Required Courses	14
Elective Courses no less than	12
Thesis	12

	Credit
Pre-requisite Courses	
EGCH 501 Transport Processes	3(3-0-6)
EGCH 502 Chemical Engineering Kinetics and Reactor Design	3(3-0-6)
EGCH 503 Principles and Calculations in Chemical Engineering	3(3-0-6)
EGCH 504 Food Chemistry and Biochemistry	3(3-0-6)
EGCH 505 Industrial Microbiology	3(3-0-6)
EGCH 508 Chemical Engineering Thermodynamics	3(3-0-6)
Required Courses	
EGCH 601 Computational Techniques in Chemical Engineering	3(3-0-6)
EGCH 602 Statistical Process and Experimental Design	2(2-0-4)
EGCH 608 Advanced Chemical Engineering Thermodynamics	3(3-0-6)
EGCH 607 Advanced Transport Phenomena	3(3-0-6)

EGCH 691 Seminar	1(1-0-2)
EGCH 692 Research Methodology	1(1-0-2)
EGCH 693 Project Work	1(0-7-7)
Elective Courses	
Advanced Chemical Engineering	
EGCH 605 Separation Processes in Chemical Engineering	3(3-0-6)
EGCH 606 Environmental and Safety Engineering	3(3-0-6)
EGCH 613 Sensors Technology	3(3-0-6)
EGCH 615 Advanced Chemical Engineering Kinetics and Chemical Reactor Design	3(3-0-6)
EGCH 617 Advanced Particle Technology	3(3-0-6)
EGCH 618 Electrochemical and Corrosion Engineering	3(3-0-6)
EGCH 619 Industrial Catalytic Processes	3(3-0-6)
EGCH 620 Modeling and Simulation in Chemical Engineering	3(2-2-5)
EGBE 604 Biosensors	3(3-0-6)
EGBE 610 Neural Networks	3(3-0-6)
EGBE 653 Intelligent Systems	3(3-0-6)
Food and Bioprocess Engineering	
EGCH 641 Numerical Computations in Food Process Engineering	3(3-0-6)
EGCH 642 Food and Pharmaceutical Processes Technology	3(3-0-6)
EGCH 643 Food Properties and Quality Assessment	3(3-0-6)
EGCH 645 Non-Thermal Process Engineering	3(3-0-6)
EGCH 647 Advanced Fermentation Technology	3(3-0-6)
EGCH 649 Bioprocess Optimization	3(3-0-6)
EGCH 650 Advanced Biochemical Engineering	3(3-0-6)
EGCH 651 Advanced Enzyme Technology	3(3-0-6)
EGCH 680-689 Current Topics in Chemical Engineering	3(3-0-6)
Pharmaceutical Engineering	
EGCH 671 Project Management for Engineers	3(3-0-6)
EGCH 674 Pharmaceutical Facilities, Equipment and Process Design	3(3-0-6)
EGCH 675 Pharmacokinetics and Drug Delivery	3(3-0-6)
EGBE 631 Advanced Drug Delivery	3(3-0-6)
EGBE 632 Physiological Transport Phenomena	3(3-0-6)
EGBE 633 Biomedical Polymer	3(3-0-6)
EGBE 634 Biomaterials and Biocompatibility	3(3-0-6)

EGBE 635 Biotechnology for Biomedical Engineering	3(3-0-6)
EGBE 651 Bioinformatics	3(3-0-6)
Thesis	
EGCH 698 Thesis	12(0-36-36)

*** These may change in cases where there are suggestions for the improvened of the curriculum**

Additional advantages of the programme

1. Under Project work subject, all students have an opptunity to work with real PBL in an industry.
2. The program is designed to integrate knowledge of Chemical Engineering with other related areas, Food and Bioprocess Engineering and Pharmaceutical Engineering. The module of Pharmaceutical Engineering is the first set launch in Thailand.
3. Professional focus areas :
   (1) Advanced Chemical Engineering as catalyst sensors fuel cell, novel separation etc.
   (2) Food and Engineering as Non-thermal techniques, novel extraction, Biocatalyst, biosensors.
   (3) Pharmaceutical Engineering as drug delivery, herbal extraction, nanoproducts etc.

Details of Scholarships

1. Scholarship of the 60th Year Supreme Reign of His Majesty King Bhumibol Adulyadej.
2. All students have opportunities for Full, Half or Partial scholarships.

Additional information for applicants

1. Only one year for taught courses.
2. Possibility of completing degree in timely (2 years).
3. Gain industrial experience during summer for project work.

Job option after graduation

1. Chemical Engineering
2. Research
3. Lecturer, Scholar

Application Process

Application is only available via online application at www.grad.mahidol.ac.th

Required Documents

Prepare the following required documents to submit via online admission system or post :

- Two (2) recent photographs (1x1 inch in size)
- A copy of an applicant's degree certificate or a letter of graduation certification (for an applicant with a degree completion) — 2 copies
- A letter certifying that an applicant is currently in the final year prior to graduation (for an applicant seeking for a degree) — 2 copies
- A detailed transcript of a degree (for an applicant with a degree completion) — 2 copies
- A grade report with course names and grades received from the first to the current semester prior to graduation — 2 copies
- A copy of identification card — 2 copies
- A copy of house registration certification — 2 copies
- A copy of Certificate of English score: TOEFL/IELTS/MU-Test (if any). See detail here: http://www.grad.mahidol.ac.th/grad/academicinfo/engstandard2553_th.php — 2 copies
- A copy of proof of payment.

Submitting documents via online admission system.

- All documents must be in pdf format (maximum size 2 MB)
- Recent photograph must be in jpeg format only (maximum size 2 MB)

Further information may be obtained from the Director of Graduate Studies, Integrated Chemical Engineering

1. **Asst. Prof. Dr. Nuttawan Yoswatthana (E-mail : nattawan.yos@mahidol.ac.th)**
   Room R-310, Administration Building, Floor 3, Department of Chemical Engineering,
   Faculty of Engineering, Mahidol University, Salaya
   Tel: 02 – 889 2138 Ext. 6117 Fax: 02-8892138 Ext. 6129

2. **Asst.Prof.Dr. Theeraporn Rubcumintara (E-mail : theeraporn.rub@mahidol.ac.th)**
   Room R-310, Building 1,Floor 3, Department of Chemical Engineering,
   Faculty of Engineering, Mahidol University, Salaya
   Tel: 02 – 889 2138 Ext. 6117 Fax: 02-8892138 Ext. 6129

Program Coordinator

Miss Sakanya Leejaroen (E-mail : sakanya.lee@mahidol.ac.th)
Room R-310, Building 1,Floor 3, Department of Chemical Engineering,
Faculty of Engineering, Mahidol University, Salaya
Tel: 02 – 889 2138 Ext. 6117 Fax: 02-8892138 Ext. 6129

Note : 1. The programme of Integrated Chemical Engineering may require students to study the pre-requisite courses:

EGCH 501 Transport Processes	3 Credits
EGCH 502 Chemical Engineering Kinetics and Reactor Design	3 Credits
EGCH 503 Principles and Calculations in Chemical Engineering	3 Credits
EGCH 504 Food Chemistry and Biochemistry	3 Credits
EGCH 505 Industrial Microbiology	3 Credits
EGCH 508 Chemical Engineering Thermodynamics	3 Credits

Students may be required to study the above foundation courses for noncredit. The amount of registered courses depend on the supervision of the Programme Committee for each student.

For more information please contact The Student Admission Section.
Tel . 0 2441 4125 ext. 208-210 , 0 2441 9129, E-mail : gradthai@mahidol.ac.th