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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 : 20 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 2.50;
3. Submit a certificate of English proficiency with minimum admission score:
 - IELTS - at least 3 or
 - TOEFL INTERNET BASED - at least 32 or
 - TOEFL ITP (test arranged by Faculty of Graduate Study, Mahidol University) - at least 400 or
 - MU GRAD TEST (Computer based) - at least 36

Important Notes:

- English proficiency score must be taken within 2 years up to the admission date.
 - **Application without submitting a valid English certificate will NOT be considered.**
 - MU English Competence Standards: www.grad.mahidol.ac.th
 - MU English proficiency tests, please contact the Language Center, Faculty of Graduate Studies.
Tel. 0-2441-4125 ext. 221-222
4. Exceptions from the above requirements may be made by the Program Committee and the Dean of Faculty of Graduate Studies

Written Examination

There is NO written examination for this program. Applicants must check their eligibility for interview upon the announcing date of the interview list which is scheduled for each admission round.

Curriculum Structure

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

Pre-requisite Courses	Credit
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 improved of the curriculum**

Additional advantages of the programme

1. Under Project work subject, all students have an opportunity 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. Full Scholarships
2. Half Scholarships
3. Other Scholarships

Job option after graduation

1. Engineering
2. Research
3. Other

Application Process

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

Required Documents

Applicants must upload all documents via online admission system. All documents must be in PDF format (maximum size 2 MB). Photograph must be in JPEG format

- 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)
- A letter certifying that an applicant is currently in the final year prior to graduation (for an applicant seeking for a degree)
- A detailed transcript of a degree (for an applicant with a degree completion)
- A grade report with course names and grades received from the first to the current semester prior to graduation
- A copy of identification card
- A copy of house registration certification
- A copy of Certificate of English proficiency :

IELTS / TOEFL INTERNET BASED / TOEFL ITP / MU GRAD TEST (Computer based)

- A copy of proof of payment.

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

1. 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

2. 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

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

**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**