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Doctor of Philosophy Programme in Biomedical Engineering (International Programme)

Faculty of Engineering

Admission Requirements

A candidate must:

1. Hold a Bachelor Degree (for Bachelor's degree holder category) in Engineering, Sciences, Medicine, Dentistry, Pharmacy or Medical Related Disciplines with a GPA no less than 3.50. Or,
2. Hold a Master Degree (for master degree holder category) in Engineering, Sciences, Dentistry, Pharmacy or Medical Related Disciplines with a GPA no less than 3.50., Or,
3. Be registering as a Master Degree student in Biomedical Engineering program at the Mahidol University, and wish to transfer to Ph.D. program. The candidate in this category must hold a GPA no less than 3.25 for his/her current study, and must be registering for more than 1 year. Nonetheless, the transferring must be approved by Master Degree administration board, Ph.D. administration board and the Dean of Graduate Studies.
4. Have a TOEFL ITP score of at least 500, TOEFL Internet-based score of 61 or IELTS score of 5 .

Exceptions from the above conditions may be granted by the Programme Committee and the Dean of Faculty of Graduate Studies;

Curriculum Structure

Plan 2	Credit
For Bachelor or Master Degree	
Fundamental Courses	9
Required Courses	11
Elective Courses	15
Thesis	48
For Master Program in Biomedical Engineering	
Fundamental Courses	9
Required Courses	11
Elective Courses	15
Thesis	36

	Credit
Fundamental Courses	
EGBE 524 Research Methodology	3(3-0)
EGBE 525 English for Research	3(3-0)
* EGBE 601 Medical Signal Processing and Instrumentation	3(3-0)
* EGBE 607 Material and Mechanics in Medicine	3(3-0)
* Choose to study between EGBE 601 and EGBE 607 base on thesis research interested	
Required Courses	
EGBE 515 Advanced Physiology	3(3-0)
EGBE 516 Advanced Engineering Mathematics	3(3-0)
EGBE 606 Biomedical Engineering	3(3-0)
EGBE 690 Biomedical Engineering Seminar I	1(1-3)
EGBE 691 Solid and Fluid Mechanics	1(1-3)
Elective Courses	
EGBE 522 Biomedical Signal Precessing	3(3-0)
EGBE 522 Advanced Biomedical Image Precessing	3(3-0)
EGBE 551 Computational Methods for Biomedical Engineering	3(3-0)
EGBE 560 Medical Robotics	3(3-0)
EGBE 604 Biosensors	3(3-0)
EGBE 605 Medical Imaging	3(3-0)
EGBE 610 Neural Networks	3(3-0)
EGBE 611 Advanced Medical Imaging	3(3-0)
EGBE 615 Physiological System Modeling and Identifacation	3(3-0)
EGBE 616 Optimization Methods	3(3-0)
EGBE 620 Wavelets and Time-Frequency Analysis	3(3-0)
EGBE 621 Higher-Order Spectral Analysis	3(3-0)
EGBE 622 Computer Graphics in Medicine	3(3-0)
EGBE 624 Brain-computer Interface	3(3-0)
EGBE 630 Cell and Tissue Engineering	3(3-0)
EGBE 631 Advanced Drug Delivery	3(3-0)

EGBE 632 Physiological Transport Phenomena	3(3-0)
EGBE 633 Biomedical Polymer	3(3-0)
EGBE 634 Biomaterials and Biocompatibility	3(3-0)
EGBE 635 Biotechnology for Biomedical Engineering	3(3-0)
EGBE 636 Organic Chemistry for Biomedical Engineering	3(3-0)
EGBE 637 Analytical Chemistry for Biomedical Engineering	3(3-0)
EGBE 641 Physiological Fluid Mechanics	3(3-0)
EGBE 642 Advanced Biomechanics	3(3-0)
EGBE 643 Cardiovascular Systems	3(3-0)
EGBE 644 Neural Interfacing	3(3-0)
EGBE 645 Biomedical Prosthetics	3(3-0)
EGBE 646 Design and Manufacture of Biomedical Devices	3(3-0)
EGBE 651 Bioinformatics	3(3-0)
EGBE 652 Bioimage Informatics	3(3-0)
EGBE 653 Intelligent Systems	3(3-0)
EGBE 654 Nonlinear Dynamics in Physiology	3(3-0)
EGBE 660 Advanced Computer-Integrated Surgery	3(3-0)
EGBE 661 Robot-Assisted Surgery	3(3-0)
EGBE 662 Design and Control of Haptic Interfaces	3(3-0)
EGBE 663 Biochemistry for Biomedical Engineering	3(3-0)
EGBE 664 Nanobiotechnology	3(3-0)
EGBE 680-689 Special Topics in Biomedical Engineering	3(3-0)
Thesis	
EGBE 699/799 Dissertation	36/48(0-144/108-0)
* These may change in cases where there are suggestions for the improvement of the curriculum	

Application Process

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

Job option after graduation

1. Researcher
2. Lecturer
3. Biomedical engineers
4. Employees of the medical device or drug
5. Biomedical Business Owner

Required Documents

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

1. Completed an Online Application at www.grad.mahidol.ac.th which comprised with
 - Form A** : Application Form
 - Form B** : Background and Proposed Field of Study
 - Form C** : Recommendation Forms (directly submitted by at least 2 referees)
2. Two copies of Degree Certificate (with officially certified English translation)
3. Two copies of Academic Transcript (with officially certified English translation)
4. Two copies of Recent Photos (Passport size)
5. Two copies of Passport
6. Two copies of English certificate (TOEFL/ IELTS/ MU-Grad Test)

(For Doctoral Program)

- TOEFL ITP score of at least 500, TOEFL Internet-based score of 61, or IELTS score of 5

(For Master's Program)

- TOEFL ITP score of at least 480, TOEFL Internet-based score of 54, IELTS score of 5 or MU GRAD TEST score of 60.

Notes

- Only accept TOEFL ITP score from examination center arranged by Faculty of Graduate Studies, Mahidol University.
- TOEFL ITP taken from other domestic and overseas institutes are invalid.
- The test date must be within previous 2 years before application date
- Applicant who obtained a valid English score must submit an **official score certificate** along with your application. Otherwise, your English score will not be considered.
- Detail of English Competency Standard for Admission:
<http://www.grad.mahidol.ac.th/en/current-students/language-center.php>

7. Two copies of Curriculum Vitae
8. Two copies of Statement of Purposes and Career Goals
9. Two copies of Current bank statement / Scholarship letter (if any)
10. Two copies of Concept paper / research proposal (recommended for all applicants)
11. Two copies of additional documents may be requested by each program (such as letter of work experience / professional license/ related certificates and awards)

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, Biomedical Engineering :

1. Asst. Prof. Jackrit Suthakorn (E-mail : jackrit.sut@mahidol.ac.th)

Department Office, Engineering Building 3, Floor 3,
Department of Biomedical Engineering, Faculty of Engineering.
Tel. 0 2889 2138 Ext. 6367 Fax. 0 2441 4254

2. Lect. Dr. Sanitta Thongpang (E-mail : sanita.tho@mahidol.ac.th)

Department Office, Engineering Building 3, Floor 3,
Department of Biomedical Engineering, Faculty of Engineering.
Tel. 0 2889 2138 Ext. 6367 Fax. 0 2441 4254

Program Coordinator

Miss. Matchima Rattalam (E-mail : matchima.rat@mahidol.ac.th)

Department Office, Engineering Building 3, Floor 3,

Department of Biomedical Engineering, Faculty of Engineering.

Tel. 0 2889 2138 Ext. 6367 Fax. 0 2441 4254

Note 1. For more education information : www.grad.mahidol.ac.th

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