

Department of Biomedical Engineering

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What is Biomedical Engineering?

Students learn basic principles and acquire hands-on experience involved in application of engineering to medicine. The major topics include medical instrumentation (including diagnostic and therapeutic devices), biological signal processing, medical imaging systems, computer applications in medicine, medical informatics, telemedicine, prosthetics and orthoses, bio-sensors, bio-materials, and meridian and acupuncture science. Applicants are expected to have strong motivation toward engineering application for enhancing the quality of human life.

Biomedical Engineering at Kyung Hee

The department took its first step in 1998 with the name of the Department of Oriental Medical System Engineering, and was renamed as the Department of Biomedical Engineering in 2001. The department has been with the College of Electronics and Information since 1999. The department offers inter-disciplinary curricula (engineering and basic medicine) in collaboration with the College of Oriental Medicine, the Medical School, and other engineering schools. The educational philosophy of the department is to train competent engineers who will take active roles in the field of biomedical engineering for Western Medicine and Eastern Medicine as well.

Degree Requirements

To receive the Bachelor of Science degree in Biomedical Engineering, students should:

- complete a minimum of 130 units.
- satisfy the general requirements of the university for the B.S. degree.
- complete 12 units of required courses.
- complete 49 units of elective courses for biomedical engineering.
- complete 35 units stated in the Humanitas elective courses.
- acquire a minimum TOEIC score of 700 to show his/her English proficiency.

Courses

Year 1

Calculus I, Calculus II, Physics and Experiment I & II, General Chemistry, General Biology, English I & II

Year 2

Engineering Mathematics, Elementary Programming, Human Physiology for Biomedical Engineers, Electromagnetic Fields and Waves, Biochemistry, Basic Biomedical Experiments, Neuro Physiology for Biomedical Engineers, Basic Electronic Circuits, Probability and Random Variables, Medical Information Programming and Practice, Molecular Cellular Biology

Year 3

Knowledge System of Oriental Medicine, Applied Electronic Circuits, Applied Electronics Laboratory, Biomedical Instrumentation Laboratory, Computer Architecture, Biomedical Instrumentation I, Acupuncture and Moxibustion, Signals and Systems, Biomechanics, Biosignal Processing and Practice, Biomedical System Design and Experiment

Year 4

Creative Design, Biomedical System Modeling, Biomedical Engineering and Management, Medical Imaging System, Special Topics I in Biomedical Engineering, Special Topics II in Biomedical Engineering, Neural Engineering, Nano-Bio Engineering, Biomaterial

Careers and Graduate Destinations

Throughout the world, the medical and healthcare industry is undoubtedly one of the fastest growing areas in the 21st century, and thus demands motivated engineers in related areas. Particularly, various interdisciplinary research and development in the area require students to have broad knowledge in both engineering and medicine. Consequently, the job market is wide open for well-motivated biomedical engineers. Graduates are also encouraged to pursue an advanced degree in graduate schools. The department offers both the Master's program and the doctoral program to those who are deeply interested in research and development in the area.

Faculty

Gon Khang, Ph.D. Stanford University, 1988, Professor, Mechanical Engineering, gkhang@khu.ac.kr
Senug-Hun Park, Ph.D. University of Florida, 1990, Professor, Electrical Engineering, parksh@khu.ac.kr
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