

Board Meeting
July 24, 2014

ESTABLISH THE MASTER OF ENGINEERING IN BIOINSTRUMENTATION,
COLLEGE OF ENGINEERING AND GRADUATE COLLEGE, URBANA

Action: Establish the Master of Engineering in Bioinstrumentation, College of Engineering and Graduate College

Funding: No New Funding Required

The Chancellor, University of Illinois at Urbana-Champaign, and Vice President, University of Illinois with the advice of the Urbana-Champaign Senate recommends approval of a proposal from the College of Engineering and the Graduate College to establish the Master of Engineering in Bioinstrumentation.

The proposed self-supporting program is professionally oriented and aimed at providing students with greater depth and breadth for careers that involve the science of measuring physiological biological structures (tissues, organs), small biological units (cell, bacteria, viruses), and biological molecules (proteins, peptides, DNA). Due to the interdisciplinary nature of the topic, the program will involve Bioengineering, Electrical and Computer Engineering, Physics, Molecular and Cellular Biology, Chemistry, and Chemical Engineering.

The curriculum will introduce students to the core concepts inherent across many Bioinstrumentation fields (for example, DNA sequencing instruments, point-of-care

diagnostics, ultrasound imaging, OCT, and MRI) but because the curriculum is integrated, students will come to understand the relationships shared between these areas. This approach will encourage the application of concepts learned in one area to problems raised in another.

Bioinstrumentation is central to all modes of biomedical imaging, point-of-care diagnostics, personalized medicine, high throughput genome sequencing, life science research, environmental monitoring, and biowarfare defense. A growing need for engineers who require a deeper knowledge of bioinstrumentation fundamentals in preparation for careers in industry, national laboratories, health policy, medical research, and medical practice is anticipated. The program is designed principally for students who wish to enter industry as practicing professionals.

The Board action recommended in this item complies in all material respects with applicable State and federal laws, University of Illinois *Statutes*, *The General Rules Concerning University Organization and Procedure*, and Board of Trustees policies and directives.

The Vice President for Academic Affairs concurs with this recommendation. The University Senates Conference has indicated that no further Senate jurisdiction is involved.

The President of the University recommends approval. This action is subject to further review and approval by the Illinois Board of Higher Education.