

APPROVED

University of Toledo

Graduate Program Requirement Revision

Contact Person

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Present

College

Engineering

Dept/Academic
Unit

Bioengineering

Program Code

BIOE

Program Name

Master of Science in Bioengineering

Minimum number of credit hours for
completion (if changed):List all courses which comprise the certificate or degree and
identify term offered (Summer/Fall/Spring)

MS Thesis requirements:

Complete 12 hours of Bioengineering core coursework.
Complete 3 hours of coursework to satisfy the mathematics
requirement.
Complete 6 hours of elective coursework as approved by the
Graduate Director.
Complete 9 hours of Bioengineering M.S. thesis research.

Identify delivery method

In Class

Proposed

College

Engineering

Dept/Academic
Unit

Bioengineering

Program Code

BIOE

Program Name

Master of Science in Bioengineering

Minimum number of credit hours for
completion (if changed):List all courses which comprise the certificate or degree and
identify term offered (Summer/Fall/Spring)

In addition to the Thesis option which will remain, the
students can now choose the MS Project option to complete
the MS in Bioengineering. The requirements for this are:

Complete 12 hours of Bioengineering core coursework.
Complete 3 hours of coursework to satisfy the mathematics
requirement.
Complete 9 hours of elective coursework as approved by the
Graduate Director.
Complete 6 hours of Bioengineering M.S. project research.

Please see attached sheet for more details on the requirements
for the Project option.

Identify delivery method

In Class

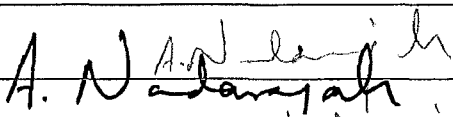
Proposed Effective Term

2012

10 (Summer)

Program Approval

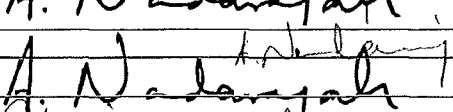
Department Curriculum Authority



Date

Jun 18, 2012

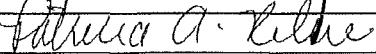
Department Chairperson



Date

Jun 18, 2012

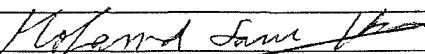
College Curriculum Authority or Chair



Date

6/25/2012


College Dean



Date

6/25/2012

Graduate Council



Date

7-16-12

Dean of Graduate Studies



Date

07/16/12

Office of the Provost

Date

For Administrative Use Only

Effective Date

CIP Code

Subsidy Taxonomy

Program Code

Instruction Level

Coursework Requirements for Master of Science in Bioengineering with Project Option

A **minimum of 30 semester hours** of approved graduate coursework is required for a Master of Science in Bioengineering (MSBE) Project Option degree. All coursework must be **approved by the Graduate Director**. Each student must meet the following minimum general coursework requirements:

- Register and attend the weekly Bioengineering Department seminar. Registration and attendance is **mandatory every semester**.
- Complete **12** hours of Bioengineering **core** coursework.
- Complete **3** hours of coursework to satisfy the **mathematics** requirement.
- Complete **9** hours of **elective** coursework as approved by the Graduate Director.
- Complete **6** hours of Bioengineering M.S. **project research**.

Curriculum

Bioengineering can be broadly classified into the three areas, or subdisciplines, of biomechanics, bioelectronics, and bioprocessing. Students must complete core courses in all three subdisciplines of bioengineering. Elective coursework may be selected to support one or more subdisciplines as needed for completion of the thesis research.

Table 1: Coursework M.S. in Bioengineering (MSBE) curriculum requirements.

Category and Courses	Credit Hours
Core	
BIOE 5200 Physiology for Bioengineers or BIOE 6100 Computational Physiology	12 hours
BIOE 5260 Medical Imaging Systems I	
BIOE 6520 Orthopaedic Biomechanics	
BIOE 6310 Biochemical Engineering Principles	
Mathematics	
MIME 6000 Advanced Engineering Mathematics I	3 hours
Electives	
no more than 3 hrs Special Topics courses	9 hours
BIOE 6920 Bioengineering Project*	6 hours
BIOE 5930 Bioengineering Seminar	---
Total (minimum)	30 hours

* Students must complete 6 hours of BIOE 6920 and submit a written report to the satisfaction of the faculty project supervisor.