Master of Science in Biomedical Engineering

The M.S. and Ph.D. programs in Biomedical Engineering are offered by UND and North Dakota State University (NDSU). The proposed programs would be offered jointly by UND's College of Engineering and Mines, School of Medicine and Health Sciences, and NDSU's College of Engineering.

Every M.S. or Ph.D. student will be associated with at least one of the following Biomedical Research Groups (BRGs):

- Biomechanics
- Biomaterials
- Bio-instrumentation
- Multi-scale, bio-system simulation and modeling
- Bio-Signals
- Other emerging areas as identified

Two separate graduate degree programs are offered:

- Master of Science (M.S.) in Biomedical Engineering
- Doctor of Philosophy (Ph.D.) in Biomedical Engineering

The student's graduate committee for both the M.S. and Ph.D. must consist of at least one faculty member from NDSU.

Program Requirements

This program prepares students who have a strong interest in research-oriented engineering related to the medical device field. All of the general requirements for enrollment, participation, and completion of a degree documented in the UND Academic Catalog as appropriate shall be required.

The M.S. degree will be offered with two options: 1) thesis-based; and 2) non-thesis-based. Specific requirements over and above the general catalog requirements for both thesis-based and non-thesis-based options are listed below.

Admission Requirements

1. Bachelor of Science degree from an ABET-accredited engineering program; or
2. Students holding a B.S. degree in other disciplines may be admitted to Qualified Status with an obligation to acquire the necessary background undergraduate engineering knowledge. The exact requirements will be determined on a case-by-case basis; and/or
3. Graduate Record Examination General Test for applicants from non-ABET accredited programs; and
4. Minimum GPA of 3.0 (4.0 scale) is required. Conditional admittance may be obtained for GPAs less than 3.0.

Degree Requirements – Thesis-based (total 30 credits)

Required:		
Anatomy-Physiology (3-6 credits):		
EE 590	Advanced Electrical Engineering Problems (Physiology and Anatomy for Biomedical Engineers)	6
or		
Zoo 660	(NDSU - Animal Physiology)	3
Seminar - 3 credits (1 per semester) taken from the following:		
EE 570	Seminar	1
ENGR 562	Seminar in Engineering	1
ENGR 790	(NDSU - Seminar)	1
Classes related to BRG (2-3 classes)		6-9
Thesis		9
Electives:		
Internship (industrial, clinical, or research lab)		0-3
Graduate Preparation, e.g., Grant Writing		0-3
Elective courses approved by advisor		1-9

Degree Requirements – Non Thesis-based (total 30 credits)

Required:		
Anatomy-Physiology (3-6 credits from the following):		
EE 590	Advanced Electrical Engineering Problems (Anatomy & Physicology for the Biomedical Engineer)	6
or		
ZOO 660	(NDSU - Animal Physiology)	3
Seminar (3 credits, 1 per semester) Seminar class can be taken from the following:		3
ENGR 562	Seminar in Engineering	1
EE 570	Seminar	1
ENGR 790	(NDSU - Seminar)	1
Classes related to BRG (2-3 classes)		6-9
Project		3
Electives:		3
Internship (industrial, clinical or research lab)		0-3
Graduate Preparation, e.g., Grant Writing		0-3
Electives approved by advisor		1-15