Bachelor of Science in Biomedical Engineering to Master of Science in Bioengineering Fast Track

About This Program

The Bachelor of Science in Biomedical Engineering to Master of Science in Bioengineering Fast Track enables outstanding UT Arlington senior undergraduate students in biomedical engineering to satisfy degree requirements leading to a master's degree in bioengineering while completing their undergraduate studies.

When students with Biomedical Engineering BS are within 30 hours of completing their undergraduate degree requirements, they may take up to 9 hours of graduate level coursework approved by the program to satisfy both undergraduate and graduate degree requirements. Course credits from these graduate level courses will be used to meet BS degree plan requirements. A student completing the maximum allowable hours (9) while in undergraduate status would have to take only 21 additional hours to meet the minimum requirements for graduation in the 30-hour master's degree program.

ASSOCIATED PROGRAMS

For detailed information about the programs associated with this Fast Track, refer to their individual degree pages.

Biomedical Engineering BS

Bioengineering MS

Admissions Criteria

Students interested in this program should consult with Bioengineering advisors when they are within 30 hours of completing their bachelor's degrees. They must have completed at least 30 hours of relevant course work at UT Arlington, achieving a GPA of at least 3.0 in those courses, and have an overall GPA of 3.0 or better in all UT Arlington College of Engineering courses. Additionally, they must have completed the following foundation courses with a minimum GPA of 3.3 in those courses:

- BE 3317 LINEAR SYSTEMS IN BIOENGINEERING
- BE 3380 HUMAN PHYSIOLOGY IN BE
- BE 3415 FUNDAMENTALS OF BIOMOLECULAR ENGINEERING
- BE 4382 LABORATORY PRINCIPLES
- BE 3310 BIOMECHANICS AND FLUID FLOW WITH COMPUTATIONAL LABORATORY (Tissue Engineering concentration) or BE 3344 BIOINSTRUMENTATION (Medical Imaging concentration)

For automatic admission to the master's program, students must complete up 9 hours of work in 5000 level BE courses with at least a B.

Curriculum

Biomedical Engineering BS Foundations		
Complete the UTA Core curriculum and Biomedical Engineering BS pre-professional program per catalog.		79
Biomedical Engineering Specialization (Professional Program)		
BE 3301	CELL PHYSIOLOGY FOR BIOENGINEERS	3
Select one of the following options:		2
BE 3280	INTRODUCTION TO MEDICAL DEVICE REGULATORY REQUIREMENTS & QUALITY STANDARDS	
or BE 3101	SEMINAR IN BIOENGINEERING	
& BE 3191	and DIRECTED RESEARCH IN BIOENGINEERING	
BE 3317	LINEAR SYSTEMS IN BIOENGINEERING [1]	3
BE 3380	HUMAN PHYSIOLOGY IN BE [1]	3
BE 4350	SENIOR DESIGN PROJECT I	3
BE 3415	FUNDAMENTALS OF BIOMOLECULAR ENGINEERING [1]	4
BE 4355	SENIOR DESIGN PROJECT II	3
BE 4382	LABORATORY PRINCIPLES [1]	3
Concentration		
Select one of the following concentrations:		24
Tissue Engineering		
BE 3310	BIOMECHANICS AND FLUID FLOW WITH COMPUTATIONAL LABORATORY [1]	

or BE 4312	TISSUE BIOMECHANICS AND BIOENGINEERING
BE 3367	CELL CULTURE AND BIOMATERIAL LABORATORY
or BE 4318	MEDICAL DEVICE PROTOTYPING
or BE 4373	FORMULATION AND CHARACTERIZATION OF DRUG DELIVERY SYSTEMS
BE 4337	TRANSPORT PHENOMENA IN BIOMEDICAL ENGINEERING
or BE 4314	BIOMEDICAL IMPLANTS
BE 4368	AN INTRODUCTION TO TISSUE ENGINEERING AND REGENERATIVE MEDICINE
or BE 4364	TISSUE ENGINEERING
or BE 4372	DRUG DELIVERY SYSTEM
BE 4331	BIOPOLYMERS AND BIOCOMPATIBILITY
or BE 4333	NANO BIOMATERIALS AND LIVING-SYSTEMS INTERACTION
Tissue Engineering Technical Electives	
Select 3 from the following in consultation with BE advisor:	
BE 2310	ENGINEERING APPROACHES TO SOLVING CLINICAL CHALLENGES
BE 3325	FLUORESCENCE MICROSCOPY
BE 3327	TISSUE OPTICS
BE 3343	MATLAB AND APPLICATIONS FOR BIOENGINEERS
BE 3344	BIOINSTRUMENTATION [1]
BE 3346	MEDICAL IMAGING
BE 3352	DIGITAL PROCESSING OF BIOLOGICAL SIGNALS
BE 4300	SPECIAL TOPICS IN BIOENGINEERING
BE 4312	TISSUE BIOMECHANICS AND BIOENGINEERING
BE 4314	BIOMEDICAL IMPLANTS
BE 4318	MEDICAL DEVICE PROTOTYPING
BE 4324	BIOMEDICAL OPTICS LABORATORY
BE 4326	TISSUE ULTRASOUND-OPTICAL IMAGING
BE 4329	NEURAL ENGINEERING
BE 4364	TISSUE ENGINEERING
BE 4366	PROCESS CONTROL IN BIOTECHNOLOGY
BE 4368	AN INTRODUCTION TO TISSUE ENGINEERING AND REGENERATIVE MEDICINE
BE 4372	DRUG DELIVERY SYSTEM
BE 4373	FORMULATION AND CHARACTERIZATION OF DRUG DELIVERY SYSTEMS
BE 4385	STEM CELL TISSUE ENGINEERING
BE 4388	MEDICAL PRODUCT DESIGN AND DEVELOPMENT
BIOL 3315	GENETICS
6-9 hours of 5000 level BE coursework approved by advisor.	
Medical Imaging	
BE 3344	BIOINSTRUMENTATION
BE 3346	MEDICAL IMAGING
BE 3352	DIGITAL PROCESSING OF BIOLOGICAL SIGNALS
BE 4324	BIOMEDICAL OPTICS LABORATORY
Medical Imaging Technical Electives	
Select 4 of the following consultation with BE advisor:	
BE 2310	ENGINEERING APPROACHES TO SOLVING CLINICAL CHALLENGES
BE 3310	BIOMECHANICS AND FLUID FLOW WITH COMPUTATIONAL LABORATORY
BE 3325	FLUORESCENCE MICROSCOPY
BE 3327	TISSUE OPTICS
BE 3343	MATLAB AND APPLICATIONS FOR BIOENGINEERS
BE 3367	CELL CULTURE AND BIOMATERIAL LABORATORY
BE 4312	TISSUE BIOMECHANICS AND BIOENGINEERING
BE 4314	BIOMEDICAL IMPLANTS
BE 4326	TISSUE ULTRASOUND-OPTICAL IMAGING

BE 4300	SPECIAL TOPICS IN BIOENGINEERING	
BE 4318	MEDICAL DEVICE PROTOTYPING	
BE 4329	NEURAL ENGINEERING	
BE 4331	BIOPOLYMERS AND BIOCOMPATIBILITY	
BE 4333	NANO BIOMATERIALS AND LIVING-SYSTEMS INTERACTION	
BE 4337	TRANSPORT PHENOMENA IN BIOMEDICAL ENGINEERING	
BE 4364	TISSUE ENGINEERING	
BE 4366	PROCESS CONTROL IN BIOTECHNOLOGY	
BE 4368	AN INTRODUCTION TO TISSUE ENGINEERING AND REGENERATIVE MEDICINE	
BE 4372	DRUG DELIVERY SYSTEM	
BE 4373	FORMULATION AND CHARACTERIZATION OF DRUG DELIVERY SYSTEMS	
BE 4385	STEM CELL TISSUE ENGINEERING	
BE 4388	MEDICAL PRODUCT DESIGN AND DEVELOPMENT	
BIOL 3315	GENETICS	
EE 3407	ELECTROMAGNETICS	
6-9 hours of 5000 level BE coursework approved by advisor.		
Bioengineering MS		
Complete MS requirements per catalog		21
Total Hours		**148**

[1] These courses must be completed with a GPA of 3.3 or better for admission to the fast track see admissions criteria.

Advising Resources

First time in college students meet with engineering advisors in the UAEC (UAECengineering@uta.edu). Transfer students are advised prior to New Maverick Orientation by the department. Students, please read all student emails carefully and consult the department advising webpage for additional contact information and answers to common questions.

Location:

ERB 243

Email:

BEugadvising@uta.edu

Phone:

817-272-6250

Web:

Schedule an appointment (https://www.uta.edu/academics/schools-colleges/engineering/academics/departments/bioengineering/students/)