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

About This Program

The Bachelor of Science in Mathematics to Master of Science in Biomedical Engineering Fast Track enables outstanding undergraduate students in Mathematics to receive dual undergraduate and graduate course credit leading to receiving both a Bachelor's in Mathematics and a Master's Biomedical Engineering. See an advisor for additional information about this program.

ASSOCIATED PROGRAMS

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

Mathematics BS (https://catalog.uta.edu/science/math/undergraduate/maths-bs/)

Biomedical Engineering MS (https://catalog.uta.edu/engineering/bio/graduate/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 Science courses. Additionally, they must have completed the following undergraduate foundation courses with a minimum GPA of 3.3 in those courses:

- BE 3317 LINEAR SYSTEMS IN BIOENGINEERING
- BE 3320 BIOMEDICAL SIGNAL ACQUISITION AND ANALYSIS
- MATH 3318 DIFFERENTIAL EQUATIONS
- MATH 3345 NUMERICAL ANALYSIS AND COMPUTER APPLICATIONS
- MATH 4313 MATHEMATICAL STATISTICS

For automatic admission to the graduate program, students should also have completed up to 9 SCH of required graduate courses from the list indicate above, each with a minimum grade of B. These courses will count for both the undergraduate and the graduate degree.

Contact Bioengineering advisors for more information about the program.

Curriculum

BS Foundations		
Complete general education core and Mathematics foundations per catalog.		54
Mathematics Specialization		
MATH 2326	CALCULUS III	3
MATH 3300	INTRODUCTION TO PROOFS (satisfies Oral Communication Competency)	3
MATH 3316	STATISTICAL INFERENCE	3
MATH 3318	DIFFERENTIAL EQUATIONS	3
MATH 3321	ABSTRACT ALGEBRA I	3
MATH 3330	INTRODUCTION TO LINEAR ALGEBRA AND VECTOR SPACES	3
MATH 3335	ANALYSIS I	3
MATH 3345	NUMERICAL ANALYSIS AND COMPUTER APPLICATIONS	3
Additional advance hours in mathematics		18
Additinal advanced hours (MATH 3301 or above, expcept for capstone mathematics courses specifically for prospective middle or secondary grades mathematics teatchers)		
Select one any two from separate groups:		6
Group 1		
MATH 4321	ABSTRACT ALGEBRA II	
Group 2		
MATH 4334	ADVANCED MULTIVARIABLE CALCULUS	
MATH 4335	ANALYSIS II	
Group 3		

MATH 4311	STOCHASTIC MODELS AND SIMULATION	
MATH 4312	ACTUARIAL RISK ANALYSIS	
MATH 4313	MATHEMATICAL STATISTICS	
MATH 4324	INTRODUCTION TO PARTIAL DIFFERENTIAL EQUATIONS	
MATH 4330	ADVANCED LINEAR ALGEBRA	
MATH 4345	NUMERICAL ANALYSIS & COMPUTER APPLICATIONS II	
Additional elective		3
Biomedical Engineering Specialization		
BE 3317	LINEAR SYSTEMS IN BIOENGINEERING	3
BE 3320	BIOMEDICAL SIGNAL ACQUISITION AND ANALYSIS	3
Up to three graduate courses in Biomedical Engineering chosen from the following list will be allowed for undergraduate credit in Fast Track Program:		9
BE 5309	HUMAN PHYSIOLOGY IN BIOENGINEERING	
BE 5325	FLUORESCENCE MICROSCOPY	
BE 5326	TISSUE ULTRASOUND OPTICAL IMAGING	
BE 5337	TRANSPORT PHENOMENA IN BIOMEDICAL ENGINEERING	
BE 5343	IMAGE PROCESSING WITH MATLAB: APPLICATIONS IN MEDICINE AND BIOLOGY	
BE 5344	BIOINSTRUMENTATION I	
BE 5346	MEDICAL IMAGING	
BE 5352	DIGITAL PROCESSING OF BIOLOGICAL SIGNALS	
BE 5364	TISSUE ENGINEERING	
BE 5365	TISSUE ENGINEERING LAB	
BE 5366	PROCESS CONTROL IN BIOTECHNOLOGY	
BE 5372	DRUG DELIVERY SYSTEM	
BE 5373	FORMULATION AND CHARACTERIZATION OF DRUG DELIVERY SYSTEMS	
BE 5382	LABORATORY PRINCIPLES	
BE 5388	MEDICAL PRODUCT DESIGN AND DEVELOPMENT	
Biomedical Engineening MS		
Complete MS requirements per catalog.		21
Total Hours		**141**

SUGGESTED COURSE SEQUENCE

First Year

First Semester	Hours	Second Semester	Hours
ENGL 1301	3	MATH 1426	4
HIST 1301	3	Modern Language Level 1	3
UNIV 1131	1	CHEM 1441	4
CSE 1310	3	ENGL 1302	3
BIOL 1441	4	Social & Behavioral	3
	14		**17**

Second Year

First Semester	Hours	Second Semester	Hours
MATH 2425	4	MATH 2326	3
PHYS 1443	4	MATH 3300	3
MATH 3330	3	MATH 3318	3
Modern Language Level II	3	PHYS 1444	4
Creative Arts	3	BE 3380	3
	17		**16**

Third Year

First Semester	Hours	Second Semester	Hours
MATH 3313	3	HIST 1302	3
MATH 3316	3	MATH 3321	3
MATH 3335	3	MATH 4313	3
MATH 3345	3	MATH 4335	3
BE 3317	3	BE 3320	3
	15		**15**

Fourth Year			
First Semester	**Hours**	**Second Semester**	**Hours**
BE 4337	3	Choose one BE graduate course	3
POLS 2311	3	POLS 2312	3
Choose 2 BE graduate courses	6	Two statistics undergraduate courses	6
Language, Philosophy, & Culture	3	BE 4382	3
	15		**15**
Fifth Year			
First Semester	**Hours**	**Second Semester**	**Hours**
Choose 2 Statistics graduate level courses	6	Choose 4 BE graduate level courses	12
Choose 1 BE graduate level course	3		
	9		**12**

Total Hours: 145

Advising Resources

First-time-in-college students should plan to speak to the math advisor when starting their second year. Transfer students should contact the math advisor after acceptance at UTA to create a degree plan and enroll in classes.

Location:

PKH 489

Email:

math.advising@uta.edu

Phone:

817-272-9688

Web:

Contact Information and Scheduling (https://www.uta.edu/academics/schools-colleges/science/departments/mathematics/advising/)