

## Biomedical Engineering Degree Plan – Biomaterials, Mechanics and Tissue Engineering

First year BME students take 12 credit hours in the fall and spring, and 6 credit hours in the summer. In subsequent years they are enrolled in 9 credit hours in fall and spring, and 6 credit hours in the summer. Typically, track-related course work is completed in the first two years, and in subsequent years students are enrolled for research, seminars or journal clubs totaling full-time enrollment equivalency. Advancement of the student to Ph.D. candidacy is dependent upon passing the qualifying examination (Exam I), which generally takes place in the second year. In their final semester, students register for BME Dissertation (9 credit hours) instead of research credit hours. A typical degree plan is shown below.

Year	Term	Title	Credit Hour	Total Credit Hrs/Term
<b>First Year</b>	<b>Fall</b>	Professionalism, Responsible Conduct of Research, and Ethics I	1	
		DBS Core Course – Cells	2	
		DBS Core Course – Genes or Proteins	2	
		Biomechanics in Human Disease	3	
		Directed Research	.5	
	Laboratory Rotations	3.5	Semester Total: 12	
	<b>Spring</b>	Professionalism, Responsible Conduct of Research, and Ethics II	1	
		Advanced Elective Coursework	3	
		Advanced Elective Coursework	1.5	
	<b>Summer</b>	Laboratory Rotations	6.5	Semester Total: 12
Human Physiology		3		
		Research	3	Semester Total: 6
<b>Second Year</b>	<b>Fall</b>	Seminar/Works in Progress in Biomedical Engineering	1	
		Mathematical Biostatistics	3	
		Advanced Elective Coursework	3	
		Research	2	Semester Total: 9
	<b>Spring</b>	Seminar/Works in Progress in Biomedical Engineering	1	
		BME Exam I (Qualifying Exam)	1	
	<b>Summer</b>	Research	7	Semester Total: 9
		Dissertation Research	6	Semester Total: 6
<b>Third Year</b>	<b>Fall</b>	Seminar/Works in Progress in Biomedical Engineering	1	
		BME Exam II (Dissertation Proposal)	1	
		Dissertation Research	7	Semester Total: 9
	<b>Spring</b>	Seminar/Works in Progress in Biomedical Engineering	1	
		Dissertation Research	8	Semester Total: 9
	<b>Summer</b>	Dissertation Research	6	Semester Total: 6
<b>Fourth Year &amp; Beyond</b>	<b>Fall</b>	Seminar/Works in Progress in Biomedical Engineering	1	
		Dissertation Research	8	Semester Total: 9
	<b>Spring</b>	Seminar/Works in Progress in Biomedical Engineering	1	
		Dissertation Research	8	Semester Total: 9
	<b>Summer</b>	Dissertation Research	6	Semester Total: 6

<b>*Advanced Elective Courses (Partial List)</b>	<b>Credit Hour</b>	<b>Campus</b>	<b>Course #</b>
Mechanisms of Drug Action	3	UTSW	CR 5301
Optical Microscopy	1.5	UTSW	CR 5095
Neural Engineering	3	UTA	BE 5329
Polymers and Biocompatibility	3	UTA	BE 5331
Nano Biomaterials	3	UTA	BE 5333
Biological Materials, Mechanics, & Processes	3	UTA	BE 5335
Transport Phenomena in Biomedical Engineering	3	UTA	BE 5337
Finite Element Applications in Bioengineering	3	UTA	BE 5340
Design and Application of Artificial Organs	3	UTA	BE 5360
Biomaterials and Blood Compatibility	3	UTA	BE 5361
Tissue Engineering Lecture	3	UTA	BE 5364
Tissue Engineering Lab	3	UTA	BE 5365
Biomaterial – Living Systems Interaction	3	UTA	BE 5370
Drug Delivery	3	UTA	BE 5372
Drug Delivery Lab	3	UTA	BE 5373
Engineering Systems: Modeling & Simulation	3	UTD	BMEN 6372
Introduction to Cellular Microscopy	3	UTD	BMEN 6380
Advanced Concepts in Microscopy	3	UTD	BMEN 6381

\*Must be approved by Mentor and Program Chair

For more detailed descriptions and additional listings of courses available, see the UTSW course descriptions webpages or the websites below.

[http://www.utdallas.edu/student/catalog/gradcurrent/ECS/BME/coursedescriptions\\_biomed.htm](http://www.utdallas.edu/student/catalog/gradcurrent/ECS/BME/coursedescriptions_biomed.htm)

<http://catalog.uta.edu/engineering/bio/>