

# BIOMEDICAL ENGINEERING MAJOR

Welcome to the Department of Biomedical Engineering at Tulane University in New Orleans, LA. Since 1977, our department has been a leader in engineering science investigations of health and medicine. As you explore this site, you will see that our curriculum and translational studies are targeted and integrated, spanning areas of biomaterials, biomechanics, device development and tissue engineering. Our team of faculty and staff members brings energy and enthusiasm towards educating future generations of biomedical engineers as we solve today's most complex and interesting basic and applied research problems relevant to healthcare. We welcome the opportunity to develop collaborations at all levels.

Tulane's Biomedical Engineering program is accredited by the Engineering Accreditation Commission of ABET ([www.abet.org](http://www.abet.org)).

## Requirements

### Curriculum

Course	Title	Credit Hours
<b>Year 1</b>		
<b>Fall</b>		
MATH 1210	Calculus I	4
CHEM 1070	General Chemistry I	3
CHEM 1075	General Chemistry Lab I	1
ENGL 1010	Writing	4
PHYS 1310	General Physics I	4
TIDES Tulane Inter. Exp. Sem.		1
Service Learning (1st or 2nd year) <sup>1</sup>		0
	Credit Hours	17
<b>Spring</b>		
MATH 1220	Calculus II	4
CHEM 1080	General Chemistry II	3
CHEM 1085	General Chemistry Lab II	1
CULT Cultural Knowledge Elective		3
PHYS 1320	General Physics II	4
ENGP 1410	Statics	3
	Credit Hours	18
<b>Year 2</b>		
<b>Fall</b>		
MATH 2210	Calculus III	4
CELL 1010	Intro to Cell & Molec Biology	3
CELL 2115	General Biology Lab	1
BMEN 2310	Product & Experimental Design	3
ENGP 2010	Electric Circuits	3
ENGP 2011	Electric Circuits Lab	1
ENGP 2430	Mechanics of Materials	3
	Credit Hours	18
<b>Spring</b>		
MATH 2240	Intro To Applied Math	4
BMEN 2020	Comput Concepts & Applic	4
BMEN 2600	Intro Organic & Biochem	3
BMEN 2730	Biomedical Electronics	4
ENGP 3120	Materials Science and Engineering	3
	Credit Hours	18
<b>Year 3</b>		
<b>Fall</b>		
BMEN 3030	Anatomy & Physio for Engr	3

BMEN 3035	Anat & Phys for Engr Lab	1
BMEN 3440	Biofluid Mechanics	3
BMEN 3xxx:"Domain" class		3
PELECT Professional Elective <sup>2</sup>		3
CULT Cultural Knowledge Elective		3
BMEN 4901	Grand Challenges I (Or BMEN 490x Research & Prof. Practice I)	1-2
Credit Hours		17-18
<b>Spring</b>		
BMEN 3070	Quantitative Physiology	3
BMEN 3075	Quat. Physiology Lab	1
BMEN 3820	Math Analysis Bio Systms	3
BMEN 3xx	"Domain" class	3
BMEN 4900	Art of Professional Eng	1
CULT Cultural Knowledge Elective		3
Credit Hours		14
<b>Year 4</b>		
<b>Fall</b>		
BMEN 4030	BMEN Team Dsgn Project I	2
BMEN 4902	SR Research Prof Experience I	2
BMEN 6710	Departmental Seminar	1
Cultural Knowledge Elective		3
Professional Elective		3
Professional Elective		3
Credit Hours		14
<b>Spring</b>		
BMEN 4040	BMEN Team Dsgn Proj II	3
BMEN 6720	Departmental Seminar	0
Cultural Knowledge Elective		3
Cultural Knowledge Elective		3
Professional Elective		3
Credit Hours		12
Total Credit Hours		128-129

<sup>1</sup> Students are required to take a 1-hour "service learning" course before the end of the Sophomore year.

<sup>2</sup> One Professional Elective must be a BMEN6xxx advanced class, following up on a BMEN3xxx domain class.

### Pre-Med Students

Those students who are declared pre-med are to make the following adjustments to the BME curriculum:

1. Substitute CHEM 2410 Organic Chemistry I (3 c.h.) & CHEM 2415 Organic Chemistry Lab I (1 c.h.) for BMEN 2600 Intro Organic & Biochem (3 c.h.)
2. Count CHEM 2420 Organic Chemistry II (3 c.h.) & CHEM 2425 Organic Chemistry Lab II (1 c.h.) as one Professional Elective
3. Count CELL 4010 Cellular Biochemistry (3 c.h.) as a second Professional Elective
4. Count EBIO 1010 Diversity of Life (3 c.h.) & EBIO 1015 Diversity of Life Lab (1 c.h.) as the third Professional Elective

No additional Professional Electives are required, except the BMEN 6xxx upper level elective. Note that this adjustment will increase the total required credits toward a BME bachelor's degree by 3 credits due to the additional required laboratories

If after you have completed CHEM 2410 Organic Chemistry I (3 c.h.)/ CHEM 2415 Organic Chemistry Lab I (1 c.h.); or if after you have completed CHEM 2410 Organic Chemistry I (3 c.h.)/ CHEM 2415 Organic Chemistry Lab I (1 c.h.) and CHEM 2420 Organic Chemistry II (3 c.h.)/CHEM 2425 Organic Chemistry Lab II (1 c.h.), you decide to not pursue pre-med, you will be required to take either BMEN 2600 Intro Organic & Biochem (3 c.h.) or CELL 4010 Cellular Biochemistry (3 c.h.) as an appropriate substitute. In this case, CHEM 2410 Organic Chemistry I (3 c.h.)/ CHEM 2415 Organic Chemistry Lab I (1 c.h.), and/or CHEM 2420 Organic Chemistry II (3 c.h.)/CHEM 2425 Organic Chemistry Lab II (1 c.h.) will be counted as one and/or two of your required three, non-6xxx level Professional Electives, respectively