

## Biomedical Engineering Course Flowchart (2018-2019)

<b>1<sup>st</sup> Semester (Fall)</b>	<b>ENGI 1100</b> MATH 1431	MATH 1310 <b>BIOL 1361</b>	<b>BIOL 1161</b> BIOL 1361	CHEM Placement Test or MATH 1330 <b>CHEM 1331</b>	<b>CHEM 1111</b> CHEM 1331	<b>ENGL 1303</b>	MATH Placement Test or MATH 1330 <b>MATH 1431</b>
<b>2<sup>nd</sup> Semester (Spring)</b>	MATH 1431 & CHEM 1331 or PHYS 1321 <b>ENGI 1331</b>	MATH 1310 <b>BIOL 1362</b>	<b>BIOL 1162</b> BIOL 1362	MATH 1330, CHEM 1331 <b>CHEM 1332</b>	CHEM 1111 <b>CHEM 1112</b> CHEM 1332	MATH 1431 <b>MATH 1432</b>	<b>PHYS 1321</b> MATH 1432
<b>3<sup>rd</sup> Semester (Fall)</b>	ENGI 1100, ENGI 1331 <b>BIOE 2100</b>	CHEM 1332 <b>CHEM 3331</b>	CHEM 1112 <b>CHEM 3221</b> CHEM 3331	ENGL 1303 <b>ENGL 1304</b>	MATH 1432 <b>MATH 2433</b>	PHYS 1321 <b>PHYS 1322</b> MATH 2433	
<b>4<sup>th</sup> Semester (Spring)</b>	ENGI 1331, PHYS 1322, CHEM 1332, MATH 2433 <b>BIOE 2331</b> MATH 3321	ENGI 1100, ENGI 1331, ENGL 1303, ENGL 1304, MATH 1431, MATH 1432 <b>ECE 2201</b> MATH 2433, MATH 3321, PHYS 1322	CHEM 3331/3221 <b>BCHS 3304</b>	MATH 1432 <b>MATH 3321</b>	<b>Social Science Core</b>	<b>Creative Arts Core</b>	
<b>5<sup>th</sup> Semester (Fall)</b>	PHYS 1321 <b>MECE 3400</b> MATH 3321	ENGI 1100, ENGL 1304 and one of: ECE 2201 or INDE 2333 <b>ENGI 2304</b>		MATH 1432 <b>INDE 2333</b>	<b>HIST 1377</b>	<b>POLS 1336</b>	
<b>6<sup>th</sup> Semester (Spring)</b>	<b>BIOE 3341</b> BIOE 3340	BCHS 3304, BIOL 1361/1161, BIOL 1362/1162, PHYS 1322, ENGI 1331, BIOE 2331, ECE 2201, MATH 3321 <b>BIOE 3340</b>	<b>BIOE 3140</b> BIOE 3340	MATH 1432 <b>BIOE 4302</b> BIOE 3340	<b>BIOE Track Course</b>	<b>HIST 1378</b>	
<b>7<sup>th</sup> Semester (Fall)</b>	ENGI 2304, INDE 2333, MECE 3400, & all req'd BIOE 3000-level courses <b>BIOE 4335</b> BIOE 4315 & 4115	ECE 2201, MATH 2433, MATH 3321, PHYS 1322 <b>BIOE 4315</b> BIOE 4115	<b>BIOE 4115</b> BIOE 4315	<b>BIOE Track Course</b>	<b>BIOE Track Course</b>	<b>POLS 1337</b>	
<b>8<sup>th</sup> Semester (Spring)</b>	BIOE 4335 <b>BIOE 4336</b>	BCHS 3304 <b>BIOE 4350</b> BIOE 3340	<b>BIOE 4150</b> BIOE 4350	<b>BIOE Track Course</b>	<b>BIOE Track Course</b>	<b>Language, Philosophy, &amp; Culture Core</b>	

Pre-Requisite

**Course #**

Co-Requisite

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Track	Course	Prerequisites	Semester Offered
<b>Required by all tracks</b>	BIOE 4302: Numerical Analysis	BIOE 2100, MATH 2433 Co-requisite: BIOE 3340/3140	Spring
	BIOE 4350 & 4150: Genomics & Proteomics with Lab	BCHS 3304 Co-requisite: BIOE 3340/3140	Spring
<b>Bionanoscience</b>	BIOE 4366: Biomolecular Engineering Fundamentals	BIOE 3341 Co-requisite: BIOE 4350/4150	Fall
	BIOE 5341: Advanced Biofluid Dynamics	BIOE 3340, 4302	Spring
	BIOE 4349: Biomedical Microdevices	BIOE 3340/3140	Spring
	BIOE 4303: Biomaterials	BIOE 4302, 3340/3140	Fall
	BIOE 5323: Regenerative Medicine & Stem Cell Engineering	BIOE 3340/3140 & MATH 3321	Fall
	Advances in Vision Research	BIOL 1361/1161, BIOL 1362/1162, BCCHS 3304 Co-requisite: BIOE 3340/3140	Spring
	Drug Delivery and Design	BIOE 3340, 3140	Fall
	Mass Transport for Bio-systems	BIOE 3340, 3140	Fall
	Cell and Molecular Biology for BME	BIOE 3340, 3140	Spring
	Tissue Engineering: Principles & Practice	BIOE 3340, 3140	Spring
<b>Neural, Cognitive, &amp; Rehabilitation Engineering</b>	BIOE 4342: Biomedical Signal Processing	BIOE 4315, 4115, ECE 3337	Spring
	ECE 3337: Signals & Systems Analysis	ECE 1331, ECE 2201, MATH 3321. Pre-requisite: ECE 2202	Fall/Spring
	BIOE 4305: Brain-Machine Interfacing	Co-requisite: BIOE 4315/4115	Fall
	Intro to Neural Computation	BIOE 4305	Spring
	Neural Interfaces	Co-requisite: BIOE 3340/3140	Spring
<b>Biomedical Imaging</b>	BIOE 5320: Intro to Electromagnetic Imaging	BIOE 4302, 3340, PHYS 1322, INDE 2333	Fall
	BIOE 5317: Intro to Biomedical Imaging	BIOE 4302, 3340, INDE 2333	Spring
	BIOE 4307: Intro to Optical Imaging	BIOE 2331, MATH 3321	Fall
<b>Additional Electives</b>	BIOE 3351: Introduction to Diseases	Co-requisite: BIOE 3340/3140	Fall
	BIOE 5318: Bioinformatics	BIOE 3341 or consent of instructor	Fall
	ECE 3355/3155: Electronics	ECE 2202, ECE 2100, ECE 3337, ENGI 2304 Co-requisite: ECE 3155	
	ECE 3456: Analog Electronics	ECE 3155, ECE 3355	