

B.S. Bioengineering - Medical Device Track

Y1	Fall ()	MATH 11 (4) Calculus I	CHEM 11 (5) Chemistry I		CTW 1 (4)	ENGR 1 (2) Intro Engineering	CORE
	Winter ()	MATH 12 (4) Calculus II		PHYS 31 (5) Physics I	CTW 2 (4)		C&I 1 (4)
	Spring ()	MATH 13 (4) Calculus III		PHYS 32 (5) Physics II		BIOE 10 (4) Intro Bioengineering	C&I 2 (4)
Y2	Fall ()	MATH 14 (4) Calculus IV		PHYS 33 (5) Physics III	BIOE 21 (4) Intro Physiology	COEN 45 (5) MATLAB Programming	
	Winter ()		CHEM 12 (5) Chemistry II	ELEN 50 (5) Electric Circuits I	BIOE 22 (5) Intro Cell/Mol Bioeng		CORE
	Spring ()		CHEM 13 (5) Chemistry III		ELEN 21 (5) Intro Logic Design	MECH 10 (5) Graphical Design	CORE
Y3	Fall ()	AMTH 106 (4) Differential Equations	CHEM 31 (5) Organic Chemistry I	BIOE 161 (5) Bioinstrumentation			CORE
	Winter ()		BIOE 155 (4) Biological Transport	BIOE 162 (5) Biosignals	BIOE 174 (5) Microfab & Microfluidics		CORE
	Spring ()	BIOE 120 (4) Experimental Methods		BIOE 154 (4) Intro Biomechanics	BIOE 171 (5) Physiology & Anatomy		ENGL 181 (4) Engineering Comm
Y4	Fall ()	BIOE 194 (2) Senior Design I	BIOE 153 (4) Biomaterials			TE	CORE
	Winter ()	BIOE 195 (2) Senior Design II				TE	CORE
	Spring ()	BIOE 196 (2) Senior Design III				TE	CORE

Bioengineering	Chemistry	Engineering	Math	Physics
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Technical Electives

≥ 15 units (see list on back)

Technical Elective (TE) Requirements

The following minimum number of TE units are required for each track:

Medical-device track - 15 units

BIOE 100, 107, 108, 111, 115, 140, 157, 163, 167, 168, 170, 172, 173, 175, 176, 178, 179, 180, 185, 186, 192, 188/189 (or 198), 199

COEN 123

ELEN 115, 116, 123, 130, 152, 156, 160

MECH 121, 123, 132, 143, 151

PHYS 161

Biomolecular track - 16 units

BIOE 100, 108, 111, 115, 140, 157, 161, 167, 168, 170, 171, 173, 174, 177L, 178, 179, 180, 185, 186, 192, 188/189 (or 198), 199

any course from BIOE 153, 154, 155, 172 if not counted as a required course

BIOL 110, 122, 124, 174, 175, 176, 177, 178, 189

CHEM 111, 141, 142, 143, 151, 152

PHYS 161

Pre-med track - 10 units

BIOE 100, 107, 108, 111, 115, 140, 157, 161/163*, 167, 168, 170, 173, 174, 175, 176, 177L, 178, 179, 180, 185, 186, 192, 188/189 (or 198), 199

any course from BIOE 153, 154, 155 if not counted as a required course

BIOL 104, 110, 122, 174, 175, 176, 177, 178, 189

CHEM 111, 141, 142, 143, 151, 152

PHYS 161

**BIOE 163 is replaceable with BIOE 161 (if both are taken, one may be used to satisfy TE units)*

B.S. Bioengineering - Biomolecular Track

Y1	Fall ()	MATH 11 (4) Calculus I	CHEM 11 (5) Chemistry I	CTW 1 (4)	BIOL 21 (4) Intro Physiology	ENGR 1 (2) Intro Engineering		
	Winter ()	MATH 12 (4) Calculus II	CHEM 12 (5) Chemistry II	CTW 2 (4)			C&I 1 (4)	
	Spring ()	MATH 13 (4) Calculus III	CHEM 13 (5) Chemistry III			BIOE 10 (4) Intro Bioengineering	C&I 2 (4)	
Y2	Fall ()	MATH 14 (4) Calculus IV	CHEM 31 (5) Organic Chemistry I		BIOL 24 (4) Intro Cell/Mol Biology	COEN 45 (5) MATLAB Programming		
	Winter ()		CHEM 32 (5) Organic Chemistry II	PHYS 31 (5) Physics I	BIOL 25 (5) Investigations Cell/Mol Biol		CORE	
	Spring ()	AMTH 106 (4) Differential Equations		PHYS 32 (5) Physics II		ELEN 21 (5) or MECH 10 (5)	CORE	
Y3	Fall ()		BIOE 175 (5) Biomol/Cellular Engineering I	PHYS 33 (5) Physics III	R1		CORE	
	Winter ()		BIOE 176 (4) Biomol/Cellular Engineering II	ELEN 50 (5) Electric Circuits I	R2		CORE	
	Spring ()		BIOE 163 (5) Bio-Device Engineering	BIOE 162 (5) Biosignals		TE	ENGL 181 (4) Engineering Comm	
Y4	Fall ()	BIOE 194 (2) Senior Design I	BIOE 120 (4) Experimental Methods			TE	CORE	
	Winter ()	BIOE 195 (2) Senior Design II				TE	CORE	
	Spring ()	BIOE 196 (2) Senior Design III				CORE	CORE	
		Bioengineering	Biology	Chemistry	Engineering	Math	Physics	
	R1 & R2	BIOE 153 (4) Biomaterials	BIOE 155 (4) Biological Transport	BIOE 172 (4) Intro Tissue Engineering			ELEN 21 (5) Intro Logic Design	
	Technical Electives	≥ 16 units (see list on back)						MECH 10 (5) Graphical Design

Technical Elective (TE) Requirements

The following minimum number of TE units are required for each track:

Medical-device track - 15 units

BIOE 100, 107, 108, 111, 115, 140, 157, 163, 167, 168, 170, 172, 173, 175, 176, 178, 179, 180, 185, 186, 192, 188/189 (or 198), 199

COEN 123

ELEN 115, 116, 123, 130, 152, 156, 160

MECH 121, 123, 132, 143, 151

PHYS 161

Biomolecular track - 16 units

BIOE 100, 108, 111, 115, 140, 157, 161, 167, 168, 170, 171, 173, 174, 177L, 178, 179, 180, 185, 186, 192, 188/189 (or 198), 199

any course from BIOE 153, 154, 155, 172 if not counted as a required course

BIOL 110, 122, 124, 174, 175, 176, 177, 178, 189

CHEM 111, 141, 142, 143, 151, 152

PHYS 161

Pre-med track - 10 units

BIOE 100, 107, 108, 111, 115, 140, 157, 161/163*, 167, 168, 170, 173, 174, 175, 176, 177L, 178, 179, 180, 185, 186, 192, 188/189 (or 198), 199

any course from BIOE 153, 154, 155 if not counted as a required course

BIOL 104, 110, 122, 174, 175, 176, 177, 178, 189

CHEM 111, 141, 142, 143, 151, 152

PHYS 161

**BIOE 163 is replaceable with BIOE 161 (if both are taken, one may be used to satisfy TE units)*

B.S. Bioengineering - Pre-Med Track

Y1	Fall ()	MATH 11 (4) Calculus I	CHEM 11 (5) Chemistry I	CTW 1 (4)	BIOL 21 (4) Intro Physiology	ENGR 1 (2) Intro Engineering		
	Winter ()	MATH 12 (4) Calculus II	CHEM 12 (5) Chemistry II	CTW 2 (4)			C&I 1 (4)	
	Spring ()	MATH 13 (4) Calculus III	CHEM 13 (5) Chemistry III			BIOE 10 (4) Intro Bioengineering	C&I 2 (4)	
Y2	Fall ()	MATH 14 (4) Calculus IV	CHEM 31 (5) Organic Chemistry I		BIOL 24 (4) Intro Cell/Mol Biology	COEN 45 (5) MATLAB Programming		
	Winter ()		CHEM 32 (5) Organic Chemistry II	PHYS 31 (5) Physics I	BIOL 25 (5) Investigations Cell/Mol Biology		CORE	
	Spring ()		CHEM 33 (5) Organic Chemistry III	PHYS 32 (5) Physics II		ELEN 21 (5) or MECH 10 (5)	SOCI 1	
Y3	Fall ()	AMTH 106 (4) Differential Equations		PHYS 33 (5) Physics III	BIOE 172 (4) Intro Tissue Engineering		CORE	
	Winter ()		BIOE 162 (5) Biosignals	ELEN 50 (5) Electric Circuits I	R1		CORE	
	Spring ()	BIOE 120 (4) Experimental Methods	BIOE 163 (5) Bio-Device Engineering		BIOE 171 (5) Physiology & Anatomy		ENGL 181 (4) Engineering Comm	
Y4	Fall ()	BIOE 194 (2) Senior Design I	CHEM 141 (5) Biochemistry I		R2	CORE	CORE	
	Winter ()	BIOE 195 (2) Senior Design II					CORE	
	Spring ()	BIOE 196 (2) Senior Design III			TE		CORE	
		Bioengineering	Biology	Chemistry	Engineering	Math	Physics	
	R1 & R2	BIOE 153 (4) Biomaterials	BIOE 154 (4) Intro Biomechanics	BIOE 155 (4) Biological Transport			ELEN 21 (5) Intro Logic Design	
	Technical Electives	≥ 10 units (see list on back) - Choose CHEM 141 and others from the list						MECH 10 (5) Graphical Design

Technical Elective (TE) Requirements

The following minimum number of TE units are required for each track:

Medical-device track - 15 units

BIOE 100, 107, 108, 111, 115, 140, 157, 163, 167, 168, 170, 172, 173, 175, 176, 178, 179, 180, 185, 186, 192, 188/189 (or 198), 199

COEN 123

ELEN 115, 116, 123, 130, 152, 156, 160

MECH 121, 123, 132, 143, 151

PHYS 161

Biomolecular track - 16 units

BIOE 100, 108, 111, 115, 140, 157, 161, 167, 168, 170, 171, 173, 174, 177L, 178, 179, 180, 185, 186, 192, 188/189 (or 198), 199

any course from BIOE 153, 154, 155, 172 if not counted as a required course

BIOL 110, 122, 124, 174, 175, 176, 177, 178, 189

CHEM 111, 141, 142, 143, 151, 152

PHYS 161

Pre-med track - 10 units

BIOE 100, 107, 108, 111, 115, 140, 157, 161/163*, 167, 168, 170, 173, 174, 175, 176, 177L, 178, 179, 180, 185, 186, 192, 188/189 (or 198), 199

any course from BIOE 153, 154, 155 if not counted as a required course

BIOL 104, 110, 122, 174, 175, 176, 177, 178, 189

CHEM 111, 141, 142, 143, 151, 152

PHYS 161

**BIOE 163 is replaceable with BIOE 161 (if both are taken, one may be used to satisfy TE units)*