

Degree of Bachelor of Science in Bioengineering (Medical Device Track)

Effective Fall 2015

FIRST YEAR

FALL	WINTER	SPRING
MATH 11 - CALC I	MATH 12 - CALC II	MATH 13 - CALC III
CHEM 11 - Chem I (5)	PHYS 31 - Phys I (5)	PHYS 32 - Phys II (5)
ENGR 1 - Intro Engr. (2)		BIOE 10 - Intro BioEng.
CORE	C& I 1	C& I 2
CTW 1	CTW 2	

SOPHOMORE

FALL	WINTER	SPRING
MATH 14 - CALC IV	CHEM 12 - Chem II (5)	CHEM 13 - Chem III (5)
PHYS 33 - Phys III (5)	ELEN 50 - Electr. Circuits I (5)	ELEN 21 - Logic Design (5)
BIOE 21 - Intro Physiology	BIOE 22 - Cell & Mol BioEng (5)	MECH 10 - Graph. Design (5)
COEN 45 (or 44) - Program. (5)	CORE	CORE

JUNIOR

FALL	WINTER	SPRING
CHEM 31 - Org Chem I (5)	BIOE 155 - Bio.Transport.Phenom	BIOE 120 - Exptl. Methods
AMTH 106 - Diff. Equation	BIOE 162 - BioSignals (5)	BIOE 154 - Biomechanics
BIOE 161 - BioInstrument (5)	BIOE 174 - Microfluidics (5)	BIOE 171 - Physio & Anat. (5)
CORE	CORE	CORE

SENIOR

FALL	WINTER	SPRING
BIOE 153 - Biomaterial	TE	TE
BIOE 194 - Senior Design (2)	BIOE 195 - Senior Design (2)	BIOE 196 - Senior Design (2)
TE	CORE	CORE
ENGL 181 (2)	ENGL 182 A (1)	ENGL 182 B (1)

TE: Technical elective; total should be a minimum of 15 units. Choose from the list.

Note: BIOE 180 (TE), Phil 7 (ethics), Phil 111 (ethics), ENGR 19 (ethics), TESP 157 (RTC3), or BIOL 171(RTC3) fulfills the bioethics requirement

Degree of Bachelor of Science in Bioengineering (Biomolecular Track)

Effective Fall 2015

FIRST YEAR

FALL	WINTER	SPRING
MATH 11 - CALC I	MATH 12 - CALC II	MATH 13 - CALC III
CHEM 11 - Chem I (5)	CHEM 12 - Chem II (5)	CHEM 13 - Chem III (5)
BIOL 21 - Intro Physiology		BIOE 10 - Intro BioEng.
ENGR 1 - Intro Engr. (2)	C& I 1	C& I 2
CTW 1	CTW 2	

SOPHOMORE

FALL	WINTER	SPRING
MATH 14 - CALC IV	PHYS 31 - Phys I (5)	PHYS 32 - Phys II (5)
CHEM 31 - Org Chem I (5)	CHEM 32 - Org Chem II (5)	MECH 10 - Graph. Design (5) or ELEN 21 - Logic Design (5)
BIOL 24 - Cell & Mol Bio.	BIOL 25 - Cell & Mol Bio (5)	AMTH 106 - Diff. Equation
COEN 45 - Program. (5)	CORE	CORE

JUNIOR

FALL	WINTER	SPRING
PHYS 33 - Phys III (5)	ELEN 50 - Electr. Circuits I (5)	BIOE 163 - Bio-device Eng. (5)
*R1	BIOE 176 - Biomol. Eng. II	BIOE 162 - Biosignals (5)
BIOE 175 - Biomol. Eng. I (5)	*R2	TE
CORE	CORE	CORE

SENIOR

FALL	WINTER	SPRING
BIOE 120 – Exptl. Methods	CORE	CORE
BIOE 194 - Senior Design (2)	BIOE 195 - Senior Design (2)	BIOE 196 - Senior Design (2)
TE	TE	CORE
ENGL 181 (2)	ENGL 182A (1)	ENGL 182B (1)

*Choose from **BIOE 153** (Biomaterial Science; Fall), **BIOE 155** (Bio. Transport. Phenomenon; Winter), and **BIOE 172** (Tissue Engineering I; Fall or Winter)

TE: Technical elective; total should be a minimum of 16 units. Choose from the list.

Note: BIOE 180 (TE), Phil 7 (ethics), Phil 111 (ethics), ENGR 19 (ethics), TESP 157 (RTC3), or BIOL 171(RTC3) fulfills the bioethics requirement

Degree of Bachelor of Science in Bioengineering (Pre---med Track)

Effective Fall 2015

FIRST YEAR

FALL	WINTER	SPRING
MATH 11 - CALC I	MATH 12 - CALC II	MATH 13 - CALC III
CHEM 11 - Chem I (5)	CHEM 12 - Chem II (5)	CHEM 13 - Chem III (5)
BIOL 21 - Intro Physiology		BIOE 10 - Intro BioEng.
ENGR 1 - Intro Engr. (2)	C& I 1	C& I 2
CTW 1	CTW 2	

SOPHOMORE

FALL	WINTER	SPRING
MATH 14 - CALC IV	PHYS 31 - Phys I (5)	PHYS 32 - Phys II (5)
CHEM 31 - Org Chem I (5)	CHEM 32 - Org Chem II (5)	CHEM 33 - Org Chem II (5)
BIOL 24 - Cell & Mol Bio.	BIOL 25 - Cell & Mol Bio (5)	MECH 10 - Graph. Design or ELEN 21 - Logic Design (5)
COEN 45 - Program. (5)	CORE	CORE (Sociology 1 - apply to med. school ~June 1)

JUNIOR

FALL	WINTER	SPRING
PHYS 33 - Phys III L/L (5)	ELEN 50 - Electr. Circuits I (5)	† BIOE 163 - Bio-device Eng. (5)
AMTH 106 - Diff. Equation	BIOE 162 - Biosignals (5)	BIOE 120 - Exptl. Methods
BIOE 172 - Tissue Eng. I	*R1	BIOE 171 - Physio & Anat. (5)
CORE	CORE	CORE

SENIOR

FALL	WINTER	SPRING
*R2	CORE	TE
BIOE 194 - Senior Design (2)	BIOE 195 - Senior Design (2)	BIOE 196 - Senior Design (2)
TE (CHEM 141)	CORE	CORE
		Sociology 132 - apply to med. school ~June 1
ENGL 181 (2)	ENGL 182A (1)	ENGL 182B (1)

*Choose from **BIOE 153** (Biomaterial Science; Fall), **BIOE 154** (Intro Biomechanics; Spring) and **BIOE 155** (Bio. Transport. Phenomenon; Winter)

† **BIOE 163** (Bio-device Eng.) is replaceable with **BIOE 161** (Bioinstrumentation; offered in the Fall)

TE: Technical elective; total should be a minimum of 10 units. Choose CHEM 141 and others from the list.

Note: BIOE 180 (TE), Phil 7 (ethics), Phil 111 (ethics), ENGR 19 (ethics), TESP 157 (RTC3), or BIOL 171(RTC3) fulfills the bioethics requirement

Technical Elective (TE) Requirements:

- A minimum number of TE units are required for each track. Specifically, *Medical-device track: 15 units; Biomolecular track: 16 units; Pre-med track: 10 units*

Recommended Technical Electives for Medical -device Track:

- BIOE 100, 107, 108, 111, 115, 130, 140, 157, 163, 167, 168, 172, 173, 175, 176, 179, 180, 185, 186, 192, 188/189 (or 198), 199; COEN 123; ELEN 115, 116, 130, 152, 156, 160; MECH 121, 123, 132, 151; PHYS 161

Recommended Technical Electives for Biomolecular Track

- BIOE 100, 108, 111, 115, 140, 154, 157, 161, 168, 171, 173, 174, 177L, 179, 180, 185, 186, 192, 188/189 (or 198), 199, one course from BIOE 153, 155, 172 that is 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

Recommended Technical Electives for Pre-med Track:

- BIOE 100, 107, 108, 111, 115, 140, 157, 163 (or 161), 167, 168, 173, 174, 175, 176, 179, 180, 185, 186, 192, 188/189 (or 198), 199; one course from BIOE 153, 154, 155 that is 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