

Biological Engineering Track for Chemical Engineering Curriculum

Freshman Year/Fall Semester		Cr.	Freshman Year/Spring Semester		Cr.
___ 25.107	Intro to Engineering I	2	___ 25.108	Intro to Engineering II	2
___ 42.101	(Gen. Ed.) College Writing I ⁺	3	___ 42.102	(Gen. Ed.) College Writing II ⁺	3
___ 84.121	Chemistry I ⁺	3	___ 84.122	Chemistry II ⁺	3
___ 84.123	Chemistry I Lab	1	___ 84.124	Chemistry II Lab	1
___ 92.131	Calculus I * ⁺	4	___ 92.132	Calculus II ⁺	4
___ 81.111	Principles of Biology I	<u>3</u>	___ 95.141	Physics I ⁺	3
		16	___ 96.141	Physics I Lab ⁺	<u>1</u>
					17

Sophomore Year/Fall Semester		Cr.	Sophomore Year/Spring Semester		Cr.
___ 10.201	Material Balances	3	___ 10.202	Energy Balances & Intro to Thermodynamics	3
___ 10.205	Fundam. of Electricity	3	___ 84.205	Organic Chemistry Lab	1
___ 84.221	Organic Chemistry I ¹⁺	3	___ 84.222	Organic Chemistry II ¹⁺	3
___ 92.231	Calculus III ⁺	4	___ 92.234/236	Differential Equations ⁺	3
___ 81.201	General Microbiology	3	___ 92.385	Applied Statistics	3
___ 81.203	General Microbiology Lab	<u>2</u>	___ 49.201/202	(Gen. Ed.) SS Economics I/II	<u>3</u>
		18			16

Junior Year/Fall Semester		Cr.	Junior Year/Spring Semester		Cr.
___ 10.303	Fluid Mechanics	3	___ 10.304	Heat Transfer	3
___ 10.311	Chem. Eng. Thermodynamics	3	___ 10.310	Separation Proc. w/ Mass Transfer	3
___ 10.315	Unit Operations Lab I	2	___ 10.308	Intro to Material. Sci. & Eng.	3
___ 10.317	Appl. Eng. Prob. Solving/Matlab	3	___ 10.316	Unit Operations Lab II	2
___ 81.419	Biochemistry or	<u>3</u>	___ 84.347	Physical Chemistry Lab	1
84.550	Biochemistry I	17	___ 45.203/334	(Gen. Ed.) AH Ethics/Eng. Ethics	3
___ 84.344	Physical Chemistry I ²		___ . . .	(Gen. Ed.) SS (Social Science)	<u>3</u>
					18

Senior Year/Fall Semester		Cr.	Senior Year/Spring Semester		Cr.
___ 10.403	Chemical Reaction Engineering	3	___ 10.410	Plant Design	3
___ 10.409	Engineering Economics	3	___ 10.545	Isolation & Purification	3
___ 10.413	Process Dynamics & Control	3	___ . . .	Technical Elective ³	3
___ 10.415	Processes & Controls Lab	2	___ . . .	(Gen. Ed.) SS (Social Science)	3
___ 10.535	Cell & Microbe Cultivation	3	___ . . .	(Gen. Ed.) AH (Arts/Humanities)	<u>3</u>
___ . . .	(Gen. Ed.) AH (Arts/Humanities)	<u>3</u>			15
		17			

Total minimum credits: 134

See reverse side for additional information.

Refer to the *Schedule of Classes* booklet for General Education requirements. The University General Education requirements must be satisfied. A General Education course that fulfills the Diversity requirement must be taken.

⁽¹⁾ The listed co-requisites, 84.229 or 84.230, Organic Chemistry Lab, is not required for Chemical Engineering majors. 84.205 is the required lab.

⁽²⁾ The listed co-requisite, 84.346, Physical Chemistry Lab, is not required for Chemical Engineering majors. 84.347 is the required lab.

*Calculus I A, and calculus I B instead of Calculus I, will be required for students that do not pass the Calculus Readiness Test.

⁺ Honors level courses may be taken instead.

³**Technical Electives:**

Select One:

10.555 Biopharmaceutical Regulatory Compliance

10.586 Bioprocessing Projects Laboratory

81.252 Physiology

81.476/576 Cell Culture

92.593 Experimental Design