

Example Program 4

Chemical and Biomolecular Engineering Degree - General Program

Students entering Fall 2022 or Later with 12-Credits of Advanced Placement in Chemistry and Math

Freshman Year / Fall

030.103	Applied Chemical Equilibrium and Reactivity	4
~~~~~	Differential Equations with Applications (110.302) or Linear Algebra and Differential Equations (553.291)	4
171.101	General Physics I	4
173.111	General Physics Lab I	1
<del>540.101</del>	ChemBE Today *(Waived for AY 22-23)	1
~~~~~	H/S Elective	3
~~~~~	Optional HEART course or First-Year Seminar	1
<b>Total</b>		<b>16-17</b>

### Sophomore Year / Fall

540.203	Engineering Thermodynamics	3
500.113	Gateway Computing	3
030.205	Organic Chemistry	4
~~~~~	H/S Elective	3
~~~~~	Undesignated Elective	3
<b>Total</b>		<b>16</b>

### Junior Year / Fall

540.304	Transport II	4
~~~~~	Engineering Elective	3
540.490	Introduction to Chemical Process Safety	1
~~~~~	Biochem or Phys Chem or Orgo Laboratory *	1 or 3
~~~~~	Undesignated Electives	3
Total		12-14

Senior Year / Fall

540.311/313	Projects in ChemBE Unit Operations with Experiments	4
540.409	Dynamic Modeling and Control	4
~~~~~	Engineering Elective	3
~~~~~	H/S Elective 300 level	3
~~~~~	Undesignated Electives	3
<b>Total</b>		<b>17</b>

* Students with no track can choose one of the four labs: 030.225 Introductory Organic Chemistry Lab, 030.305 Physical Chemistry Instrumentation Lab I, 020.315 Biochemistry Project Lab, or 250.253 Protein Engineering and Biochemistry Lab.

### Freshman Year / Spring

540.202	Intro to Chemical & Biological Process Analysis	4
110.202	Calculus III	4
171.102	General Physics II	4
~~~~~	H/S Elective	3
Total		15

Sophomore Year / Spring

540.303	Transport I	3
020.305	Biochemistry	3
~~~~~	H/S Elective	3
~~~~~	Undesignated Elective	3
Total		12

Junior Year / Spring

540.301	Kinetic Processes	4
540.306	Chemical and Biological Separations	4
661.315	Culture of the Engineering Profession	3
~~~~~	Chem/Bio Elective	3
<b>Total</b>		<b>14</b>

### Senior Year / Spring

540.314	Chemical and Biomolecular Product Design **	3
540.315	ChemBE Process Design Using ASPEN	2
~~~~~	Engineering Elective	3
~~~~~	Undesignated Electives	6
<b>Total</b>		<b>14</b>

**116-119**

### AP credits

Chemistry	4
Math BC	8

** Students may take the 3-credit Product Design course 540.314, the 6-credit Product Design sequence of 540.309 and 540.310, or the 6-credit Multidisciplinary Engineering Design sequence of 660.345 and 660.346.