

# Example Program 2

## Chemical and Biomolecular Engineering Degree - MCB Track

Students entering Fall 2022 with no Advanced Placement credits

### Freshman Year / Fall

030.101	Intro to Chemistry I	3
030.105	Intro to Chemistry I Lab	1
110.108	Calculus I	4
171.101	General Physics I	4
173.111	General Physics Lab I	1
540.101	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>

### Freshman Year / Spring

030.102	Intro to Chemistry II	3
030.106	Intro to Chemistry II Lab	1
110.109	Calculus II	4
171.102	General Physics II	4
~~~~~	H/S Elective	3
<b>Total</b>		<b>15</b>

### Sophomore Year / Fall

540.202	Intro to Chemical & Biological Process Analysis	4
~~~~~	Differential Equations with Applications (110.302) or Linear Algebra and Differential Equations (553.291)	4
500.113	Gateway Computing	3
030.205	Organic Chemistry	4
<b>Total</b>		<b>15</b>

### Sophomore Year / Spring

540.203	Engineering Thermodynamics	3
540.303	Transport I	3
110.202	Calculus III	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
~~~~~	Biochemistry Laboratory *	1 or 3
020.305	Biochemistry	3
~~~~~	Undesignated Elective	3
<b>Total</b>		<b>15-17</b>

### Junior Year / Spring

540.301	Kinetic Processes	4
540.306	Chemical and Biological Separations	4
661.315	Culture of the Engineering Profession	3
540.307	Cell Biology for Engineers	3
~~~~~	Undesignated Elective	3
<b>Total</b>		<b>17</b>

### Senior Year / Fall

540.313	Projects in ChemBE Unit Operations with Experiments	4
540.409	Dynamic Modeling and Control	4
~~~~~	Bioengineering Elective	3
~~~~~	H/S Elective	3
~~~~~	Undesignated Electives	3
<b>Total</b>		<b>17</b>

### Senior Year / Spring

540.314	Chemical and Biomolecular Product Design **	3
540.315	ChemBE Process Design Using ASPEN	2
~~~~~	Bioengineering Elective	3
~~~~~	H/S Elective 300 level	3
~~~~~	Undesignated Electives	6
<b>Total</b>		<b>17</b>

**128-131**

\* Students with this track can choose one of the two labs: 020.315 Biochemistry Project Lab, or 250.253 Protein Engineering and Biochemistry Lab.

\*\* 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.