

## Recommended Curriculum

**First Year – First Semester**

CHE 111	Introduction to Chemical Engineering I	2
CHY 121	Introduction to Chemistry	3
CHY 123	Introduction to Chemistry Laboratory	1
MAT 126	Calculus I	4
PHY 121	Physics for Engineers and Physical Scientists I	4
	Human Values & Social Context Elective <sup>1</sup>	3
		<b>17</b>

**Second Year – First Semester**

CHE 200	Fundamentals of Process Engineering	4
CHY 251	Organic Chemistry I	3
CHY 253	Organic Chemistry Laboratory I	2
MAT 228	Calculus III	4
	Human Values & Social Context Elective <sup>1</sup>	3
		<b>16</b>

**Third Year – First Semester**

CHE 352	Process Control	3
CHE 360	Elements of Chemical Engineering I	4
CHE 386	Chemical Engineering Thermodynamics II	3
MEE 252	Statics and Strength of Materials	3
	Approved Advanced Chemistry Elective <sup>3</sup>	3
		<b>16</b>

**Fourth Year – First Semester**

CHE 363	Chemical Engineering Laboratory II	3
CHE 477	Elements of Chemical Engineering Design	3
CHE 478	Analysis, Simulation and Synthesis of Chemical Processes	3
CHE 493	Chemical Engineering Seminar	0
	Approved Technical Elective II <sup>3</sup>	3
	Human Values & Social Context Elective <sup>1</sup>	3
		<b>15</b>

**First Year – Second Semester**

CHE 112	Introduction to Chemical Engineering II	2
CHY 122	The Molecular Basis of Chemical Change	3
CHY 124	The Molecular Basis of Chemical Change Laboratory	1
MAT 127	Calculus II	4
PHY 122	Physics for Engineers and Physical Scientists II	4
ENG 101	College Composition	3
		<b>17</b>

**Second Year – Second Semester**

CHE 385	Chemical Engineering Thermodynamics I	3
CHE 350	Statistical Process Control and Analysis	3
CHY 252	Organic Chemistry II	3
MAT 258	Introduction to Differential Equations with Linear Algebra	4
ECE 209	Fundamentals of Electric Circuits <sup>2</sup> <i>or</i>	3
PPA 264	Introduction to Pulp and Paper Industry	3
	Human Values & Social Context Elective <sup>1</sup>	3
		<b>19</b>

**Third Year – Second Semester**

CHE 361	Chemical Engineering Laboratory I	3
CHE 362	Elements of Chemical Engineering II	4
CHE 368	Kinetics and Reactor Design	3
CHY 472	Physical Chemistry II	3
	Approved Technical Elective I <sup>3</sup>	3
		<b>16</b>

**Fourth Year – Second Semester**

CHE 479	Chemical Engineering Design Projects	4
CHE 493	Chemical Engineering Seminar	1
	Approved Technical Elective III <sup>3</sup>	3
	Human Values & Social Context Elective <sup>1</sup>	3
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		<b>14</b>

**Total Credits Required for Graduation = 130**

<sup>1</sup> The **Human Values & Social Context Electives (18 credits)** must be selected to meet the University of Maine General Education requirements. These should be selected from a list of approved courses to satisfy each of the five sub-categories: western cultural tradition, social context and institutions, cultural diversity and international perspectives, population and the environment, and artistic and creative expression. Some courses cover more than one sub-category.

<sup>2</sup> Students who are cooping in pulp and paper related industry should take **PPA 264** as a technical elective in place of **ECE 209** in the fourth term of the program. They should take **ECE 209** in place of one of the technical electives later in the program.

<sup>3</sup> The **Advanced Chemistry Elective (3 credits)** should be an upper level (300 level or higher) chemistry course or chemical engineering or biochemistry course with significant chemistry content. The **Technical Electives (9 credits)** should be upper level (300 level or higher) engineering, mathematics or science courses. A list of approved courses is available at the Department Office or at <http://www.umche.maine.edu/chb>.

**Ethics**

The course sequence CHE 111, CHE 477, CHE 479 and CHE 493 satisfies the University of Maine General Education requirements for ethics. Transfer students who do not complete the sequence of courses should make sure that they satisfy the ethics requirement through their choice of Human Values and Social Context electives.