

Recommended Curriculum

First Year – First Semester			First Year – Second Semester		
CHB 111	Introduction to Chemical Engineering and Bioengineering I	2	CHB 112	Introduction to Chemical Engineering and Bioengineering II	2
CHY 121	Introduction to Chemistry	3	CHY 122	The Molecular Basis of Chemical Change	3
CHY 123	Introduction to Chemistry Laboratory	1	CHY 124	The Molecular Basis of Chemical Change Laboratory	1
MAT 126	Calculus I	4	MAT 127	Calculus II	4
PHY 121	Physics for Engineers and Physical Scientists I	4	PHY 122	Physics for Engineers and Physical Scientists II	4
	Human Values & Social Context Elective ¹	3	ENG 101	College Composition	3
		17			17
Second Year – First Semester			Second Year – Second Semester		
CHE 200	Fundamentals of Process Engineering	4	CHE 385	Chemical Engineering Thermodynamics I	3
CHY 251	Organic Chemistry I	3	CHB 350	Statistical Process Control and Analysis	3
CHY 253	Organic Chemistry Laboratory I	2	CHY 252	Organic Chemistry II	3
MAT 228	Calculus III	4	MAT 258	Introduction to Differential Equations with Linear Algebra	4
	Human Values & Social Context Elective ¹	3	ECE 209	Fundamentals of Electric Circuits ² <i>or</i>	3
		16	PPA 264	Introduction to Pulp and Paper Industry	3
				Human Values & Social Context Elective ¹	3
					19
Third Year – First Semester			Third Year – Second Semester		
CHE 352	Process Control	3	CHB 361	Chemical Eng. and Bioeng. Laboratory I	3
CHE 360	Elements of Chemical Engineering I	4	CHE 362	Elements of Chemical Engineering II	4
CHE 386	Chemical Engineering Thermodynamics II	3	CHE 368	Kinetics and Reactor Design	3
MEE 252	Statics and Strength of Materials	3	CHY 472	Physical Chemistry II	3
	Approved Advanced Chemistry Elective ³	3		Approved Technical Elective I ³	3
		16			16
Fourth Year – First Semester			Fourth Year – Second Semester		
CHB 363	Chemical Eng. and Bioeng. Laboratory II	3	CHB 479	Chemical Engineering and Bioengineering Design Projects	4
CHB 477	Elements of Chemical Engineering and Bioengineering Design	3	CHB 493	Chemical Eng. and Bioeng. Seminar	1
CHE 478	Analysis, Simulation and Synthesis of Chemical Processes	3		Approved Technical Elective III ³	3
CHB 493	Chemical Eng. and Bioeng. Seminar	0		Human Values & Social Context Elective ¹	3
	Approved Technical Elective II ³	3		Human Values & Social Context Elective ¹	3
	Human Values & Social Context Elective ¹	3			14
		15			

Total Credits Required for Graduation = 130

¹ 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.

² 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.

³ 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 CHB 111, CHB 477, CHB 479 and CHB 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.