

Technical Elective Courses B.S. in Chemical Engineering 2015-16 Academic Year

Technical electives must total to 13 credits. Additional credits may be used towards free electives.

Note that many of the courses listed below are not offered every semester or every year and most have prerequisites. It is best to plan out your technical electives ahead of time.

3-4 credits of Organic Chemistry II or substitute

CH 2420	Organic Chemistry II	3
BL 2100	Principles of Biochemistry	3
CM 4740	Hydrometallurgy/Pyrometallurgy	4

4-6 credits of Core Engineering Electives

CM 2200	Intro Minerals and Materials	3	CM 5200	Advanced CM Thermodynamics	3
CM 3450	Computer-Aided Problem Solving	3	CM 5300	Advanced Transport Phenomena	3
CM 3820	Sampling Stats and Instrumentation	3	CM 5400	Advanced Reactive Systems Analysis	3
CM/ENT 3974	Fuel Cell Fundamentals	1	EE 3010	Circuits and Instrumentation	3
CM 4125	Bioprocess Engineering Laboratory	1	ENG 2120	Statics-Strength of Materials	4
CM 4500	Particle Technology	4	GE 4610	Formation Eval and Petroleum Engg	3
CM 4550	Industrial Chemical Production	3	MEEM 2110	Statics	3
CM 4650	Polymer Rheology	3			
CM 4655	Polymer Rheology Laboratory	1	Undergraduate Research Courses (repeatable)		
CM 4710	Biochemical Processes	3	No more than 6 credits from the following:		
CM/MY 4740	Hydrometallurgy/Pyrometallurgy	4	CM 4000	Chemical Engineering Research	1-3
CM 4770	Analytical Microdevice Technologies	3	CM 4020	UG Research in Mineral Proc Engg	1-3
CM 4780	Biomanufacturing and Biosafety	3	CM 4040	UG Research in Biological Engg	1-3
CM 5100	Applied Mathematics for CM	3	CM 4060	UG Research in Polymer Engg	1-3

3-6 credits of additional Technical Electives

BE 2110	Statistical Methods for Biomed Eng	3	CH 4120	Pharm Chem: Drug Design	3
BE 2400	Cellular and Molecular Biology	3	CH 4212	Instrumental Analysis	5
BE 4300	Polymeric Biomaterials	3	CH 4222	Bioanalytical Chemistry	5
BL 1040	Principles of Biology	4	CH 4310	Inorganic Chemistry I	3
BL 2010	Anatomy & Physiology I	3	CH 4311	Inorganic Chemistry Lab	2
BL 2011	Anatomy & Physiology I Lab	1	CH 4320	Inorganic Chemistry II	3
BL 2020	Anatomy & Physiology II	3	CH 4412	Spectroscopy of Organic Chem.	3
BL 2021	Anatomy & Physiology II Lab	1	CH 4430	Intermediate Organic Chemistry	3
BL 2100	Principles of Biochemistry	3	CH 4510	Intermediate Physical Chemistry	3
BL 2200	Genetics	3	CH 4710	Biomolecular Chemistry I	3
BL 2210	Genetics Laboratory	1	CH 4720	Biomolecular Chemistry II	3
BL 3210	General Microbiology	4	CM 2200	Intro Minerals and Materials	3
BL 3310	Environmental Microbiology	3	CM 3450	Computer-Aided Problem Solving	3
BL 3640	General Immunology	3	CM 3820	Sampling Stats and Instrumentation	3
BL 4010	Biochemistry I	3	CM/ENT 3974	Fuel Cell Fundamentals	1
BL 4020	Biochemistry II	3	CM 4125	Bioprocess Engineering Laboratory	1
BL 4030	Molecular Biology	3	CM 4500	Particle Technology	4
BL 4220	Applied and Industrial Microbiology	3	CM 4550	Industrial Chemical Production	3
BL 4380	Cardiopulmonary Physiology	3	CM/CH 4610	Introduction to Polymer Science	3
BL 4820	Biochem Lab Techniques I	2	CM/CH 4620	Polymer Chemistry	3
BL 4840	Molecular Biology Techniques	3	CM/CH 4631	Polymer Science Laboratory	2
CH 2212	Quantitative Analysis	5	CM 4650	Polymer Rheology	3
CH 2420	Organic Chemistry II	3	CM 4655	Polymer Rheology Laboratory	1
CH 2421	Organic Chemistry Lab II	2	CM 4710	Biochemical Processes	3
CH 3520	Physical Chemistry II – Mol Structure	3	CM/MY 4740	Hydrometallurgy/Pyrometallurgy	4
CH 3521	Physical Chemistry Lab II	2	CM 4770	Analytical Microdevice Technologies	3
CH 4110	Pharm Chem: Drug Action	3	CM 4780	Biomanufacturing and Biosafety	3

