Advanced Science Elective List

The original intent of the Advanced Chemistry requirement from ABET was to provide students with training at an advanced level in the sciences fundamental to the discipline of chemical engineering. "Advanced" can be logically construed to mean a course requiring introductory science (chemistry or physics) as a prerequisite. While we are no longer forced to follow strict dictates from ABET, the logic ABET used to develop this requirement fits well with our current curriculum. Based on this definition, the following courses are approved to for use towards the Advanced Science requirement.

Course	Hours	Prerequisites
BIOL 150 (Intro to Biology)	3	CHEM 130/150/170 (co-req)
C&PE 327 (Reservoir Engineering I)**	1	CHEM 135/175
C&PE 657 (Polymers)**	3	Senior Standing in Chem E
C&PE 715 (Solids characterization)	3	Senior Standing in ChemE
C&PE 765/CE 715 (Corrosion Eng.)**	3	Chem 135/150/175
CE 570 (Chem. Prin. of Env. Eng)**	3	CE 477 (which req CHEM 135/175)
CE 573 (Biol. Prin. Of Env. Eng)**	3	CE 477 (which req CHEM 135/175)
CHEM 335/336 (Organic II)	3+2	CHEM 330/331
CHEM 400/401 (Analytical)	3+2	CHEM 330/331
CHEM 660/661 (Inorganic)	3+2	CHEM 530 (Physical Chem I)
GEOL 101/103 (Intro to Geology)	3+2	None*
ME 306 (Science of Materials)**	3	CHEM 130/150/170
PHSX 313/316 (General Physics III)	3+1	PHSX 212, PHSX 236
PHSX 521 (Mechanics)	3	PHSX 211, PHSX 216
PHSX 531 (Elec. And Mag)	3	PHSX 212 and PHSX 236

*Geology has no introductory course which requires chemistry or physics as a prerequisite. Geology 101 is the highest-level introductory course offered by the department.

** Engineering courses listed may be used as either engineering electives or advanced science electives or the hours may be split between the two categories. It is not acceptable to use the same hours to satisfy both requirements.

Other courses could be accepted by petition, but only if those courses require chemistry or physics as a prerequisite. Research in engineering or another science department could be accepted by petition, with a written final report and a letter from the supervisor attesting to the advanced science content. All petitions will be evaluated by the Academic Standards Committee. Higher-level science courses (biology, chemistry, physics, and geology) that have an approved course listed as a prerequisite are acceptable and would not require a petition. Honors versions of any of the above courses would always be acceptable without a petition.

Updated as of June 2019