

**Bachelor of Science in Chemistry
Concentration in Engineering
Program Requirements Check-List Additions/Modifications
2018 bulletin**

B.S. in Chemistry..... with Engineering Concentration

Follow the Checklist for a B.S. in Chemistry with the following additions/changes:

1. B.S. IN CHEMISTRY MAJOR REQUIREMENTS¹

_ same courses as B.S.

_ these two 500 Level Chemistry Electives	(hr)	Semester	Grade	
CHEM A511 (Advanced Inorganic Chemistry and Lab)	(4)	_____	_____	(must be C or higher)
CHEM A522 (Instrumental Analysis and Lab)	(5)	_____	_____	(must be C or higher)

2. GENERAL EDUCATIONAL REQUIREMENTS

_ same courses as B.S.

_ changes to Natural Sciences	(hr)	Semester	Grade	
PHYS A211 (Calc Physics I)	(4)	_____	_____	
PHYS A212 (Calc Physics II)	(4)	_____	_____	
BIOL A121 (Biology I) ²	(4)	_____	_____	
_ changes to Mathematics ⁷				Test Out
MATH A108 (Algebra) ³	(3)	_____	_____	(must be C or higher)
MATH A111 (Pre-Calc I) ³	(3)	_____	_____	(must be C or higher)
MATH A112 (Pre-Calc II) ³	(3)	_____	_____	(must be C or higher)
MATH A141 (Calculus I) ³	(4)	_____	_____	(must be C or higher)
MATH A142 (Calculus II) ³	(4)	_____	_____	(must be C or higher)
MATH A241 (Calculus III) ³	(4)	_____	_____	(must be C or higher)

3. COGNATE

_ <u>Required Cognate</u> BIOL 541 Princp. Biochem. ²	(hr)	Semester	Grade	
	(4)	_____	_____	(must be C or higher)

AND one of the following options

_ Option 1: Materials Science and Processes	(hr)	Semester	Grade	
ENCP A200 (Statics)	(3)	_____	_____	(must be C or higher)
ENCP A260 (Intro Mechanics of Solids)	(3)	_____	_____	(must be C or higher)
ENCP A371 (Engineering Materials)	(3)	_____	_____	(must be C or higher)
ENCP A377 (Manufacturing Processes)	(3)	_____	_____	(must be C or higher)

OR

_ Option 2: Thermodynamics	(hr)	Semester	Grade	
ENCP A200 (Statics)	(3)	_____	_____	(must be C or higher)
ENCP A260 (Intro Mechanics of Solids)	(3)	_____	_____	(must be C or higher)
ENCP A290 (Thermodynamic Fundamentals)	(3)	_____	_____	(must be C or higher)
ENCP A394 (Thermodynamic System Design and Analysis)	(3)	_____	_____	(must be C or higher)

OR

_ Option 3: Materials and Instrumentation	(hr)	Semester	Grade	
ENCP A200 (Statics)	(3)	_____	_____	(must be C or higher)
ENCP A260 (Intro Mechanics of Solids)	(3)	_____	_____	(must be C or higher)
STAT 509 (Statistics)	(3)	_____	_____	(must be C or higher)
ENCP A361 (Instrumentation, Measurements, and Statistics)	(3)	_____	_____	(must be C or higher)
ENCP A371 (Engineering Materials)	(3)	_____	_____	(must be C or higher)

4. ELECTIVES (A total of at least 120 credit hours is required for graduation)

_ same courses as B.S.

- 1 - A grade of C or higher is required in all chemistry courses counting toward the degree. Students placing in Mathematics 108 or below will successful complete these courses before enrolling in any chemistry course.
- 2 - At least a C in BIOL A121 and CHEM A332 are prerequisites for BIOL A541. At least a C in BIOL 121/122 are pre-requisites for BIOL 350. At least a C in BIOL 121/122 and either BIOL A350 or BIOL A360 are pre-requisites for 502.
- 3 - Freshmen should take Math in their first semester MATH 141 is a pre-requisite for MATH 142 and PHYS 211.