

# 2020-2021 Catalog

## Bachelor of Science in Chemistry

This document corresponds to the Catalog 2019-2020. Determine your Catalog year by performing a Degree Evaluation in Trailhead. Important: this document is an advising tool for students and faculty -- not an official document. Students are responsible for complying with all graduation requirements as stated in the Mines Bulletin that corresponds to your enrollment term.

LEGEND	Required by the Mines Core Curriculum
LEGEND	Distributed Science Courses

FRESHMAN YEAR	FALL	4.0 hr. <b>MATH 111</b> Calculus for Scientists and Engineers I <i>Pre-req: Pre-calculus</i>	4.0 hr. <b>GEGN 101</b> Intro to Earth & Environmental Systems <i>(GEGN 101 is recommended, but CBEN 110 Biology is also accepted.)</i>	4.0 hr. <b>CHGN 121</b> Principles of Chemistry I with Lab	0.5 hr. <b>CSM 101</b> Freshman Success Seminar	3.0 hr. <b>EDNS 151</b> Introduction to Design	0.5 hr. <b>PAGN</b> Physical Education <i>(any PAGN course)</i>	
	SPRING	4.0 hr. <b>MATH 112</b> Calculus for Scientists and Engineers II <i>Pre-req: MATH 111 with a C- or better</i>	4.5 hr. <b>PHGN 100</b> Physics I - Mechanics <i>Pre-req: MATH111; Co-Req: MATH112 or MATH113 or MATH122</i>	4.0 hr. <b>CHGN 122</b> Principles of Chemistry II with Lab <i>Pre-req: CHGN 121 with C- or better</i>		4.0 hr. <b>HASS 100</b> Nature and Human Values	0.5 hr. <b>PAGN</b> Physical Education <i>(any PAGN course)</i>	
SOPHOMORE YEAR	FALL	4.0 hr. <b>MATH 213</b> Calculus for Scientists and Engineers III <i>Pre-req: MATH 112 with a C- or better</i>	4.5 hr. <b>PHGN 200</b> Physics II - Electromagnetism & Optics <i>Pre-req: PHGN 100, MATH 213 with C- or better</i>	3.0 hr. <b>CHGN 209</b> Intro to Chemical Thermodynamics <i>Pre-req: CHGN 122 or CHGN 125, MATH 112, PHGN 100</i>	3.0 hr. <b>CHGN 221</b> Organic Chemistry I <i>Pre-req: CHGN 122 or CHGN 125 with C- or better</i>	1.0 hr. <b>CHGN 223</b> Organic Chemistry I Lab	0.5 hr. <b>PAGN</b> Physical Education <i>(any PAGN course)</i>	
	SPRING	3.0 hr. <b>MATH 225</b> Differential Equations <i>Pre-req: MATH 112 or MATH 122 with a C- or better, or concurrent MATH 113</i>	3.0 hr. <b>CHGN 335</b> Instrumental Analysis <i>Pre-req: CHGN 122 with C- or better</i>	3.0 hr. <b>EBGN 201</b> Principles of Economics	3.0 hr. <b>CHGN 222</b> Organic Chemistry II <i>Pre-req: CHGN 221 with C- or better</i>	1.0 hr. <b>CHGN 224</b> Organic Chemistry II Lab	3.0 hr. <b>HASS 200</b> Global Systems <i>Pre-req: HASS 100</i>	0.5 hr. <b>PAGN</b> Physical Education <i>(any PAGN course)</i>
JUNIOR YEAR	FALL	3.0 hr. <b>CHGN 341</b> Inorganic Chemistry I <i>Pre-req: CHGN 222 and CHGN 209 with C- or better</i>	4.0 hr. <b>CHGN 351</b> Physical Chemistry: A Molecular Perspective I <i>MATH 225, PHGN 200, CHGN 122 and (CHGN 209 or CBEN 210) with C- or better</i>	1.0 hr. <b>CHGN 395</b> Introduction to Undergraduate Research <i>Pre-req: CHGN 222, 224 or consent of Dept Head. Complete Chemistry Curriculum thru spring semester sophomore year</i>	3.0 hr. <b>CHGN 336</b> Analytical Chemistry <i>Pre-req: CHGN 122 and (CHGN 209 or CBEN 210) with C- or better</i>	1.0 hr. <b>CHGN 337</b> Analytical Chemistry Lab	3.0 hr. <b>HASS/EBGN***</b> HASS Mid-Level Restricted Elective I	3.0 hr. <b>FREE</b> Free Elective
	SPRING	4.0 hr. <b>CHGN 353</b> Physical Chemistry: A Molecular Perspective II <i>Pre-req: CHGN 351</i>	2.0 hr. <b>CHGN 323</b> Qualitative Organic Analysis and Applied Spectroscopy <i>Pre-req: CHGN 222 and 224, C- or better</i>	3.0 hr. <b>CHGN 428</b> Biochemistry <i>Pre-req: CHGN 222 or consent of instructor</i>	3.0 hr. <b>TECH ELECT*</b> Technical Elective		3.0 hr. <b>TECH ELECT*</b> Technical Elective	
SUMMER		6.0 hr. <b>CHGN 490</b> Field Session <i>Pre-req: CHGN 323, CHGN 341, and CHGN 353 or consent of instructor</i>						
SENIOR YEAR	FALL	3.0 hr. <b>CHGN ELECT **</b> Chemistry Elective	3.0 hr. <b>TECH ELECT*</b> Technical Elective	3.0 hr. <b>TECH ELECT*</b> Technical Elective		3.0 hr. <b>HASS/EBGN***</b> HASS Mid-Level Restricted Elective II	3.0 hr. <b>FREE</b> Free Elective	
	SPRING	2.0 hr. <b>CHGN ELECT **</b> Chemistry Elective	3.0 hr. <b>CHGN 401</b> Inorganic Chemistry II <i>Pre-req: CHGN 341 or consent of instructor</i>	3.0 hr. <b>TECH ELECT*</b> Technical Elective		3.0 hr. <b>HASS/EBGN***</b> HASS 400-Level Restricted Elective III	3.0 hr. <b>FREE</b> Free Elective	

### Notes:

\*Technical Electives are courses in any technical field. HASS, PAGN, Military Science, ROTC, McBride and the business courses of EBGN are not accepted technical electives.

\*\* Chemistry Electives are non-required courses taught within the Chemistry Department. In addition, graduate level Chemistry and Geochemistry courses taught within the Chemistry Department are acceptable.

\*\*\* The list of courses that qualify for this requirement are revised yearly and posted on the Mines website. At least one of the courses must be at the 400-level; at least one must have an HASS prefix.

**133.5 Credit Hours**