CHEMISTRY
COLORADO STATE UNIVERSITY

MATERIALS CHEMISTRY CONCENTRATION

CHEM-XCHZ-BS

Graduation Requirements: 120 total credits

Overall GPA 2.00 or better; AUCC GPA 2.00 or better; C or better in major courses; 42 upper-division credits (30 at CSU); last 15 credits must be taken at CSU.

Major Requirements/Other Requirements

six foundational courses (30 credits); in-depth chemistry courses (12 credits, 5 credits must have lab); advanced electives (17 credits); 400 lab hours (beyond CHEM121 or CHEM114); foundational science courses (e.g. math, physics, etc.); electives

All University Core-Curriculum Credit Requirement:

intermediate (AUCC1A, 3 credits) and advanced composition (AUCC2, 3 credits); mathematics (AUCC1B, 3 credits); diversity, equity, inclusion (AUCC1C, 3 credits); arts and humanities (AUCC3B, 6 credits); social and behavioral sciences (AUCC3C, 3 credits); historical perspectives (AUCC3D, 3 credits)

Student Success Markers (to be completed within the first 30 credits):

CHEM 192; CO 150; 3 credits of math; 3 credits of diversity, equity, and inclusion (AUCC1C)

FIRST YEAR — Total Year Credits: 30

Fall			Spring		
Term Credit Hours	16		Term Credit Hours	14	
Course Code	**Course No.**	**Credit Hours**	**Course Code**	**Course No.**	**Credit Hours**
CHEM192	Introductory Seminar	2	CHEM241	Organic Chemistry	4
CHEM120	Modern Chemistry	4	CHEM242	Organic Chemistry Lab	1
CHEM121	Modern Chemistry Lab	1	CHEM263	Inorganic Chemistry	4
AUCC3B	Arts and Humanities	3	CHEM264	Inorganic Chemistry Lab	1
AUCC1C	Diversity, Equity, Inclusion	3	MATH155 or 160	Calculus I	4
CO150	College Composition	3			
MATH 117-118-124-125-126 or 127 (if needed)					

SECOND YEAR — Total Year Credits: 28

Fall			Spring		
Term Credit Hours	14		Term Credit Hours	14	
Course Code	**Course No.**	**Credit Hours**	**Course Code**	**Course No.**	**Credit Hours**
CHEM231	Analytical Chem	3	CHEM321 or BC351	Chemical Biology	4
CHEM232	Analytical Chem Lab	2	CHEM322	Chemical Biology Lab	1
MATH271 or 161	Applied Math / Calculus 2	4	MATH272 or 261	Applied Math / Calculus 3	4
PH141 or 121	Physics 1	5	PH142 or 122	Physics 2	5

THIRD YEAR — Total Year Credits: 30

Fall			Spring		
Term Credit Hours	14		Term Credit Hours	16	
Course Code	**Course No.**	**Credit Hours**	**Course Code**	**Course No.**	**Credit Hours**
CHEM301 or CO300 or JTC300	Advanced Writing	3	CHEM315	Polymer Chemistry	3
CHEM371	Physical Chemistry	4	AUCC3B	Arts and Humanities	3
CHEM372	Physical Chemistry Lab	1	AUCC3D	History	3
CHEM311	Intro to Nanoscale Science	3	Electives	any level	3
AUCC3C	Social Science	3	Advanced Electives	300, 400, or 500-level	4

FOURTH YEAR — Total Year Credits: 32

Fall			Spring		
Term Credit Hours	16		Term Credit Hours	16	
Course Code	**Course No.**	**Credit Hours**	**Course Code**	**Course No.**	**Credit Hours**
Select three credit from the following:			CHEM493 or 499	Seminar or Thesis	2
CHEM476, 477, 511, GES465, ERHS410		3	CHEM 461	Inorganic Chemistry	3
Advanced Electives	300, 400, or 500-level	6	CHEM 462	Inorganic Chemistry Lab	2
ELECTIVE	any level	7	ELECTIVE	any level	5
			Advanced Electives	300, 400, or 500-level	4

TOTAL DEGREE CREDITS: 120

All University Core Curriculum Courses (AUCC)

For a complete list of courses, visit the university catalog at https://catalog.colostate.edu. Honors students may have other requirements in these categories; talk to your Honors Advisor.

***Foundational Courses Requirement Options (Choose One)**

Foundational Courses: GENERAL / ANALYTICAL

GROUP A	GROUP B
CHEM 120/121	CHEM 111/112
CHEM 231/232	CHEM 113/114
	CHEM 231/232

Foundational Courses: ORGANIC

GROUP A	GROUP B	GROUP C
CHEM 241/242	CHEM 245/246	CHEM 341
	CHEM 343/344	CHEM 343/344

****Advanced Electives**

CHEM 384-Supervised College Teaching
CHEM 487-Internship
CHEM 495-Independent Study
CHEM 498-Research
Any other course from the in-depth chemistry courses list.
Any course at the 300-, 400-, or 500-level.
(If the student is pursuing a pre-health profession, please refer to *https://hp.colostate.edu* for more information on prerequisites or declare concentration in Health Sciences. Courses may satisfy the advanced electives requirements)

Revised: 8/31/2023 CJO

*****In-depth Chemistry Courses (12 credits minimum)**

At least 3 credits from lab courses and at least 5 credits from AUCC4B. Any of these courses may also be used to satisfy the advanced electives, except when required for a concentration.*

Course	Credits
CHEM 311-Introduction to Nanoscale Science	3
CHEM 315-Foundations of Polymer Chemistry	3
CHEM 320-Chemistry of Addictions	3
CHEM 333-Forensic Chemistry (AUCC4B)	3
CHEM 338-Environmental Chemistry (AUCC4B)	3
CHEM 355-Sustainable Chemistry	3
CHEM 431-Instrumental Analysis* (AUCC4B)	4
CHEM 433-Clinical Chemistry*	3
CHEM 440-Advanced Organic Chemistry Lab* (AUCC4B)	2
CHEM 421-Chemistry of Cannabis and Hemp	3
CHEM 445-Synthetic Organic Chemistry (AUCC4B)	3
CHEM 448-Medicinal Chemistry	3
CHEM 451-Catalysis	3
CHEM 461-Advanced Inorganic Chemistry (AUCC4B)	3
CHEM 462-Advanced Inorganic Chemistry Lab*	2
CHEM 465-Chemistry of Sustainable E-Waste Management	3
CHEM 476-Physical Chemistry II (AUCC4B)	3
CHEM 477-Physical Chemistry II Lab*	1
CHEM 498-Research*	1-3 per term
any CHEM 500+ course	

Name:					Advising Code:			
Progress to Degree	Earned:		/120		**Registration**	Date:		Time:
GPA-CUM		In Progress:			Pre-Health	PharmD	MD	DMD / DVM
GPA-AUCC		Needs:			Double Major			
Standing	GS	PRB-1	PRB-2		Minors			