

Name _____
Clarion ID _____
Entrance Date _____
Program Entry Date _____
Advisor _____

Transfer:* _____
** _____
CUP: _____

GENERAL EDUCATION REQUIREMENTS - 48 CREDITS
Consult the Gen. Ed. Requirements for your Catalog Year for more specifics.

- I. LIBERAL EDUCATION SKILLS - 15 CREDITS CR. GR.
- A. English Composition (3 credits)
Eng 111: Writing II _____
- B. Mathematics Requirement (3 credits)

- C. Freshman Inquiry Seminar (3 credits)
INQ _____
- C. Credits to total 12 in Category I, selected from at least two of the following: Academic Enrichment, MMAJ 140 or 340, Computer Information Science, CSD 465, Elementary Foreign Language, English Composition, Hon 128, Logic, Mathematics, & CMST

- II. LIBERAL KNOWLEDGE - 27 CREDITS
- A. **Physical & Biological Science** (9 credits) selected from at least two of the following: Biology, Chemistry, Earth Sci., ENVR275, GS411, HON230, Mathematics, Phys. Sci. & Physics.

- B. **Social & Behavioral Science** (9 credits) selected from at least two of the following: Anthropology, CSD125, CSD 257, Economics, Geography, GS 140, History, HON240, NURS320, Pol. Sci., Psychology, Social Work, Sociology & Women & Gender Studies.

- C. **Arts & Humanities** (9 credits) selected from at least two of the following: English Language and Literature, HON 130, Humanities, Intermediate Foreign Language and Cultures, Music, Philosophy, Speech and Theater.

- III. HEALTH AND PERSONAL PERFORMANCE - 3 CREDITS
- A. Health and Wellness (2 credits)
_____ 2 _____
- B. Personal Performance (1 course and 1 credit)

- IV. GEN. ED. ELECTIVES - CREDITS TO TOTAL 48 FROM GEN. ED.
Up to 1 credit from III.B.

FLAGS - Record below:

_____ 1st Year Values (V) _____ 2nd Year Values (S)
_____ Quant. Reas. (Q) _____ Info. Lit. (I)
_____ Writing Int. (W) _____ Writing Int. (W)

V. REQUIREMENTS IN MAJOR: 59 CREDITS CR. GR.

- A. Required in Chemistry (39 credits)**
- CHEM 151: Chemical Principles I 3 _____
CHEM 161: Chemical Principles I (Lab) 1 _____
CHEM 152: Chemical Principles II 3 _____
CHEM 162: Chemical Principles II (Lab) 1 _____
CHEM 251: Organic Chemistry I 3 _____
CHEM 261: Organic Chemistry I (Lab) 1 _____
CHEM 252: Organic Chemistry II 3 _____
CHEM 262: Organic Chemistry II (Lab) 1 _____
CHEM 353: Analytical Chemistry I 3 _____
CHEM 363: Analytical Chemistry I (Lab) 1 _____
CHEM 358: Analytical Chemistry II 3 _____
CHEM 368: Analytical Chemistry II (Lab) 1 _____
CHEM 265: Inorganic Chemistry I 3 _____
CHEM 266: Inorganic Chemistry I (Lab) 1 _____
CHEM 366: Inorganic Chemistry II 3 _____
CHEM 367: Inorganic Chemistry II (Lab) 1 _____
CHEM 354: Chemical Thermodynamics 3 _____
CHEM 364: Physical Chemistry (Lab) 1 _____
CHEM 470: Chemistry Seminar 3 _____

- B. Required Credits in Geology (20 credits)**
- ES 150: Physical Geology 4 _____
ES 255: Geomorphology 4 _____
ES 330: Hydrogeology w/ Lab 4 _____
ES 370: Petrology 4 _____

Select one of the following choices

ES 350: Structural Geology	<u>4</u> _____
or	
ES 390: Strat. & Sedimentary Petrology	<u>4</u> _____

VI. FREE ELECTIVES (to bring total to ≥ 120 credits)

PROGRAM NOTES:

1) Chemistry majors with a Geochemistry concentration are required to take MATH 270, 271, and Physics 251, 252, and may elect to place these courses under I. Liberal Education Skills or II. Liberal Knowledge.

No Changes since FALL 2020

SUGGESTED SCHEDULE OF COURSES and COURSE PLANNING GUIDE

DEGREE PROGRAM: B.S. CHEMISTRY: Geochemistry Concentration

FRESHMAN YEAR

<i>Fall Semester</i>	<i>Spring Semester</i>
CHEM 151 Chemical Prin. I (Lec); 3 CR	CHEM 152 Chemical Prin. II (Lec); 3 CR
CHEM 161 Chemical Prin. I Lab; 1 CR	CHEM 162 Chemical Prin. II Lab; 1 CR
MATH 171 Precalculus; 4 CR	MATH 270 Calculus I; 4 CR
ES 150 Physical Geology; 4 CR	

Other courses/electives to consider for your Freshman year: **(1)** ENG 111- Writing II; **(2)** Inquiry Seminar/ First Year Values Flag Course [See Registrar/ Student Resources/ General Education Flags: <http://www.clarion.edu/academics/registrars-office/documents-and-forms/General-education-flags.pdf>]; **(3)** Health and/or Personal Performance

SOPHOMORE YEAR

<i>Fall Semester</i>	<i>Spring Semester</i>
CHEM 251 Organic Chemistry I (Lec); 3 CR	CHEM 252 Organic Chemistry II (Lec); 3 CR
CHEM 261 Organic Chemistry I Lab; 1 CR	CHEM 262 Organic Chemistry II Lab; 1 CR
MATH 271 Calculus II; 4 CR	CHEM 265 Inorganic Chemistry I (Lec); 3 CR
PH 251 General Physics I; 4 CR	CHEM 266 Inorganic Chemistry I Lab; 1 CR
ES 255 Geomorphology; 4 CR (either Fall or Spring)	PH 252 General Physics II; 4 CR

In addition to completing your Physics and Math requirements, other courses/electives to consider for your Sophomore year: **(1)** Liberal Knowledge Gen. Ed. requirements; **(2)** Second Values Flag Course [See Registrar/ Student Resources/ General Education Flags: <http://www.clarion.edu/academics/registrars-office/documents-and-forms/General-education-flags.pdf>]; **(3)** Health and/or Personal Performance.

JUNIOR YEAR

<i>Fall Semester</i>	<i>Spring Semester</i>
CHEM 353 Analytical Chemistry I (Lec); 3 CR	CHEM 358 Analytical Chemistry II (Lec); 3 CR
CHEM 363 Analytical Chemistry I Lab; 1 CR	CHEM 368 Analytical Chemistry II Lab; 1 CR
CHEM 366 Inorganic Chemistry II (Lec); 3 CR	ES 370 Petrology; 4 CR
CHEM 367 Inorganic Chemistry II Lab; 1 CR	

Other courses/electives to consider for your Junior year: **(1)** Liberal Knowledge Gen. Ed. requirements; **(2)** Second Values Flag Course [See Registrar/ Student Resources/ General Education Flags: <http://www.clarion.edu/academics/registrars-office/documents-and-forms/General-education-flags.pdf>]; **(3)** If relevant, look at pre-requisites for graduate/ professional school; **(4)** Offered alternate spring semesters: CHEM 359 Advanced Organic Chem. (Lec); 3 CR.

SENIOR YEAR

<i>Fall Semester</i>	<i>Spring Semester</i>
CHEM 354 Chemical Thermodynamics (Lec); 3 CR	CHEM 470 Chemistry Seminar; 3 CR
CHEM 364 Physical Chemistry Lab; 1 CR	ES 350 Structural Geology; 4 CR OR ES 390 Strat. And Sed. Petrology; 4 CR
ES 330 Hydrogeology w/ Lab; 4 CR	

Other courses/electives to consider for your Senior year: **(1)** Complete Gen. Eds; **(2)** Complete ≥ 120 credits; **(3)** Offered alternate spring semesters: CHEM 359 Advanced Organic Chem. (Lec); 3 CR; **(4)** CHEM 465/466 Chemical Research.