Chemistry B.A.

Course Requirements

Courses

|  |  |  |  |
| --- | --- | --- | --- |
| CHEM 103 | General Chemistry I | 4 | F, Sp, Su |
|  | -Or- |  |  |
| CHEM 103H | Honors General Chemistry I | 4 | F |
|  |  |  |  |
| CHEM 104 | General Chemistry II | 4 | F, Sp, Su |
|  | -Or- |  |  |
| CHEM 104H | Honors General Chemistry II | 4 | Sp |
|  |  |  |  |
| CHEM 205 | Organic Chemistry I | 4 | F, Su |
| CHEM 206 | Organic Chemistry II | 4 | Sp, Su |
| CHEM 310 | Biochemistry | 4 | F |
| CHEM 403 | Inorganic Chemistry I | 3 | F |
|  |  |  |  |
| CHEM 404 | Analytical Chemistry | 4 | Sp (even years) |
|  | -Or- |  |  |
| CHEM 416 | Environmental Analytical Chemistry | 4 | Sp (odd years) |
|  |  |  |  |
| CHEM 405 | Physical Chemistry I | 3 | F |
| CHEM 407 | Physical Chemistry Laboratory I | 1 | F |

CHOOSE ONE OF THE OPTIONS below

|  |  |  |  |
| --- | --- | --- | --- |
| CHEM 406 | Physical Chemistry II | 3 | Sp |
|  |  |  |  |
|  | -Or- |  |  |
| CHEM 412 | Inorganic Chemistry II | 2 | Sp |
|  | -And- |  |  |
| CHEM 413 | Inorganic Chemistry Laboratory | 1 | Sp |
|  |  |  |  |
|  | -Or- |  |  |
| CHEM 414 | Instrumental Methods of Analysis | 4 | Sp (odd years) |
|  |  |  |  |
|  | -Or- |  |  |
| CHEM 418 | Marine Environmental Chemistry | 4 | F (even years) |
|  |  |  |  |
| CHEM 419 | -Or-  Biochemistry Mechanisms | 3 | Sp |
| CHEM 420 | -Or-  Biochemistry of Proteins and Nucleic Acids | 3 | F, Sp (odd years) |
|  |  |  |  |
| CHEM 422 | -Or-  Biochemistry Lab  -Or- | 3 | Sp |
| CHEM 425 | Advanced Organic Chemistry | 4 | F (odd years) |
|  |  |  |  |
|  | -Or- |  |  |
| CHEM 435 | Pharmacology and Toxicology | 3 | As needed |

Note: MATH 314 Calculus III is a prerequisite for CHEM 406.

Cognates

|  |  |  |  |
| --- | --- | --- | --- |
| MATH 212 | Calculus I | 4 | F, Sp, Su |
| MATH 213 | Calculus II | 4 | F, Sp, Su |
| PHYS 101 | Physics for Science and Mathematics I | 4 | F, Sp, Su |
| PHYS 102 | Physics for Science and Mathematics II | 4 | F, Sp, Su |

Note: Prior to enrolling in any Chemistry course students must have completed the college mathematics competency.

Subtotal: 50-51

# CHEM - Chemistry

CHEM 104 - General Chemistry II (4)

Topics include states of matter, solutions, kinetics, acids and bases, equilibrium theory, thermodynamics, and electrochemistry. Lecture and laboratory. 7 contact hours.

General Education Category: Advanced Quantitative/Scientific Reasoning.

Prerequisite: CHEM 103 or equivalent with a minimum grade of C-.

Offered: Fall, Spring, Summer.

CHEM 104H - Honors General Chemistry II (4)

For students with a good background in science and mathematics. Topics are listed in and experiments are similar to CHEM 104, with increased emphasis on instrumentation and independent work. Lecture and laboratory. 7 contact hours.

General Education Category: Advanced Quantitative/Scientific Reasoning.

Prerequisite: CHEM 103H or equivalent with a minimum grade of C-.

Offered: Spring.

CHEM 105 - General, Organic and Biological Chemistry I (4)

General chemistry in preparation for studying organic and biochemistry is introduced, including structure, bonding, energy, reactions, rates, equilibrium, acids and bases; and from organic chemistry, alkanes and alkenes. Lecture and laboratory. 6 contact hours.

General Education Category: Natural Science.

Prerequisite: Completed college mathematics competency or appropriate score on the math placement exam.

Offered: Fall, Spring, Summer.

CHEM 106 - General, Organic, and Biological Chemistry II (4)

Topics include alcohols, carbonyl compounds, amines, amides, carbohydrates, lipids, proteins, enzymes, bioenergetics, catabolism, biosynthesis, nucleic acids, hormones, and neurotransmitters. Lecture and laboratory. 6 contact hours.

General Education Category: Advanced Quantitative/Scientific Reasoning.

Prerequisite: CHEM 104 or CHEM 105 with a minimum grade of C-.

Offered: Fall, Spring, Summer.

CHEM 205 - Organic Chemistry I (4)

Topics include structure, stereochemistry, nomenclature, and chemistry of hydrocarbons and alkyl halides, spectroscopy, reaction mechanisms, and computational chemistry. Lecture and laboratory. 7 contact hours.

Prerequisite: CHEM 104 with a minimum grade of C-.

Offered: Fall, Summer.

CHEM 206 - Organic Chemistry II (4)

Topics include reactions of functional groups, synthesis and mechanism, spectroscopic identification, and topics in biochemistry and computational chemistry. Lecture and laboratory. 7 contact hours.

Prerequisite: CHEM 205.

Offered: Spring, Summer.

Offered: As needed.