CHEMISTRY - BIOCHEMISTRY CONCENTRATION - B.S.

General Education Requirements

I. Required Skills and Competencies 16 cr
- ENG 106 Writing Intensive First Year Seminar OR
- ENG 110 Advanced Placement Writing (3 cr)
  May need ENG 050 Basic Writing first, based on test results
- HCS 100 Intro to Human Communication (3 cr)
- Mathematical Competency-Required
- MAT 211 Calculus I —if necessary, student may need
  MAT 175 Pre-Calculus first
- HIS 105 Historical Foundations of Global Cultures (3 cr) AND
- HIS 106 Thinking Historically in a Global Age (3 cr)

II. Categories of Knowledge 37 cr
A: Logic/Numbers for Rational Thinking (4 cr)
- MAT 212 Calculus II
B: Literary, Artistic & Cultural Traditions (9 cr)
C: Biological & Physical Sciences (12 cr)
- CHM 121 Chemical Bonding *
- PHY 205 Intermediate Physics I *
- BIO 161 Principles of Biology: Cell Structure & Function
D: Political, Economic & Geographic Science (6 cr)
E: Social & Behavioral Science (6 cr)

III. Library Skills Complete via College/Advanced Writing course

Chemistry Requirements 46 cr
- CHM 110 The Chemistry Experience (1 cr)
- CHM 121 Chemical Bonding (3 cr) *
  (Prerequisites: MAT 175 or MAT 117 (either may be taken concurrently
  with CHM 121) or math placement at Level 5 and one year of high school
  chemistry or CHM 105 with a grade of C or better.)
- CHM 123 Lab IA (1 cr)
- CHM 122 Chemical Dynamics (3 cr)
  (Prereq: Grade of C or better in CHM 121)
- CHM 124 Lab II A (3 cr)
- CHM 221 Modern Organic Chemistry I (3 cr)
- CHM 223 Lab III A (1 cr)
- CHM 222 Modern Organic Chemistry II (3 cr)
- CHM 224 Lab IVA (3 cr)
- CHM 301 Biochemistry I (3 cr)
- CHM 312 Chemistry Seminar (1 cr)
- CHM 324 Advanced Organic Lab (1 cr)
- CHM 361 Physical Chemistry I (4 cr)
- CHM 362 Physical Chemistry II (4 cr)
- CHM 371 Analytical Chemistry (4 cr)
- CHM 381 Intermediate Inorganic Chemistry (3 cr)
- CHM 420 Biochemistry II (3 cr)
- CHM 421 Biochemistry Lab (1 cr)
- CHM 496 Introduction to Research III (1 cr)

Physics Requirements 8 cr
- PHY 205 Intermediate Physics I (3 cr) * AND
  PHY 123 Physics I Lab (1 cr)
- PHY 206 Intermediate Physics II (3 cr) AND
  PHY 125 Physics II Lab (1 cr)
Biology Requirements 12 cr
___ BIO 260 Genetics (3 cr)
___ BIO 385 Cell Biology (3 cr)
___ BIO 418 Molecular Biology (3 cr)
___ BIO 461 Techniques in Biochemistry (3 cr)
Restricted Elective (choose one) 3-4 cr
___ CHM 481 Advanced Inorganic Chemistry (4 cr)
___ BIO 220 Microbiology (3 cr)
___ BIO 408 Virology (3 cr)
___ BIO 409 Immunology (3 cr)
Free Electives 3-4 cr
Recommended Electives:
___ CSC 110 Computer Science I (3 cr) AND
___ CSC 106 Computer Science I Lab (1 cr)
___ CHM 490 Special Topics (3 cr)
To graduate with American Chemical Society certification students must complete 2 additional credits in research (CHM 497/498).
*Major requirement fulfills General Education Credits
Total Graduation Requirements 120 cr
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GPA Needed to Declare: 2.0
Helpful Hints for Advising:
Semester I CHM121 Chemical Bonding and CHM 123 Lab IA
MAT 211 Calculus I
Semester II CHM122 Chemical Dynamics and CHM 124 Lab IIA
MAT 212 Calculus II
BIO 162 Principles of Biology: Organismal Diversity
Semester III PHY 205 Intermediate Physics I & PHY 123 Lab I
CHM221 Modern Organic Chem I & CHM 223 Lab IIIA
BIO 260 Genetics
Semester IV PHY 206 Intermediate Physics II & PHY 125 Lab II
CHM222 Mod Organic Chem II
MAT 212 Calculus II
Second semester juniors are required to take a comprehensive examination a graduation requirement.
Internships are available Fall, Spring, and Summer in the Carlisle Forensic Laboratory.