

Concord University

Bachelor of Science – Chemistry (3+1 Health Sciences Option)

Name: _____

2025-2026 Catalog

120 hours minimum for graduation with a 2.00 average overall
56 hours from a four-year institution

| Course | Title | CR | GR | QP |
|---|--|-----|-----|-------|
| Written and Oral Communications (9 credit hours) Select one course from BGEN 205 or COMM 101 | | | | |
| ENGL 101 | Composition & Rhetoric I | 3 | | |
| ENGL 102 | Composition & Rhetoric II | 3 | | |
| BGEN 205 Or COMM 101 | Fundamentals of Business Communication Or Fundamentals of Speech | 3 | | |
| Literature and Humanities (6 credit hours) Select one (1) course from Literature and one (1) course from History and Philosophy. *May be repeated for 3 credit hours. | | | | |
| | ENGL 203 or 204 | 3 | | |
| | HIST 101, 102, 203, 204, PHIL 101, 308, 316, or 361 | 3 | | |
| Fine Arts– (3 credit hours) Select one (1) course from the following: | | | | |
| | ART 101, 103, 105, 106, 204, 205, 216, 303, 304, 308, MUS 101, *451, *453A, or THEA 102 | 3 | | |
| Social and Behavioral Sciences (9 credit hours) Select one (1) course from three different categories. | | | | |
| | Category 1 - Business and Professional Studies | 3 | | |
| | BGEN 105, ECON 203, ECON 204, FIN 200, HSP 100 or SOWK 161 | 3 | | |
| | Category 2 - Geography | 3 | | |
| | GEO 100 or 221 | 3 | | |
| | Category 3 - Political Science | | | |
| | POSC 101, 104, or 202 | | | |
| | Category 4 - Psychology | | | |
| | PSY 101 or 200 | | | |
| | Category 5 – Sociology | | | |
| | SOC 101, 201, or 301 | | | |
| Natural Sciences (7-8 credit hours) Select one (1) course from two different categories. | | | | |
| CHEM 101/111 | Category 1-Biological Science | 4 | See | Major |
| | BIOL 101, 102, 121, or 122 | | | |
| PHYS 101 or 201 | Category 2-Earth & Space Science | 4 | See | Major |
| | GEO 101, GEO 140 or 150, GEO 200, PHSC 104, or PHYS 105 | | | |
| | Category 3-Physical Science | | | |
| | CHEM 100, CHEM 101/111, PHSC 103, PHYS 101, or PHYS 201 | | | |
| | | | | |
| | | | | |
| Mathematics (3 credit hours) Select one (1) Mathematics course numbered 100 or higher. | | | | |
| MATH 103 | | 3 | See | Major |
| Physical Wellness (2 credit hours) Select one or more courses listed below for a total of at least two hours. | | | | |
| | HS 120, 304, P ED 101M, 117 or 118 | 2-3 | | |
| Modern/Classical Language – (Optional 6 credit hours) Select two courses within the same Modern/Classical Language for substitution purposes. | | | | |
| | May not substitute Modern Language for ENGL 101, ENGL 102, the 3-hour Mathematics requirement or the 4-hour lab science requirement. | | | |

| Chemistry Core Curriculum (2.00 GPA required) 45-48 credit hours | | | | |
|---|---|-----|--|--|
| Introductory Course Work (8 credit hours) | | | | |
| CHEM 101 | Principles of Chemistry I | 3 | | |
| CHEM 111 | Principles of Chemistry I Lab | 1 | | |
| CHEM 102 | Principles of Chemistry II | 3 | | |
| CHEM 112 | Principles of Chemistry II Lab | 1 | | |
| Foundational Course Work (18-19 credit hours) | | | | |
| CHEM 210 | Chemical Health and Safety | 1 | | |
| PHSC 219 | Laboratory Research Methods and Ethics | 1 | | |
| CHEM 331 | Organic Chemistry I | 4 | | |
| CHEM 341 | Biochemistry I | 3 | | |
| CHEM 347 | Biochemistry Lab | 1 | | |
| CHEM 351 | Analytical Chemistry | 3 | | |
| CHEM 357 | Analytical Chemistry Lab | 2 | | |
| | Add one of the following Chemistry Foundational Electives (3-4 Credit hours) <ul style="list-style-type: none"> • CHEM 352 Instrumental Analysis (3) and CHEM 358 Instrumental Analysis Laboratory (1) • CHEM 401 Physical Chemistry Thermodynamics (3) and CHEM 407 Physical Chemistry Laboratory (1) • CHEM 402 Physical Chemistry – Quantum Mechanics (3) • CHEM 413 Inorganic Chemistry (3) and CHEM 417 Inorganic Chemistry Laboratory (1) | 3-4 | | |
| Cognate Science and Mathematics (19-21 credit hours) | | | | |
| MATH 103/103C and MATH 104 or MATH 107 | College Algebra** and College Trigonometry or Precalculus | 4-6 | | |
| MATH 253 | Calculus w/Analytic Geometry I | 4 | | |
| | Three or more credit hours of mathematics and/or computer science selected from MATH 105 or higher and/or CS 151 or higher (MATH 254 recommended) | 3 | | |
| Select one of the following 2-course physics sequences: | | | | |
| PHYS 101 and PHYS 102 or PHYS 201 and PHYS 202 | Introductory to Physics and Intermediate Physics or University Physics w/ Calculus I and University Physics w/ Calculus II | 4 | | |
| | | 4 | | |

Students must select ONE of the concentrations on the following page.

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| BIOCHEMISTRY 12-16 credit hours electives <i>Students completing PHYS 201 and 202 require 12 rather than 16 hours of electives.+</i> | | | | |
|--|--|--|--|--|
| | • CHEM 302 or BIOL 302 Cell and Molecular Biology (4) | | | |
| | • BIOL 329 Microbiology (4) | | | |
| | • BIOL 401 Genetics (4) | | | |
| | • BIOL 419 Immunology (4) | | | |
| | • CHEM 470 Independent Laboratory Research (1-6) | | | |
| | • CHEM Course(s) 300 Level or higher (no more than eight credit hours) | | | |
| | • PHYS Course(s) 300 Level or higher (no more than six credit hours) | | | |
| | | | | |

| GEOCHEMISTRY 12-16 credit hours electives <i>Students completing PHYS 201 and 202 require 12 rather than 16 hours of electives.+</i> | | | | |
|--|---|--|--|--|
| | • GEO 305 Environmental and Applied Geology (4) | | | |
| | • GEO 365 Earth Materials and Mineral Resources (4) | | | |
| | • GEO or CHEM 470 Research (1-6) | | | |
| | • GEO course(s) 380 level or higher (no more than six credit hours) | | | |
| | • CHEM course(s) 300 or higher (no more than four credit hours) | | | |
| | | | | |

| PROFESSIONAL CHEMISTRY 12-16 credit hours electives <i>Students completing PHYS 201 and 202 require 12 rather than 16 hours of electives.+</i> | | | | |
|--|---|--|--|--|
| | • CHEM 302 or BIOL 302 Cell and Molecular Biology (4) | | | |
| | • CHEM 470 Independent Laboratory Research (1-6) | | | |
| | • CHEM course(s) 300 level or higher | | | |
| | • PHYS course(s) 300 level or higher | | | |

| 3 + 1 HEALTH SCIENCES 38 credit hours (All of the following)* | | | | |
|--|--|--------------|--|--|
| BIOL 329 | Microbiology | 4 | | |
| CHEM 332 | Organic Chemistry II | 4 | | |
| CHEM 460 or MDTH 460 | Chemistry Practicum or Medical Technology Practicum <i>(may be repeated for up to 30 hours)</i> | 15 15 | | |

*PHYS 102 or 202 (4 credit hours), and the Chemistry Foundational Elective course (3-4 credit hours) is not required for 3+1 Health Sciences. However, students who do not obtain admission to an approved school of pharmacy or medical technology will have to take these hours and pursue a different elective concentration during their senior year.

**MATH 103 and MATH 104, or MATH 107 will be waived for those students establishing “equivalent proficiency” as defined by the Department of Mathematics (ACT Math Score 25 or 28).

+One 4-hour course from elective concentrations 1, 2, or 3 may be waived for students completing PHYS 201 - PHYS 202.

RESIDENCE CREDIT:

36 hours at Concord

16 of last 32 hours at Concord

Note: In some degree programs, this is prior to entering professional training.

9 hours in Major, Teaching Fields

TOTAL MINIMUM REQUIRED CREDITS: 120

PROGRAM REQUIREMENTS: 57-86

GENERAL EDUCATION CREDITS: 29-30

ELECTIVE CREDITS: 4-34