

Student ID: _____
Student Name: _____
Adviser Name: _____

Catalog: 2023-2024 Undergraduate Catalog
Program: Professional Health Science, B.S.
Minimum Credits Required: _____

Professional Health Science, B.S.

The 120 credit-hour Professional Health Science, B.S. degree is an interdisciplinary program designed for students who plan to become a medical/health professional. The major will prepare students who want to become a physician, dentist, pharmacist, physician assistant, optometrist, anesthesiologist assistant, laboratory researcher, or for an appropriate doctoral or master's level health program leading to their career of choice. Graduation will enable students to have future pathways in private industry, government, academics, or other science-related fields. As part of the academic program, students complete a capstone research project under the direct guidance of biology or chemistry faculty. Students with high academic standing who wish to pursue competitive careers in the biological or medical sciences are encouraged to consider the Honors Capstone option.

Core Curriculum: 38 - 51 credit hours

Please review the Core Curriculum page for course options.

Required Core Courses

Professional Health Science majors must take the following courses as part of their liberal arts cores regardless of whether the core is otherwise met:

Liberal Arts, Mathematics

- MA 120 College Algebra (3) or higher (Required for Pre-PT/Pre-OT students)
- MA 125 Precalculus (5) or higher (Required for Pre-Med/Pre-Pharm students)
- MA 241 Calculus & Analytic Geometry I (5) (Required for BioMed students)

Liberal Arts, Natural Science with Lab

- PH 117 Physics Concepts (4) (PreOccupational Therapy only)
- PH 231 General Physics I (5) (Required for all other concentrations)

Liberal Arts, Philosophy

- PL 255 Ethics (3)

Liberal Arts, Social Science

- PY 101 General Psychology (3)

Professional Health Science Foundation Courses (19 credits)

All Professional Health Science Majors must complete the following courses:

Course Name	Term Taken	Grade	Gen Ed
BI 111 - General Biology: Cells & Genes (4)			
BI 112 - General Biology: Ecology & Evolution (4)			
CH 135 - General Chemistry I (4)			
CH 137 - General Chemistry II (4)			
MA 155 - Elementary Probability & Statistics (3)			

Professional Health Science Capstone (3-5 credits)

All Professional Health Science Majors must complete Option 1 or Option 2 of the Capstone Experience.

Course Name	Term Taken	Grade	Gen Ed
Option 1, Standard Track: Choose one of the following CURE-designated courses.			
BI 345 - Molecular Cell Biology w/Laboratory (4)			
BI 346 - Biochemistry & Molecular Biology Techniques (3)			
BI 360 - Ecology (3)			
CH 346 - Biochemistry & Molecular Biology Techniques (3)			
CH 321 - Analytical Chemistry (4)			
Option 2, Honors Track: Complete the following courses.			
BI 392 - Introduction to Research (1)			
BI 493 - Biology Laboratory Research (1-2) (2 semesters)			
BI 499 - Colloquium & Seminar (2-3)			

Professional Health Concentrations

Professional Health majors must choose one of the following concentrations to complete their degree.

Biomedical Science Concentration (31-32 credit hours)

Course Name	Term Taken	Grade	Gen Ed
BI 152 - General Microbiology (4)			
BI 318 - Genetics (3)			
BI 345 - Molecular Cell Biology w/Laboratory (4)			
CH 216 - Organic Chemistry I (5)			
CH 217 - Organic Chemistry II (5)			
CH 321 - Analytical Chemistry (4)			
CH 342 - Biochemistry I (3)			
At least 3 credit hours from the following:			
BI 321 - Immunology (3)			
BI 346 - Biochemistry & Molecular Biology Techniques (3) or			
CH 346 - Biochemistry & Molecular Biology Techniques (3)			
CH 344 - Biochemistry II (3)			
CH 350 - Physical Chemistry for the Biological Sciences (3)			
CH 497 - Chemistry Research (1-2)			
PH 232 - General Physics II (5)			

Pre-Medical & Pre-Pharmaceutical Studies (33 credit hours)

Course Name	Term Taken	Grade	Gen Ed
BI 152 - General Microbiology (4)			
BI 318 - Genetics (3)			
BI 345 - Molecular Cell Biology w/Laboratory (4)			
CH 216 - Organic Chemistry I (5)			
CH 217 - Organic Chemistry II (5)			
CH 342 - Biochemistry I (3)			
PY 208 - Lifespan Development (3) or			
PY 210 - Abnormal Psychology (3)			
SO 101 - Introduction to Sociology (3)			
Choose One of the Following (at least 3 hours):			
BI 214 - Organismal Biology (4)			
BI 220 - Human Anatomy & Physiology (6-8)			
BI 310 - Evolution (3)			
BI 321 - Immunology (3)			
BI 346 - Biochemistry & Molecular Biology Techniques (3) or			
CH 346 - Biochemistry & Molecular Biology Techniques (3)			
BI 360 - Ecology (3)			
BI 380 - Special Topics (1-4)			
CH 321 - Analytical Chemistry (4)			
CH 344 - Biochemistry II (3)			
PH 232 - General Physics II (5)			

Pre-Occupational Therapy Concentration (26 credit hours)

Course Name	Term Taken	Grade	Gen Ed
BI 220 - Human Anatomy & Physiology (6-8)			
KN 211 - Applied Sports Medicine (3)			
KN 381 - Exercise Physiology (3)			
HE 124 - Medical Terminology (2)			
PY 208 - Lifespan Development (3)			
PY 210 - Abnormal Psychology (3)			
SO 101 - Introduction to Sociology (3)			

At least 3 hours from the following:			
BI 310 - Evolution (3)			
BI 380 - Special Topics (1-4)			
KN 393 - Sports Psychology (3)			
KN 319 - Biomechanics & Motor Control (3)			
KN 420 - Stress Physiology (3)			

Pre-Physical Therapy (26 credit hours)

Course Name	Term Taken	Grade	Gen Ed
BI 220 - Human Anatomy & Physiology (6-8)			
KN 211 - Applied Sports Medicine (3)			
KN 381 - Exercise Physiology (3)			
PH 232 - General Physics II (5)			
PY 208 - Lifespan Development (3)			
PY 210 - Abnormal Psychology (3)			

At least 3 credit hours from the following:			
BI 310 - Evolution (3)			
BI 380 - Special Topics (1-4)			
KN 319 - Biomechanics & Motor Control (3)			
KN 393 - Sports Psychology (3)			
KN 420 - Stress Physiology (3)			

Electives (minimum of 0 credit hours)

May have elective hours depending on concentration choice.

Technology Requirement

Computer competency will be demonstrated by successful completion of BI 499/CH 499 or KN 499 with a “C” or better within the major.

Professional Health Science Honors Research

The Honors Track in Professional Health Science emphasizes hands-on experience with research techniques applicable to a broad range of fields in Biology, Chemistry, and the Medical Sciences. Students completing a B.S. in Professional Health Science with Honors will be prepared to pursue competitive careers in academic research, private industry, medicine, biomedical research, and related fields. To qualify for honors status, students must:

1. Maintain a 3.0 GPA overall and a 3.3 GPA within the biology major.
2. Complete an honors-level capstone research project (one semester of BI 392, two semesters of BI 493, and one semester of BI 499).
The capstone research project must be completed as part of an active research lab and address an original research question.

Students interested in the PHS Honors Program must first enroll as Professional Health Science majors. They should complete course work within the major that prepares them sufficiently for the demands of Honors Research, with special attention paid to specific area of interest. Students who have maintained a qualifying GPA enroll in BI 392 in their second or third year of study. BI 392 students identify a research mentor to supervise their Honors Capstone Project. They then apply for Honors status by developing, presenting, and defending a research proposal.

Students accepted to the Honors Capstone work closely with Biology or Chemistry Faculty to complete an original laboratory or field research project that spans at least three semesters prior to graduation. The Honors Capstone Project is subject to periodic review and must meet with the Biology and Chemistry Faculty’s approval to qualify for honors.

Outcomes

Upon graduation, a student majoring in Professional Health Science should be able to:

Outcome 1.

Demonstrate a working knowledge of the basic principles of biology, chemistry, and physics. (BI 111 and BI 112, CH 137, and PH 117 or PH 231)

Outcome 2.

Apply scientific knowledge to solving problems. (BI 499 or CH 499 or KN 499)

Outcome 3.

Demonstrate the clear communication of the basic principles of science through speaking and writing. (BI 499 or CH 499 or KN 499)

Outcome 4.

Demonstrate an understanding of current issues in the health professions. (HE 101)

Assessment

The outcomes for the Professional Health Science major are assessed through a combination of examination results, term papers, oral reports, and mentor evaluations in the courses listed above.

Notes: