Integrated Health Sciences, Pre-Professional Concentration Course Options

The Pre-professional concentration is 24 credit hours. **Bolded** items are required. The remaining 16 credit hours will depend on the career direction. Pre-requisite requirements for professional schools vary by institution.

**STEP 1:** Identify professional schools offering your chosen program and research their specific requirements.

**STEP 2:** Speak with your advisor to target your concentration courses to your chosen schools.

*Click on your program of interest for more information.*

For many programs, the following courses are **X** = REQUIRED, **S** = SUGGESTED for admission.

<table>
<thead>
<tr>
<th>Course</th>
<th>CH</th>
<th>MD/ DO</th>
<th>PA</th>
<th>PT</th>
<th>OT</th>
<th>AT</th>
<th>Pharm</th>
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<tbody>
<tr>
<td>BIOL 291 Human Anatomy &amp; Physiology I</td>
<td>4</td>
<td>X</td>
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<td>BIOL 292 Human Anatomy &amp; Physiology II</td>
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<td>ATTR 377 Exercise Physiology (Fall Only)</td>
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<td>BIOL 140 Principles of Biology I</td>
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<td>BIOL 240 Introduction to Genetics (PREQ: BIOL 140 or 141)</td>
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<td>BIO 313 Microbiology in Health &amp; Nutrition</td>
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<td>BIOL 333 Cell and Molecular Biology (PREQ: BIOL 240)</td>
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<td>BIOL/Chem 361 Principles of Biochemistry (PREQ: CHEM 242)</td>
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<td>BIOL 412 Cellular and Molecular Immunology (PREQ: BIOL 240 or 333)</td>
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<tr>
<td>CHEM 139 General Chemistry I</td>
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<td>CHEM 140 General Chemistry II (PREQ: CHEM 139)</td>
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<td>CHEM 241 Organic Chemistry I (PREQ: CHEM 140)</td>
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<td>CHEM 242 Organic Chemistry II (PREQ: CHEM 241)</td>
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<td>HPE 223 Applied Kinesiology I – Anatomy, Physiology, and Biomechanics</td>
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<td>HPE 225 Applied Kinesiology II (PREQ: HPE 223 or BIOL 291)</td>
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<td>HPE 235 Motor Behavior</td>
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<td>HPE 370 Exercise Physiology (Spring Only)</td>
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<td>MATH 153 Calculus I (PREQ: MATH 146)</td>
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<tr>
<td>PHYS 130 Introductory Physics I</td>
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<td>PHYS 131 Introductory Physics II (PREQ: PHYS 130)</td>
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<td>ENVH 230 Intro to Environmental Health Science</td>
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<td>ENVH 260 Etiology of Infectious Disease (PREQ: CHEM 133) [COREQ: ENVH 261]</td>
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<td>ENVH 261 Etiology of Infectious Disease Lab (COREQ: ENVH 260)</td>
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<tr>
<td>ENVH 270 Biological Basis of Disease</td>
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<td>PSY 320 Developmental Psychology I: Childhood</td>
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<td>PSY 322 Developmental Psychology II: Adolescence (PREQ: PSY 150)</td>
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<tr>
<td>PSY 325 Developmental Psychology III: Adulthood (PREQ: PSY 150)</td>
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<td>PSY 470 Abnormal Psychology (PREQ: PSY 150)</td>
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</table>
Athletic Training

Pre-Professional Concentration for Athletic Training (AT)
The Pre-professional concentration is 24 credit hours. **Biol 291 and BIOL 292 are required.** The remaining 16 credit hours will depend on career direction (see details below). Pre-requisites for professional schools vary by institution, therefore it is imperative that students research admission requirements for their specific schools of choice.

Common AT Pre-Requisites
AT programs can vary significantly in their requirements. Research the schools you are interested in for specific requirements. Many AT programs require the following classes:

**Biology:**
- BIOL 140 - Principles of Biology I
- BIOL 291 – Human Anatomy & Physiology I
- BIOL 292 – Human Anatomy & Physiology II

**Chemistry:**
- CHEM 139 – General Chemistry I

**Physics:**
- PHYS 130 – Introductory Physics I

**Other:**
- Other possible requirements can include courses in Nutrition, Statistics, Psychology, Biomechanics, and Exercise Physiology.

Western Carolina University, MSAT Pre-Requisites
BIOL 140 – Principles of Biology I
BIOL 291 – Human Anatomy & Physiology I
BIOL 292 – Human Anatomy & Physiology II
CHEM 139 – General Chemistry I
ND 330 – Human Nutritional Needs
PHYS 130 – Physics I
PSY 150 – General Psychology

Visit [AT.WCU.EDU](AT.WCU.EDU) for more information.

Other Requirements
Integrated Health Sciences requires you maintain a cumulative GPA of 2.25. You must earn a C or higher in all courses within the major. **Be aware that AT programs have higher GPA requirements.** A minimum GPA of 3.0 is required for most AT programs.

Resources
Search AT Programs: [CAATE.NET/SEARCH-FOR-ACCREDITED-PROGRAM/](CAATE.NET/SEARCH-FOR-ACCREDITED-PROGRAM/)
School of Health Sciences, Student Services Center: [SSC.WCU.EDU](SSC.WCU.EDU)
Other Resource: [WCU.EDU/LEARN/ACADEMIC-SERVICES/ADVISING-CENTER/PREPROFESSIONAL-ADVISING](WCU.EDU/LEARN/ACADEMIC-SERVICES/ADVISING-CENTER/PREPROFESSIONAL-ADVISING)
Occupational Therapy

Pre-Professional Courses for Occupational Therapy
The Pre-professional concentration is 24 credit hours. BIOL 291 and BIOL 292 are required. The remaining 16 credit hours will depend on career direction (see details below). Pre-requisites for professional schools vary by institution, therefore it is imperative that students research admission requirements for their specific schools of choice.

Common OT Pre-Requisites
OT programs vary significantly in their requirements. Research the schools you are interested in for specific requirements. Many OT programs require the following:

BIOLOGY:
- BIOL 291 – Human Anatomy & Physiology I
- BIOL 292 – Human Anatomy & Physiology II

PSYCHOLOGY:
- PSY 150 – General Psychology
- PSY 320 – Developmental Psychology (Childhood)
- PSY 322 – Developmental Psychology (Adolescent)
- PSY 325 – Developmental Psychology (Adult)
- PSY 470 – Abnormal Psychology

ANTHROPOLOGY or SOCIOLOGY:
- ANTH 110 – Origins of Civilization; ANTH 120 – Comparative Cultural Systems; or SOC 103 – Human Society

OTHER:
- Other possible requirements can include Statistics, Physics, and Medical Terminology.

Other Requirements
Integrated Health Sciences requires you maintain a cumulative GPA of 2.25. You must earn a C or higher in all courses within the major. Be aware that OT programs have higher GPA requirements. A minimum GPA of 3.0 is required for most OT programs. The average GPA for students admitted to a program is 3.6.

Resources
Search OT Programs: ACOTEONLINE.ORG/ALL-SCHOOLS/
School of Health Sciences, Student Services Center: SSC.WCU.EDU
Other Resource: WCU.EDU/LEARN/ACADEMIC-SERVICES/ADVISING-CENTER/PREPROFESSIONAL-ADvising
Physical Therapy

Pre-Professional Courses for Physical Therapy
The Pre-professional concentration is 24 credit hours. BIOL 291 and BIOL 292 are required. The remaining 16 credit hours will depend on career direction (see details below). Pre-requisites for professional schools vary by institution, therefore it is imperative that students research admission requirements for their specific schools of choice.

Common PT Pre-Requisites
PT programs vary significantly in their requirements. You should also check if pre-requisite courses are only accepted if taken in-person. Research the schools you are interested in for specific requirements. Many PT programs require the following classes:

BIOLOGY:
- BIOL 140 – Principles of Biology I
- BIOL 141 – Principles of Biology II
- BIOL 291 – Human Anatomy & Physiology I
- BIOL 292 – Human Anatomy & Physiology II

CHEMISTRY:
- CHEM 139 – General Chemistry I
- CHEM 140 – General Chemistry II

PHYSICS:
- PHYS 130 – Introductory Physics I
- PHYS 131 – Introductory Physics II

EXERCISE PHYSIOLOGY:
- ATTR 377 – Exercise Physiology (fall only); HPE 370 – Exercise Physiology (spring only); or HPE 225- Applied Kinesiology II

OTHER:
- Other possible requirements can include courses in Statistics and/or other Math, Psychology, and upper-level Biology.

Western Carolina University, DPT Pre-Requisites
BIOL 140 – Principles of Biology I
BIOL 141 – Principles of Biology II
BIOL 291 – Human Anatomy & Physiology I
BIOL 292 – Human Anatomy & Physiology II
CHEM 139 – General Chemistry I
CHEM 140 – General Chemistry II
Exercise Physiology (Options: ATTR 377, HPE 225, or HPE 370)

MATH 170 – Applied Statistics
PHYS 130 – Introductory Physics I
PHYS 131 – Introductory Physics II
PSY 150 – General Psychology

Visit PT.WCU.EDU for more information.

Other Requirements:
Integrated Health Sciences requires you maintain a cumulative GPA of 2.25. You must earn a C or higher in all courses within the major. Be aware that PT programs have higher GPA requirements. A minimum GPA of 3.0 is required for most PT programs. According to the American Physical Therapy Association, average GPA of admitted students was 3.57.

Resources:
Search PT Programs: PTCASDIRECTORY.APTA.ORG
School of Health Sciences, Student Services Center: SSC.WCU.EDU
Other Resource: WCU.EDU/LEARN/ACADEMIC-SERVICES/ADVISING-CENTER/PREPROFESSIONAL-ADVISING

Updated 05.25.22
**Pre-Professional Courses for MD/DO**

The Pre-professional concentration is 24 credit hours. **BIOL 291 and BIOL 292 are required.** The remaining 16 credit hours will depend on career direction (see details below). Pre-requisites for professional schools vary by institution, therefore it is imperative that students research admission requirements for their specific schools of choice.

**Common MD/DO Pre-Requisites**

MD/DO programs vary significantly in their requirements. Research the schools you are interested in for specific requirements. Many MD/DO programs require the following classes:

**BIOLOGY:**
- BIOL 140 – Principles of Biology I
- BIOL 141 – Principles of Biology II
- BIOL 291 – Human Anatomy & Physiology I
- BIOL 292 – Human Anatomy & Physiology II

**CHEMISTRY:**
- CHEM 139 – General Chemistry I
- CHEM 140 – General Chemistry II
- CHEM 241 – Organic Chemistry I
- CHEM 242 – Organic Chemistry II

**PHYSICS:**
- PHYS 130 – Introductory Physics I
- PHYS 131 – Introductory Physics II

**OTHER:**
- Other possible requirements can include courses in Psychology, Sociology, and upper-level courses in Biology and/or Chemistry (e.g. Biochemistry, Genetics, etc.). These are highly recommended in preparation for the MCAT.

**Other Requirements:**

Integrated Health Sciences requires you maintain a cumulative GPA of 2.25. You must earn a C or higher in all courses within the major. **Be aware that MD/DO programs have higher GPA requirements.** On average nationally, the Biology, Physics, Chemistry, and Math GPA is 3.65. The non-science GPA is 3.8. The overall GPA is 3.72 for admitted students.

**Resources:**

School of Health Sciences, Student Services Center: [SSC.WCU.EDU](https://ssc.wcu.edu)

Other Resource: [WCU.EDU/LEARN/ACADEMIC-SERVICES/ADVISING-CENTER/PREPROFESSIONAL-ADVISING](https://wcu.edu/learn/academic-services/advising-center/preprofessional-advising)
Physician Assistant

Pre-Professional Courses for Physician Assistant

The Pre-professional concentration is 24 credit hours. **BIOL 291 and BIOL 292 are required.** The remaining 16 credit hours will depend on career direction (see details below). Pre-requisites for professional schools vary by institution, therefore it is imperative that students research admission requirements for their specific schools of choice.

Common PA Pre-Requisites

PA programs vary significantly in their requirements. Research the schools you are interested in for specific requirements. You should also check if pre-requisite courses are only accepted if taken in-person. Many PA programs require the following classes:

**BIOLOGY:**
- BIOL 140 – Principles of Biology I
- BIOL 240 – Introduction to Genetics
- BIOL 291 – Human Anatomy & Physiology I
- BIOL 292 – Human Anatomy & Physiology II
- BIOL 313 – Microbiology in Health & Nutrition
  - OR BIOL 413 – Principles of General Microbiology

**CHEMISTRY:**
- CHEM 139 – General Chemistry I
- CHEM 140 – General Chemistry II
- CHEM 241 – Organic Chemistry I
- CHEM 242 – Organic Chemistry II
- CHEM 361 – Principles of Biochemistry (also offered as BIOL 361)

**OTHER:**
- Other possible requirements can include courses in Psychology, Sociology, Statistics, and Medical Terminology.

Other Requirements:

Integrated Health Sciences requires you maintain a cumulative GPA of 2.25. You must earn a C or higher in all courses within the major. **Be aware that PA programs have higher GPA requirements.** Many PA Schools require a minimum GPA of 3.0 for applicants. On average, the GPA of students accepted into PA school is 3.6.

Resources:

Search PA Programs: [ARC-PA.ORG/ACCREDITATION/ACCREDITED-PROGRAMS](ARC-PA.ORG/ACCREDITATION/ACCREDITED-PROGRAMS)
School of Health Sciences, Student Services Center: [SSC.WCU.EDU](SSC.WCU.EDU)
Other Resource: [WCU.EDU/LEARN/ACADEMIC-SERVICES/ADVISING-CENTER/PREPROFESSIONAL-ADVISING](WCU.EDU/LEARN/ACADEMIC-SERVICES/ADVISING-CENTER/PREPROFESSIONAL-ADVISING)
Pharmacy

Pre-Professional Courses for Pharmacy
The Pre-professional concentration is 24 credit hours. BIOL 291 and BIOL 292 are required. The remaining 16 credit hours will depend on career direction (see details below). Pre-requisites for professional schools vary by institution, therefore it is imperative that students research admission requirements for their specific schools of choice.

Common Pharmacy Pre-Requisites
Pharmacy programs vary significantly in their requirements. Research the schools you are interested in for specific requirements. Many pharmacy programs require the following classes:

**BIOLOGY:**
- BIOL 140 – Principles of Biology I
- BIOL 141 – Principles of Biology II
- BIOL 291 – Human Anatomy & Physiology I
- BIOL 292 – Human Anatomy & Physiology II

**CHEMISTRY:**
- CHEM 139 – General Chemistry I
- CHEM 140 – General Chemistry II
- CHEM 241 – Organic Chemistry I
- CHEM 242 – Organic Chemistry II

**ECONOMICS:**
- ECON 231 – Microeconomics OR ECON 232 - Macroeconomics

**MATH:**
- MATH 153 – Calculus I

**PHYSICS:**
- PHYS 130 – Introductory Physics I
- PHYS 131 – Introductory Physics II

*Note: Some schools require Calculus based Physics (PHYS 230 & PHYS 231)

**OTHER:**
- Other possible requirements can include Statistics and advanced coursework in Biology and/or Chemistry.

Other Requirements:
Integrated Health Sciences requires you maintain a cumulative GPA of 2.25. You must earn a C or higher in all courses within the major. Be aware that Pharmacy programs have higher GPA requirements. Many Pharmacy Schools require a minimum GPA of 3.0 for applicants. On average, the GPA of students accepted into Pharmacy school is 3.36.

Resources:
Search Pharmacy Programs: ACPE-ACCREDIT.ORG/ACCREDITED-PROGRAMS-BY-STATE
School of Health Sciences, Student Services Center: SSC.WCU.EDU
Other Resource: WCU.EDU/LEARN/ACADEMIC-SERVICES/ADVISING-CENTER/PREPROFESSIONAL-ADVISING

Updated 05.25.22