

## Supplemental IHS Pre-Professional Guide

### 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.**

	Course	CH	<u>MD/ DO</u>	<u>PA</u>	<u>PT</u>	<u>OT</u>	<u>AT</u>	<u>Pharm</u>
<b>BIOL 291</b>	<b>Human Anatomy &amp; Physiology I</b>	<b>4</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>BIOL 292</b>	<b>Human Anatomy &amp; Physiology II</b>	<b>4</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
ATTR 377	Exercise Physiology (Fall Only)	4			X		S	
BIOL 140	Principles of Biology I	4	X	X	X		X	X
BIOL 141	Principles of Biology II (PREQ: BIOL 140)	4	X		X			X
BIOL 240	Introduction to Genetics (PREQ: BIOL 140 or 141)	4	S	X				
BIO 313	Microbiology in Health & Nutrition	4		X				
BIOL 333	Cell and Molecular Biology (PREQ: BIOL 240)	4						
BIOL/CHEM 361	Principles of Biochemistry (PREQ: CHEM 242)	3		X				
BIOL 412	Cellular and Molecular Immunology (PREQ: BIOL 240 or 333)	3						
CHEM 139	General Chemistry I	4	X	X	X		X	X
CHEM 140	General Chemistry II (PREQ: CHEM 139)	4	X	X	X			X
CHEM 241	Organic Chemistry I (PREQ: CHEM 140)	4	X	X				X
CHEM 242	Organic Chemistry II (PREQ: CHEM 241)	4	X	X				X
HPE 223	Applied Kinesiology I – Anatomy, Physiology, and Biomechanics	4					S	
HPE 225	Applied Kinesiology II (PREQ: HPE 223 or BIOL 291)	4			X		S	
HPE 235	Motor Behavior	3						
HPE 370	Exercise Physiology (Spring Only)	4			X		S	
MATH 153	Calculus I (PREQ: MATH 146)	4						X
PHYS 130	Introductory Physics I	4	X		X	S	X	X
PHYS 131	Introductory Physics II (PREQ: PHYS 130)	4	X		X			X
ENVH 230	Intro to Environmental Health Science	3						
ENVH 260	Etiology of Infectious Disease (PREQ: CHEM 133) (COREQ: ENVH 261)	2						
ENVH 261	Etiology of Infectious Disease Lab (COREQ: ENVH 260)	1						
ENVH 270	Biological Basis of Disease	3						
PSY 320	Developmental Psychology I: Childhood	3	S			X		
PSY 322	Developmental Psychology II: Adolescence (PREQ: PSY 150)	3	S			X		
PSY 325	Developmental Psychology III: Adulthood (PREQ: PSY 150)	3	S			X		
PSY 470	Abnormal Psychology (PREQ: PSY 150)	3	S			X		

# 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](http://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/](http://CAATE.NET/SEARCH-FOR-ACCREDITED-PROGRAM/)

School of Health Sciences, Student Services Center: [SSC.WCU.EDU](http://SSC.WCU.EDU)

Other Resource: [WCU.EDU/LEARN/ACADEMIC-SERVICES/ADVISING-CENTER/PREPROFESSIONAL-ADVISING](http://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/](http://ACOTEONLINE.ORG/ALL-SCHOOLS/)

School of Health Sciences, Student Services Center: [SSC.WCU.EDU](http://SSC.WCU.EDU)

Other Resource: [WCU.EDU/LEARN/ACADEMIC-SERVICES/ADVISING-CENTER/PREPROFESSIONAL-ADVISING](http://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	Exercise Physiology (Options: ATTR 377, HPE 225, or HPE 370)
BIOL 141 – Principles of Biology II	
BIOL 291 – Human Anatomy & Physiology I	MATH 170 – Applied Statistics
BIOL 292 – Human Anatomy & Physiology II	PHYS 130 – Introductory Physics I
CHEM 139 – General Chemistry I	PHYS 131 – Introductory Physics II
CHEM 140 – General Chemistry II	PSY 150 – General Psychology

Visit [PT.WCU.EDU](http://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](http://PTCASDIRECTORY.APTA.ORG)

School of Health Sciences, Student Services Center: [SSC.WCU.EDU](http://SSC.WCU.EDU)

Other Resource: [WCU.EDU/LEARN/ACADEMIC-SERVICES/ADVISING-CENTER/PREPROFESSIONAL-ADVISING](http://WCU.EDU/LEARN/ACADEMIC-SERVICES/ADVISING-CENTER/PREPROFESSIONAL-ADVISING)

## 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](https://ARC-PA.ORG/ACCREDITATION/ACCREDITED-PROGRAMS)

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)

# 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](https://www.acpe-accredit.org/accredited-programs-by-state)

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

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