



Exercise Science, Bachelor of Science  
Student Handbook  
2023-2024 Academic Year

## What is Exercise Science?

Exercise Science is a discipline that describes and assesses the acute and chronic effects of physical activity and exercise on the human body. In this program, students will acquire the theoretical knowledge and the practical skills to evaluate, prescribe, and instruct both individual and group exercise for those who are apparently healthy and those with controlled diseases.

## Exercise Science at North Carolina Wesleyan University

The Exercise Science program at NCWU is only one of four programs in the state of NC and one of only 99 in the nation to be accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). In the most recent program outcome measure for the 2022-2023 academic year, the graduation rate in the EXS Program was 94% and the graduate satisfaction rate, for the sixth year in a row was 100%. With the help of the Health and Movement Science Club, NCWU is recognized as an Exercise is Medicine (EIM) campus.

### *Program Mission*

The Exercise Science program's mission is to prepare students for future employment in the fitness, health, & human performance industries. Students enrolled in the exercise science major will acquire the theoretical knowledge and the practical skills to evaluate, prescribe, and instruct both individual and group exercise for those who are apparently healthy and those with controlled disease. Students who complete the Exercise Science program are academically prepared to pursue National Commission for Certifying Agencies (NCCA) accredited certifications from leading organizations such as the American College of Sports Medicine (ACSM), American Council on Exercise (ACE), National Academy of Sports Medicine (NASM) and National Council on Strength and Fitness (NCSF). With additional science classes, students in the Exercise Science program will have the foundational knowledge and skills to prepare them for graduate study in various allied health disciplines.

### *Program Goals*

1. Prepare students to pursue various health-related careers in university, corporate, commercial, hospital, and community settings.

2. Prepare students to enter the fitness industry. This may include testing and prescribing exercise for specific age groups such as elderly, children and adolescences as well as apparently healthy and those with controlled disease.
3. Prepare student to pursue NCCA accredited certifications as ACSM Certified Exercise Physiologist (ACSM EP-C) and other certifications offered by leading organizations such as ACE, NASM and NCSF.
4. Prepares students who are interested in post-graduate study in Exercise Sciences and serve as an option for students interested in completing the prerequisites for admission into a variety of professional programs such as physical therapy, occupational therapy, athletic training, etc.

### Career options for those with an Exercise Science Degree

- Personal Trainer
- Group Exercise Instructor
- Biomechanist
- Cardiopulmonary Rehabilitation Specialist
- Corporate Fitness/Wellness Director
- Exercise Physiologist
- Strength and Conditioning Coach and related careers
  - Performance and Sport Scientist
  - Tactical Strength & Conditioning Facilitator
- Attend Graduate School
  - Graduate Degree in Exercise Science/Physiology, Kinesiology, Biomechanics and Movement Science
- An Exercise Science degree may be used as a stepping stone for graduate education in the pursuit of the following occupations:
  - Athletic Trainer
  - Medical Doctor
  - Occupational Therapist
  - Physical Therapist
  - Physician Assistant

## Admission Criteria in the Exercise Science Program

Students may declare Exercise Science as their major at any time during their freshman and sophomore years but must be officially admitted into the Exercise Science Program. Students must meet all of the following minimum academic requirements to be admitted into the Exercise Science Program.

1. Cumulative GPA of 2.5 or better in all college coursework
  2. Completion of 56 semester hours and
  3. Successful completion (grade of C- or better) in all the following courses:
    - a. EXS 190, EXS 214, BIO 231, BIO 232, EXS 315, EXS 318, EXS 324, and EXS 325
- Student admission into the Exercise Science program is determined by the Exercise Science Program Director, typically at the end of the fall semester of the student's junior year. Students who have not met all of the Exercise Science admissions requirements cannot remain in the Exercise Science program and must change their major.
    - With proper justification from a student, and following a consultation with the Exercise Science Program Director, in addition to unanimous agreement from all full-time Exercise Science program faculty members, some of the admissions, but not graduation, requirements mentioned above may be temporarily waived.



## Exercise Science Degree Requirements

- Wesleyan Core Requirements-44 Semester Hours
  - Foundations
    - First Year Requirement
      - COL 103-1 Semester Hour
    - Critical Thinking and Writing
      - English Composition-6 Semester Hours
    - Analytical Reasoning
      - Mathematics-3 Semester Hours
    - Religious Foundations
      - Religion-3 Semester Hours
    - Lifetime Health
      - EXS 100-2 Semester Hours
  - Explorations
    - Artistic & Interpretive Inquiries
      - Literature-3 semester hours
      - Art, Music or Entertainment and Theatre-3 Semester Hours
    - Civic Engagement & Social Justice
      - Communication, History, Criminal Justice or Political Science-6 Semester Hours
    - Studies in Human Behavior
      - Economic, Psychology, or Sociology-3 Semester Hours
    - Global Perspective and Ethics
      - International Studies--3 Semester Hours
      - Ethics-3 Semester Hours
    - Natural Science Investigations
      - Biology with Lab-4 Semester Hours
      - Physics, Earth Science or Chemistry with Lab-4 Semester Hours
- Exercise Science Major Requirements-62 Semester Hours
  - Non-Exercise Science Courses
    - BIO 231 - Anatomy and Physiology I-4 Semester Hours
    - BIO 232 - Anatomy and Physiology II-4 Semester Hours
    - CHM 111 - General Chemistry I-3 Semester Hours
    - CHM 112 - General Chemistry I-Laboratory 1 Semester Hours

- NTR 300 - Basic Nutrition-3 Semester Hours
- MAT 113 - College Algebra-3 Semester Hours
- or
- MAT 115 – Trigonometry-3 Semester Hours
- or
- MAT 121 - Calculus I-4 Semester Hours
- Exercise Science Courses
  - EXS 190 - Introduction to Exercise Science-2 Semester Hours
  - EXS 214 - Foundations in Wellness and Personal Training-3 Semester Hours
  - EXS 235 - First Aid and CPR-2 Semester Hours
  - EXS 305 - Health Promotion and Behavior Changes-3 Semester Hours
  - EXS 315 - Nutrition and Human Performance-3 Semester Hours
  - EXS 318 - Kinesiology and Biomechanics-3 Semester Hours
  - EXS 324 - Exercise Physiology-3 Semester Hours
  - EXS 325 - Techniques in Evaluating Fitness-3 Semester Hours
  - EXS 345 - Research and Statistics in Exercise Science-3 Semester Hours
  - EXS 351 - Principles of Athletic Training-3 Semester Hours
  - EXS 380 - Junior Seminar Exercise Science-1 Semester Hours
  - EXS 430 - Strength and Conditioning-3 Semester Hours
  - EXS 425 - Advanced Techniques in Evaluating Fitness-3 Semester Hours
  - EXS 450 - Clinical Exercise Physiology I-3 Semester Hours
  - EXS 460 - Clinical Exercise Physiology II-3 Semester Hours
  - EXS 480 – Practicum-3 Semester Hours
  - EXS 481 – Internship-4 Semester Hours
- Electives- 14 Semester Hours

## Suggested Course Rotation for the Exercise Science Degree

FALL FRESHMAN YEAR		
DEPT	COURSE #	COURSE NAME
COL	COL 103	Wesleyan Transition
MAT	113, 115, or 121	Algebra
ENG	111	Writing I
EXS	100	Fitness & Wellness
BIO	101	Life Science
BIO	102	Life Science Lab
INT. STUDIES	Various	Various
SPRING FRESHMAN YEAR		
DEPT	COURSE #	COURSE NAME
ECO/PSY/SOC	Various	Various
ENG	112	Writing II
CHM	111	General Chemistry
CHM	112	General Chemistry Lab
EXS	190	Introduction to Exercise Science
ELECTIVE (3)		

FALL SOPHOMORE YEAR		
DEPT	COURSE #	COURSE NAME
REL	Various	Various
ENG LIT.	Various	Various
EXS	214	Foundations in Wellness and Personal Training
BIO	231	Anatomy and Physiology I
BIO	231L	Anatomy and Physiology I Lab
EXS	235	First Aid and CPR
SPRING SOPHOMORE YEAR		
DEPT	COURSE #	COURSE NAME
NTR	300	Nutrition
BIO	232	Anatomy and Physiology II
BIO	232L	Anatomy and Physiology II
COM/HIS/JUS/POL	Various	Various
ART/MUS/ENT/THR	Various	Various

FALL JUNIOR YEAR		
DEPT	COURSE #	COURSE NAME
EXS	324	Exercise Physiology
EXS	325	Techniques in Evaluating Fitness
EXS	315	Nutrition and Human Performance
EXS	318	Kinesiology and Biomechanics
EXS	345	Research and Statistics in Exercise Science
SPRING JUNIOR YEAR		
DEPT	COURSE #	COURSE NAME
EXS	430	Strength and Conditioning
EXS	425	Advanced Techniques in Evaluating Fitness
EXS	351	Principles of Athletic Training
EXS	305	Health Promotion and Behavior Change
EXS	380	Junior Seminar

FALL SENIOR YEAR		
DEPT	COURSE #	COURSE NAME
EXS	450	Clinical Exercise Physiology I
EXS	480	Practicum
Ethics	Various	Various
ELECTIVES (3)		
SPRING SENIOR YEAR		
DEPT	COURSE #	COURSE NAME
EXS	460	Clinical Exercise Physiology II
EXS	481	Internship
ELECTIVES (7)		



## Exercise Science Course Description

### **EXS 190 -Introduction to Exercise Science-2 Semester Hours**

A course designed to help the student define professional goals and assess personal strengths and weaknesses in light of competencies deemed essential for an exercise science career. This course is an overview of professions in the field of exercise science. Objectives include describing various aspects of careers, professional certification and involvement, determining requirements for advanced study and learning the necessary coursework required for a variety of career opportunities.

### **EXS 214 - Foundations in Wellness and Personal Training-3 Semester Hours**

Prerequisite: Sophomore Status

This course is intended to introduce foundational concepts in Exercise Science. The course will examine strength, speed, cardiovascular and flexibility training through the use of foundational concepts related to physiology, anatomy, kinesiology and psychology. Students will learn introductory techniques for appropriate exercise program design, safe exercise technique and the ways to assess physical improvement in clients.

### **EXS 235 - First Aid and CPR-2 Semester Hours**

An investigation of the procedures and practical application of first aid treatment compatible with a typical educational system. This course will be designed to prepare the potential teacher to meet the everyday situations which might arise.

### **EXS 305 - Health Promotion and Behavior Changes-3 Semester Hours**

Explores methods appropriate to the promotion and implementation of health/wellness programs in the hospital, community and corporate settings. Students use various models to assess needs, define goals and objectives, implement programs and evaluate success/failure at both the programmatic and participant level.

### **EXS 315 - Nutrition and Human Performance-3 Semester Hours**

Prerequisite: NTR 300

Study of the application of principles of nutrition to exercise and sports performance. Importance of nutrition in the training programs of athletes and physically active individuals. Application of nutrition and exercise to diseases of inactivity such as obesity, hypertension, diabetes, CHD and osteoporosis.

### **EXS 318 - Kinesiology and Biomechanics-3 Semester Hours**

Prerequisite: Grade of C- or better in BIO 231 or BIO 232 or EXS 214

Analysis of the anatomical, mechanical, neurophysiological and functional aspects of human movement.

### **EXS 324 - Exercise Physiology-3 Semester Hours**

Prerequisite: Grade of C- or better in BIO 231 or BIO 232 or EXS 214

The functioning of the systems in the human body as the body meets the stress of the physical demands placed upon it.

### **EXS 325 - Techniques in Evaluating Fitness-3 Semester Hours**

Prerequisite: MAT 113 and Grade of C- or better in EXS 214

Laboratory techniques, procedures and protocols and exercise prescription. Designed to develop skills in using bicycle ergometers, treadmills, skin fold calipers, strength dynamometers and other fitness assessment equipment.

### **EXS 345 - Research and Statistics in Exercise Science-3 Semester Hours**

Prerequisite: Grade of C- or better in EXS 214

This course introduces the design and application of research methodologies in exercise and sport science. This course will provide students with a comprehensive overview of the research process, including but not limited to developing a problem, writing a literature review, writing an introduction, formulating the method, examining useful statistic techniques, data collection, summarizing the results and developing a discussion. The student will formulate an original research project that will culminate in the collection of pilot data and analysis of results.

### **EXS 351 - Principles of Athletic Training-3 Semester Hours**

Prerequisite: Grade of C- or better in EXS 214 or EXS 324

Development of the necessary knowledge and skills to prevent, recognize and manage athletic injuries. Practical application in taping and bandaging.

### **EXS 380 - Junior Seminar Exercise Science-1 Semester Hours**

Course provides an opportunity for junior-level Exercise Science students to prepare for practicum experiences and transition to professional practice or graduate school. Preparation for professional certification examinations and post-graduate professional development will be examined.

### **EXS 430 - Strength and Conditioning-3 Semester Hours**

Prerequisite: Grade of C- or better in EXS 214 or EXS 324

Presents concepts, theories, techniques and research related to designing, implementing and evaluating safe and effective strength, training and conditioning programs.

### **EXS 425 - Advanced Techniques in Evaluating Fitness-3 Semester Hours**

Prerequisite: EXS 324 and EXS 325

This course is designed to introduce students to advanced techniques for evaluating fitness in exercise physiology. The course will provide conceptual understanding and practical application for various techniques used in the evaluation of athletic performance and disease conditions.

### **EXS 450 - Clinical Exercise Physiology I-3 Semester Hours**

Prerequisite: Grade of C- or better in EXS 214 or EXS 324

The course is designed to provide the students with current information concerning exercise testing and prescription of apparently healthy and special populations. Additionally, the physiology and pathophysiology of various vascular and pulmonary disease processes along with their implications on the exercise testing and prescription will also be presented.

### **EXS 460 - Clinical Exercise Physiology II-3 Semester Hours**

Prerequisite: Grade of C- or better in EXS 214 or EXS 324

The course is designed to provide the student with a basic understanding of the physiology and pathophysiology of various endocrinology and metabolic orthopedic and selected neuromuscular disorders. Information regarding exercise prescription for these populations will also be presented.

### **EXS 480 – Practicum-3 Semester Hours**

Prerequisite: EXS 380 or Instructor Permission

Students spend approximately 150 hours of field experience during the course of the semester working on campus in the area of personal training and strength and conditioning. If warranted, students will be allowed to work off campus in the areas of employee/corporate fitness, older adults' fitness and/or physical therapy. While involved in off campus experience, students are expected to shadow, observe and take on limited responsibilities in agreement with the field supervisor.

## **EXS 481 – Internship-4 Semester Hours**

Prerequisite: EXS 380 or Instructor Permission

Students spend approximately 200 hours of field experience during the course of the semester working off campus in the areas of cardiopulmonary rehabilitation, employee/corporate fitness, older adults' fitness, strength and conditioning and/or physical therapy. While involved in the off-campus experience, students are expected to use information from all previous coursework and take an active role in the work requirements in agreement with the field supervisor.

### Health and Movement Science Club

The purpose of the Health & Movement Science Club is to provide students of Exercise Science an opportunity to establish a connection between NCWU and the community of Rocky Mount through fitness & wellness events. This will be achieved by promoting social, academic and professional relationships both on and off campus.



## Exercise Science Program Faculty

Meir Magal, Ph.D., ACSM-CEP, NSCA-CSCS, FACSM  
Program Director and Professor of Exercise Science  
Chair, School of Mathematics and Sciences  
mmagal@ncwu.edu  
1-252-985-5171

Tim Dornemann Ed.D., CES, PES, CSCS, OS Pro  
Associate Professor of Exercise Science  
TDornemann@ncwu.edu  
1-252-985-5321

Vanessa Batchelor, MS, NSCA-CSCS, USA-W L1  
Assistant Women's Soccer Coach and Visiting Instructor of Exercise Science  
VBatchelor@ncwu.edu  
1-252-985-5390

Shannon K. Crowley, Ph.D.  
Associate Professor of Public Health  
Director of the Master of Public Health (MPH) Program  
Program Coordinator, Health Promotion  
scrowley@ncwu.edu  
1-252-985-5225