

## Program Overview: Bachelor of Science, Exercise Science



### About This Major . . .

Students enrolled in this major should have a strong interest in the sciences as this program applies science to human function. The student will begin studies with science courses such as physics, general chemistry, and human anatomy & physiology. Continued studies will include courses such as: exercise physiology, anatomical kinesiology, biomechanics, physical activity and aging, and sports nutrition, among other subject areas. This major is designed to prepare students for professional and graduate programs such as: physical therapy, physician's assistant, occupational therapy, and exercise physiology.

The Monfort Family Human Performance Lab plays an important educational role for students in this program as it provides an excellent resource for supplementary lab experiences, for student research projects and for student internships. The physiology and biomechanics instrumentation of the lab is state-of-the-art. In their lab classes, students learn to use the major instrumentation and later can apply their knowledge with semester long projects which use these capabilities to explore human performance with rigorous measurement. Each year, several of the student research projects are presented at regional and national conferences. In addition, the exercise science student club functions throughout each year to enhance student participation in conferences and preparation for graduate or professional school.

**All CMU baccalaureate graduates are expected to demonstrate proficiency in critical thinking, communication fluency, quantitative fluency, and specialized knowledge/applied learning.**

In addition to these campus-wide student learning outcomes, graduates of this major will be able to:

1. Evaluate the functions of the individual body systems. (Specialized Knowledge)
  - Example: Muscle agonist/antagonist requirements are evaluated for human locomotion.
2. Identify risk factors associated with chronic disease. (Specialized Knowledge)
  - Example: Students formulate written critiques on scientific articles.
3. Identify the scope and definitions of health, fitness, and human performance with the ability to analyze the data critically. (Applied Learning, Quantitative Fluency)
  - Example: Students are able to conduct fitness and nutritional assessments, analyze human performance data, and write up an exercise prescription.
4. Describe procedures and/or statistical analyses for physiological assessments. (Quantitative Fluency)
  - Example: Students are able to conduct laboratory assessments, analyze physiological data, and provide written results.
5. Apply biomechanical principles to movement and be able to communicate and formulate conclusions about the results. (Critical Thinking)
  - Example: Students measure runner stride characteristics from high speed video, evaluate changes with running speed, and communicate patterns graphically.
6. Demonstrate the ability to clearly communicate specialized knowledge. (Communication Fluency)
  - Example: Students immerse themselves in semester length research projects and present their results at local, regional, and/or national conferences.

### Program Highlights:

#### Club

The Exercise Physiology Research Club (EPRC) functions throughout each year to enhance student participation in conferences and preparation for graduate or professional school. Students involved in EPRC participate in research projects, attend conferences, and present at local, state, regional, national and international conferences.

#### Internships

Students are given the opportunity to participate in various internships including placements at our human performance lab, physical therapy and occupational therapy clinics, hospitals, rehabilitation centers, health departments, and various health related organizations.

#### Careers

Graduates are currently working in many positions such as: physical therapists, occupational therapists, physician's assistants, exercise physiologists, personal trainers, fire department fitness trainers, strength and conditioning coaches, and county health department employees.

#### Graduate School

We currently have students pursuing graduate degrees in Occupational Therapy, Physical Therapy, Nutrition Science, and Exercise Physiology.

## Program Requirements

A student must follow CMU graduation requirements by completing 120 semester credit hours, including 40 credits of coursework at the 300+ level. See the “Undergraduate Graduation Requirements” in the catalog for additional graduation information. Students should work closely with a faculty advisor when selecting and scheduling courses prior to registration. In general, CMU’s programs of study are based on two curriculum groups:

### 1. Essential Learning

CMU’s Essential Learning program provides the foundation of skills and information that cuts across all fields of study and the support for advanced concepts that students will later encounter in their majors. Before moving into work at the 300+ level, students complete the Maverick Milestone and its co-requirement, Essential Speech. This pair of courses is a capstone experience where students integrate what they have learned from their foundation courses by making connections among diverse areas of knowledge. The capstone is also an opportunity for students to work with disparate ideas, a critical skill expected of all CMU graduates that will aid them in solving the complex and unscripted problems they will encounter in their personal, professional, and civic lives.

### 2. What You Will Study in This Major. . .

#### Foundational Courses

- General Chemistry I and Lab
- General Chemistry II and Lab
- Probability and Statistics
- Human Anatomy and Physiology and Lab
- First Aid and CPR/AED for Health Care Provider

#### Exercise Science Major Requirements

- History and Philosophy of Sport and Physical Education
- Applications of Physical Fitness and Exercise Prescription
- Human Nutrition
- Health and Fitness Assessment
- Physiology of Exercise and Lab
- Anatomical Kinesiology
- Biomechanics and Lab
- Advanced Strength and Conditioning OR
- Clinical Exercise Physiology and Advanced Exercise Prescription
- Sports Nutrition
- Physical Activity and Aging
- Senior Seminar
- Internship

#### Restricted Electives

Graduate or Professional Schools’ programs in Exercise Science, Physical Therapy (PT), Occupational Therapy (OT), and Physician Assistant (PA) often have their own unique prerequisites that are not part of the exercise science major requirements. For example, General Physics is required for most graduate physical therapy programs. Students need to check the prerequisites required for the specific schools for which they plan to apply for admission. Choices of restricted electives include:

- General Biology & Lab
- Organic Chemistry
- Biochemistry
- Medical Terminology
- Abnormal Psychology
- Cell Biology
- Trigonometry
- Calculus
- Microbiology
- Pathophysiology
- Gross and Developmental Human Anatomy
- General Physiology
- Therapeutic Interventions
- Advanced Strength and Conditioning
- Structural Research

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For more information about this major, go to: <http://www.coloradomesa.edu/kinesiology/degrees/index.html> or contact the Academic Department Head for Kinesiology, 242 Maverick Center, 970.248.1374.