The Master of Science in Science Education (MSSE) degree program is delivered primarily online with popular campus summer course offerings that utilize the diverse environment of Montana to teach scientific principles and provide models of field-based instruction. Courses are designed and offered across all science subjects to improve content knowledge and provide innovative teaching strategies. Unique characteristics make this program appealing to both traditional and non-traditional science educators.

ADMISSION

Applicants should have a bachelor's degree in science, science education, elementary/middle/secondary education, or a related area. Candidates should also have completed at least two years of successful science teaching in elementary, middle, high school, or any other appropriate informal educational setting (such as a museum, parks service, or community college). There is a 3.0 GPA minimum requirement; students below this minimum may attend as non-degree students to earn admission.

PROGRAM REQUIREMENTS

Thirty semester credits are required for the degree: 14 core education credits, 12 science credits (may be chosen from a broad selection of science coursework), and 4 elective credits (either science or education). Students typically will complete the degree in two or three years. The Graduate School allows up to six years to finish the degree.
Online Courses

**Biology**
- Anatomy & Physiology
- Biology of Riparian Zones & Wetlands
- Ecology & Conservation of the World's Marine Ecosystems
- Teaching Evolution
- Terrestrial Ecology of Plains & Prairies

**Chemistry & Biochemistry**
- Atoms First-Primer for AP/IB Chemistry
- Chemistry of the Environment - Water, Air, Earth
- Exploring Biochemistry
- Exploring Biochemistry II: Metabolism
- Exploring Chemistry
- Exploring Organic Chemistry
- Special Topics in Chemistry: Kinetics, Equilibrium, & Thermodynamics

**Civil Engineering**
- Snow & Avalanche Physics

**Earth Science**
- K-14 Earth System Science
- Fundamentals of Oceanography
- Geology of the Moon
- Historical Geology
- Understanding Climate Change
- Weather & Climate for Teachers

**Education**
- Assessment & Evaluation in Education
- Capstone Data Analysis

**Education cont.**
- Construction of Curriculum
- Contemporary Issues in Science Education
- Foundations of Action Research
- History of Spaceflight & Space Technology
- Implementing Action Research
- Inquiry through Science & Engineering Practices
- Integrating Literature into the Science Classroom
- Master Teaching Strategies
- Technology in the Science Classroom

**Health & Human Development**
- Nutrition for Fitness & Performance
- Teaching Adolescent Nutrition

**LRES**
- Streamside Science
- Twelve Principles of Soil Science
- Water Quality

**Microbiology**
- Environmental Microbiology
- Infection & Immunity
- Microbial Genetics
- Microbial Ecology
- Special Topics in Microbiology

**Plant Sciences**
- Biomimcry

Campus Courses

**Biology**
- Understanding & Managing Animal Biodiversity
- Birds of Prey
- Wildlife Ecology
- Alpine Ecology
- Advanced Ecology
- Land Use Issues
- Ecology of Trout Streams
- Examining Life in Extreme Environments

**Chemistry and Biochemistry**
- Science Lab Safety & Risk Management
- Critical Concepts in Chemistry

**Computer Science**
- Computer Science in the Classroom: Computational Thinking for Teachers
- Joy & Beauty of Data

**Earth Science**
- Dinosaur Paleontology I & II
- Geology of Glacier National Park
- Geology Seminar
- Geology of the Yellowstone Volcanic Center
- Northern Rocky Mountain Geology

**Education**
- Symposium in Science Education

**Electrical Engineering**
- Solar Cell Basics for Science Teachers

**LRES**
- Thermal Biology in Yellowstone National Park
- Ecology of Invasive Plants
- Lake Ecology

**Microbiology**
- Cell & Molecular Biology
- Project Microbe

**Plant Sciences**
- Flowering Plants of Northern Rocky Mountains
- Plants, People, & Health

**Physics**
- Physics by Inquiry I, II & III
- Teaching Electronics & Magnetism
- Teaching Mechanics