School of Biological Sciences and School of Mathematical Sciences Latest Certificates

Biology Certificates

- Botany Certificate
    - The certificate program in Botany prepares students for careers in resource management fields that require basic botanical knowledge. Many federal and state resource management agencies such as the U.S. Forest Service, Bureau of Land Management, National Park Service, and Colorado Parks and Wildlife require that applicants have a minimum of 9 credits of botany coursework. This certificate provides an understanding of plant identification, plant taxonomy, and the role of plants in ecological communities, providing graduates with comprehensive botanical knowledge.
- Wildlife Certificate
    - The certificate program in Wildlife prepares students for careers in resource management fields that require basic wildlife knowledge. Many federal and state resource management agencies such as the U.S. Forest Service, Bureau of Land Management, National Park Service, and Colorado Parks and Wildlife require that applicants have a minimum of 12 credits of wildlife-focused coursework. This certificate provides an understanding of wildlife diversity and distribution, management and conservation of wildlife species, and the role of wildlife in ecological communities, providing graduates with comprehensive wildlife knowledge.
- Zoology Certificate
    - The certificate program in Zoology prepares students for careers in resource management fields that require basic animal knowledge. Many federal and state resource management agencies such as the U.S. Forest Service, Bureau of Land Management, National Park Service, and Colorado Parks and Wildlife require that applicants have a minimum of 9 credits of zoology coursework. This certificate provides an understanding of animal identification, animal taxonomy, and the role of animals in ecological communities, providing graduates with comprehensive zoology knowledge.

Each of the three undergraduate certificates embedded in the bachelor's degree in biological sciences bundles together coursework that is required, either within or in addition to a bachelor's degree, to apply for many jobs with the Bureau of Land Management, US Forest Service, National Park Service, US Fish and Wildlife Service, and Colorado Parks and Wildlife (including State Parks). Specific jobs require applicants to verify they have at least nine credit hours of dedicated coursework in Botany, Ecology, and/or Wildlife. While many biology students already choose the courses that will now be packaged in these certificates, the certificates make the qualifications immediately visible to employers and help students choose biology electives aligned with specific career

pathways to increase the marketability of their degree. Job postings in these areas range from 25 (fall) to 100+ (spring) and are often available in multiple regions of the state and across the nation.

Math Certificates

- Computer Programming Certificate
    - o The Computer Programming Certificate provides undergraduate students and others an opportunity to develop skills in computer programming as a stackable certificate toward a BS in Computer Science or Software Engineering or as a supplement to another degree. Courses focus on practical and theoretical aspects of computer programming using multiple languages, including Python and Java.
- Data Analytics Certificate
    - o The Data Analytics Certificate supports undergraduate students and others to develop skills in data analytics as a stackable certificate toward a BS in Statistics or as a supplement to another degree. Courses focus on hands-on experiences using analytical methods, tools, and techniques to process and extract information from data sets students will encounter in their major coursework and professional lives.

The two undergraduate certificates embedded in the bachelor's degree in computer science and statistics similarly enable students to highlight specific programming and data analysis skills embedded within their degree. Those two degrees were first offered this academic year, with little time for marketing, and enrolled seventeen and thirteen students, respectively. However, these certificates may also be embedded within the university-wide electives area of any other undergraduate degree program, providing a significant additional career qualification to almost any student. For example, a sociology or political science major interested in a public policy 2 career might fit the Data Analytics certificate inside their university-wide electives to strengthen the marketability of their degree. According to research by the International Data Group (2023), 93% of organizations have adopted or plan to adopt a digital-first business strategy. Similarly, a computer information systems or pure mathematics major might want to integrate additional evidence of Computer Programming skills by incorporating certificate coursework into their elective options. According to the Bureau of Labor Statistics estimates employment of computer and information research scientists, of which programming is a significant component, is projected to grow 21% from 2021 to 2031. The median annual wage for these jobs in 2021 was $131,490. About 3,300 openings for computer and information research scientists are projected annually over the coming decade, and the primary qualification is programming skills, regardless of the bachelor's degree program.

More information can be found at our website:
https://www.unco.edu/natural-health-sciences/