

Request to Establish New Academic Program in Arizona

Please complete all fields. Boxes may be expanded to accommodate longer responses. Clarifying field descriptions can be found below. Should you have any questions or concerns, please email Helen Baxendale, Director of Academic Affairs and Policy at helen.baxendale@azregents.edu

University: University of Arizona

Name of Proposed Academic Program: Bachelor of Science in Science
Academic Department: College of Science - SCNC
Geographic Site: Arizona Online
Instructional Modality: Online / ONLN Campus
Total Credit Hours: 120
Proposed Inception Term: Fall 2023
<p>Brief Program Description:</p> <p>The B.S. in Science meets the needs of students in our AZ Online programs who wish to pair their degrees with basic training and skills in STEM. This interdisciplinary degree program emphasizing biological and physical sciences will enhance job opportunities for students with a strong interest in science who do not anticipate working as a professional scientist, but instead intend to use their knowledge in an intersectional field such as education, policy, law, or education. It will also provide basic STEM background for medical and health services managers, medical assistants, natural sciences managers, and entry level science technicians. This degree will prepare students with a foundation in science that will enable them to drive social, cultural, and economic change. This proposed degree aligns with the UArizona strategic pillars:</p> <ol style="list-style-type: none"> 1. Wildcat Journey, preparing students with the skills and mindsets to lead in the 4th Industrial Economy 2. Arizona Advantage, advancing our land grant mission to drive social, cultural, and economic impact <p>The proposed degree will add value to degrees in such fields as education, law, journalism, business, development, economics, management, humanities, etc.) so students in these fields are better prepared to apply their knowledge to the challenges of today. The degree thus prepares students with a foundation in science that will enable them to drive social, cultural, and economic change. Students will obtain an appreciation for scientific knowledge, laying a foundation for critical thinking. Additionally, understanding of science factors fundamentally into the background and mindset necessary for students to address challenges of the 4th Industrial Economy.</p>
<p>Learning Outcomes and Assessment Plan:</p> <p>Learning Outcome #1: Demonstrate foundational knowledge of the discipline (Basic Knowledge).</p> <p>Concepts: core knowledge of the discipline</p>

Competencies: Students will demonstrate understanding of the theories, fundamental principles, and concepts of the discipline.

Assessment Methods: This outcome will be assessed in participation in online discussions, exams, assigned readings, and discussion questions.

Measures: Direct measures include evaluation of homework, exams, papers, reports, or other student projects. Indirect measures will include student self-assessments via surveys and reflections

Learning Outcome #2: Apply modern and/or relevant laboratory skills and protocols to collect and analyze data (Laboratory Skills).

Concepts: laboratory skills and protocols for collecting and analyzing data

Competencies: Students will use quantitative skills to 1) collect data using the tools of the discipline and 2) analyze the data.

Assessment Methods: This outcome will be assessed across several different laboratories the student takes.

Measures: Direct measures include Instructor grading of lab reports. Indirect measures will include student self-assessments via surveys and reflections

Learning Outcome #3: Communicate knowledge, ideas, and reasoning clearly, effectively, and objectively in written and oral forms (Communication Skills).

Concepts: communicate effectively, reason clearly, write and communicate objectively

Competencies: Students will demonstrate their knowledge through oral and written work

Assessment Methods: This outcome will be assessed using oral presentations and/or written papers in the capstone course

Measures: Direct measures include instructor grading of written and oral work. Indirect measures will include student self-assessments via surveys and reflections

Learning Outcome #4: Interpret data using scientific reasoning and foundational disciplinary knowledge through project-based activities and/or research projects (Scientific Reasoning and Research).

Concepts: basic experimental manipulations, analysis of data, implications of the experimental outcomes

Competencies: Students will demonstrate their ability to apply experimental methods and interpret data.

Assessment Methods: This outcome will be assessed in participation in online discussions, exams, lab reports, and discussion questions.

Measures: Direct measures include evaluation of student written work, project-based activities, or research projects. Indirect measures will include student self-assessments via surveys and reflections

Learning Outcome #5: Demonstrate teamwork skills by collaborating and participating with peers to produce various deliverables (e.g., data collection, data analysis, conclusions) (Teamwork).

Concepts: collaborative work, mutual respect, and shared values.

Competencies: Students will demonstrate the ability to work effectively in virtual teams by demonstrating mastery of professional skills including content knowledge, self-reflection, project-management, and teamwork.

Assessment Methods: This outcome will be assessed in classroom interaction, homework, or group projects.

Measures: Direct measures include grades of student contribution to a project. Indirect measures will include student self-assessments via surveys and reflections

Assessment Measure	Sources of Evidence	Data Collection Point(s)
Job Placement Statistics	Student / Alumni Survey	At graduation annually (senior exit survey)
SCI 401 Senior Capstone	Percentage of students meeting the acceptable target for each learning objective measured using class assignments, reflections, presentations and reports.	Annually
Senior Exit Survey (will measure percentage of students rating each learning outcome at "Agree" or "Strongly Agree")	Student Survey	At graduation annually

Projected Enrollment for the First Three Years:

	1 st Year	2 nd Year	3 rd Year
Number of Students	30	60	90

Evidence of Market Demand:

The data are from a Lightcast Q3 2022 Data Set provided by AZ Online and a Burning Glass report provided by Curricular Affairs. For students based in the U.S., the marketing report for CIP code 30.010 lists job growth expected over 10 years ranging from 3.89% (biological technicians) to 40.85% (medical and health services managers) with job growth expected for secondary school teachers (13.49%), medical assistants (21.14%), Industrial Production managers (11.17%) and natural sciences managers (5.14%) also. Additionally, Arizona Global, who will eventually be added as a campus has expressed market demand for this degree.

Similar Programs Offered at Arizona Public Universities:

NAU offers a secondary education degree in General Science, Bachelor of Science in Education requiring students to take 53 units in STEM preparation courses and 33 units in teacher preparation courses. The main similarity with the proposed program is in providing students with STEM instruction in 100- and 200-level (introductory) STEM preparation courses. The main difference is that all the upper division electives in the NAU program focus entirely on teacher preparation. Thus, although students acquire introductory science knowledge in the program offered by NAU, they do not acquire much depth. In addition to a strong foundation of introductory science knowledge, students in our proposed BS in Science add significant breadth and depth through 8 upper division electives reflecting their specific interests in science.

Objection(s) Raised by Another Arizona Public University? YES NO

Has another Arizona public university lodged a written objection to the proposed program with the proposing university and the Board of Regents within seven days of receiving notice of the proposed program?

If Yes, Response to Objections:

Please provide details of how the proposing university has addressed the objection. If the objection remains unresolved, please explain why it is in the best interests of the university system and the state that the Board override it.

New Resources Required? (i.e. faculty and administrative positions; infrastructure, etc.):

The proposed BS in Science requires no additional faculty or infrastructure but will require an advisor for student support and a program manager to administer the program. The associate dean for undergraduate student success in the college of science will oversee hiring these personnel.

Plan to Request Program Fee/Differentiated Tuition? YES NO

Estimated Amount: N/A

Program Fee Justification: N/A

Specialized Accreditation? YES NO

Accreditor: N/A