Fall 2020 Course Descriptions as of 04/05/2020 08:14 PM

Information in Browse Course Catalog is subject to change. Information is term specific. Please refer to the appropriate term when searching for course content. Key to Course Descriptions may be found at: **http://rcs.registrar.arizona.edu/course_descriptions_key**.

Science (SCI)

SCI 195B: Freshman Colloquium: Arizona's Science, Engineering & Math Scholars Program (1 unit)
Description: SCI 195B is a requirement of the Arizona's Science, Engineering, and Math Scholars Program (ASEMS). The purpose of the ASEMS program is ensure AZ Assurance students' successful completion of a degree in a science, technology, engineering, or math field (STEM) with a strong GPA. The purpose of this course is to educate freshmen and sophomore STEM majors about strategies to successfully complete a STEM degree and various skills needed to work in a research lab. Students will make connections with various STEM resources and programs on campus and their peers (through preceptor-led discussions).
Grading basis: Student Option ABCDE/PF
Career: Undergraduate
Course Components: Colloquium Required
Course typically offered:
Main Campus: Fall, Spring

Recommendations and additional information: ASEMS students ONLY.

SCI 197A: Student Success Strategies (1 unit)
Description: This course combines class activities and discussions with out-of-class learning experiences and readings of articles and case studies. Discussion themes and activities focus on personal development; goal-setting; taking action; developing relationships with students, professors, and advisors; skill development; time management; and discovering and learning how to use support resources.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Workshop Required
Course typically offered:
Main Campus: Fall, Spring

Field trip: none
Freshman Colloquia: Freshman Colloquia
Success Course: Success Course

SCI 197C: Professionalism in STEM; Workshop for Arizona's Science, Engineering, and Math Scholars Program (1 unit)
Description: SCI 195C is an additional class students in the Arizona's Science, Engineering, and Math Scholars (ASEMS) program can take to further develop their professional and academic skills related to their pursuit of STEM degrees and careers. The purpose of the ASEMS program is to support STEM students in successfully completing STEM degrees with a strong GPA. This course will be focused on developing professional and academic skills related to STEM, including: applying for funding; understanding scientific literature and research; communicating personal and academic strengths; identifying career paths in STEM; and building an identity in STEM.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Workshop Required
Course typically offered:
Main Campus: Spring

Success Course: Success Course

SCI 201A: Creativity and Innovation, Storytelling and Changemaking (3 units)
Description: As we make the transition from the industrial to the innovation age, individuals, companies and even countries now see their competitiveness in terms of a deep-seated ability to create new sources of value. This course addresses the gap between the desire for innovation and opportunities to learn how "do" innovation, which is a complex phenomenon that blends disciplines and goes all the way from individual psychology to complex social dynamics. The curriculum is experiential and based on collaborative learning. This course links to purpose, exploits the value of digital technology, is founded on projects and culminating challenges, makes best use of in class time by flipping the classroom, provides access to a continuously updated knowledge base, and affords ample and diverse opportunities for feedback.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Lecture Required
Course typically offered:
Main Campus: Fall, Spring

SCI 203: Gen TED (3 units)
Description: Gen TED places cutting-edge science findings into a rich discussion about the role that science plays in society by asking students to critique thought provoking TED talks, UA College of Science Lecture Series presentations, and live talks from select UA faculty. The course's engaging and transformative discussions and writing activities have been designed to elevate students' ability to analyze, discuss and communicate ideas in science. The class will increase students' awareness of key discoveries that exist at the boundaries of science and technology and investigate how these discoveries can lead to improvements in our quality of life, and evoke controversy within our society.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Lecture Required
Course typically offered:
Main Campus: Spring

Recommendations and additional information: 2 courses from Tier One - Natural Sciences.
General Education: Tier 2 Natural Sciences

SCI 295C: Arizona's Science, Engineering, and Math Scholars Colloquium: Leadership in STEM (1 unit)
Description: SCI 295C is an additional class students in the Arizona's Science, Engineering, and Math Scholars (ASEMS) program can take to further develop their leadership and career skills related to their pursuit of STEM degrees and careers. The purpose of the ASEMS program is to support STEM students in successfully completing STEM degrees with a strong GPA. This course will be focused on developing professional and leadership skills related to STEM, including: communicating personal and professional strengths; problem-solving; networking; volunteering; presentation skills and public speaking.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Colloquium Required
Course typically offered:
Main Campus: Spring

SCI 297B: Research Readiness: Arizona's Science, Engineering, and Math Scholars Program (1 unit)
Description: SCI 295B is the second course of a two-course sequence and serves as a requirement for the Arizona's Science, Engineering, and Math Scholars Program (ASEMS). The purpose of the ASEMS program is ensure AZ Assurance students' successful completion of a degree in a science, technology, engineering, or mathematics field (STEM) with a strong GPA. The purpose of this course is to educate sophomore and junior STEM majors about strategies to successfully complete a STEM degree and various skills needed to work in a research lab. Students will develop these skills through shadowing of a graduate student, development of an eFolio, the development of on campus connections to professionals and programs in the STEM fields, and their peers (through preceptor-led discussions).
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Workshop Required
Repeatable: Course can be repeated a maximum of 2 times.
Course typically offered:
Main Campus: Fall, Spring

Recommendations and additional information: SCI 195B.

SCI 299: Independent Study (1 - 6 units)
Description: Qualified students working on an individual basis with professors who have agreed to supervise such work.
Grading basis: Alternative Grading: S, P, F
Career: Undergraduate
Course Components: Independent Study Required
Repeatable: Course can be repeated a maximum of 2 times.
Course typically offered:
Main Campus: Fall, Spring, Summer

Recommendations and additional information: Science majors only.

SCI 301: Introduction to the Orbital Perspective (3 units)
Description: What is it like learning to work with a diverse group of people living on the International Space Station? If fifteen nations could collaborate on one of the most ambitious, technologically complicated undertakings in history, surely we can apply that kind of cooperation and innovation toward creating a better world. In this course Ron Garan, Astronaut and former fighter pilot, will share his perspective on what it was like learning to work with a diverse group of people in an environment only a handful of human beings have ever known. But more importantly he will address how we can apply the orbital perspective here at home, embracing new partnerships and processes to promote peace and combat hunger, thirst, poverty, and environmental destruction. This course is a call to action for each of us to care for the most important space station of all: planet Earth. The course will also involve participation in the Earthrise-2068 project. Working with people from around the world, students will help craft a vision of our future in the year 2068. Students will help craft a crowdsource strategy for both the co-envisioned future of the world in 2068 and a roadmap to get there.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Lecture Required
Course typically offered:
Main Campus: Spring, Summer

SCI 391: Preceptorship (1 unit)
Description: The purpose of this course is to participate in service learning as both a teacher¿s aide and a peer mentor for freshman and sophomore students majoring in science, technology, engineering, or math fields. Students in this class will help the instructors with class presentations, leading discussions, recruiting speakers, and working with students outside of class in a mentor capacity. Students should also be currently affiliated with a research lab (but not required).
Grading basis: Pass/Fail
Career: Undergraduate
Course Components: Independent Study Required
Course typically offered:
Main Campus: Fall, Spring, Summer

Recommendations and additional information: ASEMS students ONLY.

SCI 397B: Entering Research 1 (1 unit)
Description: This 1-credit workshop course for undergraduate students is the first in a series designed to complement the beginning of an independent research experience. Students meet weekly to share their research experiences as they learn about the roles, responsibilities and relationships that make for a successful research experience. Throughout the semester, students gain the skills to draft a small research proposal and present it to the class.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Workshop Required
Course typically offered:
Main Campus: Fall

Honors Course: Honors Contract
Honors Course: Honors Contract

SCI 397C: Entering Research 2 (1 unit)
Description: This 1-credit workshop course is the second of a two-part series that begins with Entering Research, Part 1. This class meets weekly and is designed to enhance and support students' continuing research experience as they learn about science's role in society, science ethics and careers. There is also a strong focus on communicating science, the peer review process and presenting their results. Throughout the semester, students gain the skills to write a mini grant proposal and present it to the class.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Workshop Required
Course typically offered:
Main Campus: Spring

Honors Course: Honors Contract
Honors Course: Honors Contract

SCI 401: Science Communication (3 units)
Description: This course is designed to expose students in the natural sciences and other disciplines to the various forms and practices of science communication and to provide a solid foundation to communicate scientific research to audiences other than fellow scientists in the same field. Held in a seminar-style integrating lecture, presentations, in-class readings, discussions and hands-on activities, the course goes beyond science journalism, i.e. students will learn about opportunities in science communication in other capacities. This course will give students opportunities to practice telling science stories and publish them.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Lecture Required
Co-convened with: SCI 501
Course typically offered:
Main Campus: Fall

Recommendations and additional information: ENGL 102

SCI 491: Preceptorship (1 - 3 units)
Description: Specialized work on an individual basis, consisting of instruction and practice in actual service in a department, program, or discipline. Undergraduate preceptors will work as a team with the instructor(s) for courses such as ECOL 195M/SCI 195A/SCI 195B/SCI 295B to teach and mentor students enrolled in these courses. They will learn student-centered teaching techniques, effective communication skills both written and oral, and how to organize and execute a lesson plan while working in the classroom assisting their peers. Requires faculty member approval, preceptor application, and preceptor contract on file with the College of Science.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Independent Study Required
Repeatable: Course can be repeated a maximum of 12 times.
Course typically offered:
Main Campus: Fall, Spring, Summer

Recommendations and additional information: SCI 491 enrollment is done manually by Robin Rarick in the College of Science Advising Office Gould-Simpson room 1017 and requires a completed contract form which can be obtained from this office or from the instructor.

SCI 491H: Preceptorship (1 - 3 units)
Description: Specialized work on an individual basis, consisting of instruction and practice in actual service in a department, program, or discipline. Undergraduate preceptors will work as a team with the instructor(s) for courses such as ECOL 195M/SCI 195A/SCI 195B/SCI 295B to teach and mentor students enrolled in these courses. They will learn student-centered teaching techniques, effective communication skills both written and oral, and how to organize and execute a lesson plan while working in the classroom assisting their peers. Requires faculty member approval, preceptor application, and preceptor contract on file with the College of Science.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Independent Study Required
Repeatable: Course can be repeated a maximum of 12 times.
Course typically offered:
Main Campus: Fall, Spring, Summer

Recommendations and additional information: SCI 491H enrollment is done manually by the College of Science Advising Office and requires a completed contract form which can be obtained from this office or from the instructor.
Enrollment requirement: Student must be active in the Honors College.
Honors Course: Honors Course
Honors Course: Honors Course

SCI 492: Directed Research (1 - 6 units)
Description: Individual or small group research under the guidance of faculty affiliated with research centers in the College of Science. 45 hours of project work are required for each unit of credit.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Independent Study Required
Repeatable: Course can be repeated a maximum of 12 times.
Course typically offered:
Main Campus: Fall, Spring, Summer

Recommendations and additional information: Department consent required.

SCI 496B: Plant-Herbivore Interactions (1 - 3 units)
Description: This course involves on ecology and evolution of the interaction between plants and herbivores, focusing on insect herbivory. The format is a combination of lectures and student presentation and discussion of relevant topics, often in a small group setting. At the end of the course students should be able to be proficient about the main issues in the area as well as the relevant research techniques and methodologies. This course is available for graduate students and undergraduate students with some background in ecology, evolution, and entomology.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Seminar Required
Repeatable: Course can be repeated a maximum of 3 times.
Co-convened with: SCI 596B
Course typically offered:
Main Campus: Spring

Recommendations and additional information: It is recommended that students know some Ecology and Evolution.

-SA represents a Student Abroad & Student Exchange offering
-CC represents a Correspondence Course offering
May Be Offered Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

SCI 497A: Peer Advising (3 units)
Description: The Peer Advising experience in the College of Science is an educational, hands-on experience for exceptional College of Science students. Peer Advisors:o contribute to the retention efforts of STEM students in the College by assisting Academic Advisors in their support of students by engaging in activities with individual students, giving presentations, and leading small groups through specific topics such as academic skills and undergraduate research. o convey information about University policies, department opportunities, campus involvement, research and resources, academic success skills, as well as department expectations and procedures. o create and deliver helpful workshops to fellow undergraduate students o may offer some tutoring in select subjects o aid advisors during priority registration and with other advising serviceso train to become effective communicators and mentorso offer peer support and perspectiveo serve as informational resources to studentso may be assigned to a cohort of students depending on major or special interesto are not responsible for any student's academic program or degree requirements.Students interested in becoming a Peer Advisor must complete an online application https://docs.google.com/forms/d/1bC4zheD0Yx-EOsUF9iJSKq54Hv3MzZATB1xXcxPhuKQ/viewform?usp=send_form and undergo an in-person interview with members of the College of Science Academic Advising team in order to be selected. If selected, the student will be enrolled in SCI 497A and follow the course syllabus to earn credit for the experience. Class Hour Requirements: SCI 497A is offered for 3 units of credit, averaging 9 hours per week or fulfilling 135 hours of activity during the regular semester.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Workshop Required
Repeatable: Course can be repeated a maximum of 4 times.
Course typically offered:
Main Campus: Fall, Spring, Summer

Recommendations and additional information: To enroll, students must submit a Peer Advisor application to the College of Science, interview, and be accepted into the program. Once accepted, the College will manually enroll the Peer Advisor in SCI 497A.
Student Engagement Activity: Leadership
Student Engagement Competency: Professionalism

SCI 499: Independent Study (1 - 6 units)
Description: Qualified students working on an individual basis with professors who have agreed to supervise such work.
Grading basis: Alternative Grading: S, P, F
Career: Undergraduate
Course Components: Independent Study Required
Repeatable: Course can be repeated a maximum of 2 times.
Course typically offered:
Main Campus: Fall, Spring, Summer

Recommendations and additional information: Science majors only.

-SA represents a Student Abroad & Student Exchange offering
-CC represents a Correspondence Course offering
May Be Offered Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

SCI 500A: Technology, Entrepreneurship and Commercialization (3 units)
Description: This course will expose MBAs and other Graduate students to venture creation and technology commercialization. Students will form teams across all disciplines as well as utilizing UA IP. Teams will be exposed to entrepreneurship in the economy and the determinants of entrepreneurial activity. The course will delineate skills needed to start a new enterprise, division, or product/service line, to recognize economic opportunity and understand key requirements for a successful venture.
Grading basis: Regular Grades
Career: Graduate
Course Components: Lecture Required
Also offered as: CALS 500A, ENTR 500A, LAW 500A
Course typically offered:
Main Campus: Fall

Home department: McGuire Center for Entrepreneurship

SCI 501: Science Communication (3 units)
Description: This course is designed to expose students in the natural sciences and other disciplines to the various forms and practices of science communication and to provide a solid foundation to communicate scientific research to audiences other than fellow scientists in the same field. Held in a seminar-style integrating lecture, presentations, in-class readings, discussions and hands-on activities, the course goes beyond science journalism, i.e. students will learn about opportunities in science communication in other capacities. This course will give students opportunities to practice telling science stories and publish them. Students enrolled for 501 must produce a science feature story that meets the publication requirements for UANews. In addition, 500 level students must prepare an in-class presentation on a topic of their choice. Topics will be presented and discussed at the beginning of the semester.
Grading basis: Regular Grades
Career: Graduate
Course Components: Lecture Required
Co-convened with: SCI 401
Course typically offered:
Main Campus: Fall

SCI 596B: Plant-Herbivore Interactions (1 - 3 units)
Description: The subject matter is the ecology and evolution of the interaction between plants and herbivores, focusing on insect herbivory. The format is a combination of lectures and student presentation and discussion of relevant topics, often in a small group setting. At the end of the course students should be able to be proficient about the main issues in the area as well as the relevant research techniques and methodologies. This course is available for graduate students and undergraduate students with some background in ecology, evolution, and entomology. Graduate students will do an additional presentation and subsequent discussion.
Grading basis: Regular Grades
Career: Graduate
Course Components: Seminar Required
Repeatable: Course can be repeated a maximum of 3 times.
Co-convened with: SCI 496B
Course typically offered:
Main Campus: Spring

Recommendations and additional information: It is recommended that students know some Ecology and Evolution.

SCI 596S: Selected Topics for Science Educators (1 - 2 units)
Description: The course is structured as a seminar with discussion, lectures and activities for the K-12 classroom. The course is focused around a speaker series offered through the College of Science, which is focused on a different scientific theme each year. Class meets for three hours once per week in the evening. During the first hour, students participate in an activity for teaching science in a K-12 classroom or a presentation on a K-12 outreach opportunity at the UA. During the second hour, a weekly College of Science theme semester seminar is attended. The third hour of class, the seminar and its application to the classroom is discussed. Activities and discussion will focus on teaching science in high school or middle school. This course is structured for science teachers at the 6th-12th grade level, but K-12 teachers at all levels are invited to participate. Pre-service teachers who are not yet certified may take the course for undergraduate credit. Graduate-level requirements include writing a final paper on one of the semester's topics.
Grading basis: Regular Grades
Career: Graduate
Course Components: Seminar Required
Repeatable: Course can be repeated a maximum of 7 times.
Equivalent to: GC 596S, GEOS 596S
Co-convened with: SCI 496S
Course typically offered:
Main Campus: Spring

Recommendations and additional information: Practicing K-12 teachers and those with instructor permission may enroll at the graduate level.
Interdisciplinary Interest Area: GEOS - Geosciences

SCI 599: Independent Study (1 - 6 units)
Description: Qualified students working on an individual basis with professors who have agreed to supervise such work.
Grading basis: Alternative Grading: S, P, F
Career: Graduate
Course Components: Independent Study Required
Repeatable: Course can be repeated a maximum of 99 times.
Course typically offered:
Main Campus: Fall, Spring, Summer

-SA represents a Student Abroad & Student Exchange offering
-CC represents a Correspondence Course offering
May Be Offered Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.