



College of Science DIRECTED RESEARCH PROPOSAL FORM

Please complete this form, obtain signatures of approval and return the form to Gould-Simpson 1017 to be enrolled. This form is for department records and is used to assign a grade at the end of the semester. All adjustments to the form must be made in person and initialed before any enrollment changes can be completed. **Carefully review the attached descriptions and grades available for each course number before choosing the appropriate course.**

Student Name \_\_\_\_\_ Student ID \_\_\_\_\_

Student Phone Number \_\_\_\_\_ Student UA Email \_\_\_\_\_

Class (circle one) *Freshman Sophomore Junior Senior*

SCI 392 492 (circle one)

Course Section (if known) \_\_\_\_\_

Number of Units \_\_\_\_\_ Semester \_\_\_\_\_ Year \_\_\_\_\_

Project Advisor \_\_\_\_\_ Project Advisor Dept. \_\_\_\_\_

Project Advisor UA Email \_\_\_\_\_ Project Advisor Phone \_\_\_\_\_

Title of Project \_\_\_\_\_

Estimated hours per week Student will spend on project \_\_\_\_\_

Estimated Project Advisor/Student contact hours per week \_\_\_\_\_

Date(s) for mid-semester evaluation of student performance \_\_\_\_\_

[Note: At least one mid-semester evaluation should be completed before the second drop deadline and a copy must be submitted to the Science Advising Office in GS 1017]

If appropriate, provide the name of another person with a supervisory role: \_\_\_\_\_

**Description of research project:** (attach a project plan or additional pages if necessary).

Project/plan continued...

**Will the student be expected to attend and participate in lab meetings?** Yes No

If yes, frequency per month \_\_\_\_\_

**Will the student maintain a lab notebook?** Yes No

**Techniques the student intends to learn and utilize as part of this research project:**

**How will the student summarize the research performed?** (e.g., written summary, poster presentation, oral presentation) Please provide some details (e.g., 10 page literature review).

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**SCHEDULING OF INDEPENDENT STUDY OR DIRECTED RESEARCH**

**Before meeting with a potential project advisor,** students should print out their semester schedule in block format from UAccess Student Center and highlight the possible time blocks available per week for directed research. Each unit of credit translates to three hours per week dedicated to research. For example, three units translate to approximately nine hours per week throughout the semester for a total of 135 hours. With the project advisor, identify which blocks of time will be used to fulfill the time requirement. Attach the highlighted schedule to this form, initialed by the project advisor.

**Form Attached:** \_\_\_\_\_

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**REQUIRED SIGNATURES**

**STUDENT** \_\_\_\_\_ **DATE** \_\_\_\_\_

**FOR PROJECT ADVISOR USE ONLY**

The student's grade for this course is based upon the level to which they meet the criteria listed in the description of the project and the intended learning outcomes.

**Project Advisor** \_\_\_\_\_ **DATE** \_\_\_\_\_

**College of Science Advising Director** \_\_\_\_\_ **DATE** \_\_\_\_\_

## ACADEMIC CREDIT FOR DIRECTED RESEARCH

The College of Science strongly encourages undergraduates to become involved in research. Participation in research provides exposure to potential careers, develops mentoring relationships with faculty and other members of research groups, and promotes understanding of science. Students may register for research credit at any stage of their academic career.

### INTENDED LEARNING OUTCOMES

There are many tangible benefits to participating in a directed research experience as an undergraduate student. Joining a research group allows students to move beyond the traditional classroom environment into an atmosphere of discovery, collaboration and focus on projects with broad impacts to the modern world. Undergraduate research provides the opportunity to integrate and strengthen comprehension of chemical principles, to develop scientific and professional skills, to gain a greater understanding of scientific inquiry and to contribute to the generation of new scientific knowledge. Additionally, undergraduate research should facilitate the formation of a mentor/mentee relationship between the faculty advisor and the student. Although students may engage in a variety of activities under the title of Directed Research (including literature-based independent study), projects should generally be well-defined, have a high likelihood of completion during the undergraduate career of the student, use a variety of instrumentation or scientific techniques, promote awareness of safety practices and improve familiarity with scientific literature. *Additionally, courses with graded units should include a comprehensive report at the end of each semester.* With these requirements in mind, please provide below a brief description of the planned activities for the semester, especially including those that are amenable to evaluation for grading purposes.

Students are responsible for making their own arrangements, which should be completed before the first day of each semester in which the student is registered for research credit. This includes completion of the attached form.

### Policies for Independent Study and Directed Research

*Updated with policies & guidelines approved by Faculty Senate, 5/5/08, with link to Honors Guidelines, 5/19/09*

### **392 and 492: Directed Research**

(Credit varies 1-6 units per term) Individual or small group research under the guidance of faculty associated with research centers in the College of Science. Students may register for a maximum of 12 directed research units over the career. Grades available: A, B, C, D, E

1. **Determination of credit:** The University and Board of Regents require a minimum of 45 hours of course work for each unit of credit awarded.
2. **The number of credits of Directed Research** must lie within the approved credit range listed in the catalog course description.
3. **Students should not serve as simply another pair of hands for another lab member. Specific learning outcomes should be discussed.** The instructor or project advisor must provide either a course syllabus or a project plan detailing: (1) learning outcomes, (2) expected reading, or lab or field work, (3) expected meetings, (4) expected work products, and (5) criteria to be used for evaluation and grading.
4. **All proposal forms and project plans** must be signed by the instructor and the student and filed in the department or program office within a week after the term commences.

5. **At the end of the term**, or whenever the student completes the project, the instructor or project advisor must complete a record of the outcome that explains the grade submitted. The record of outcome form with the instructor's signature should be filed in the department or program office when the course grade is submitted.
6. **It is the policy of the College of Science that students enrolled in Directed Research for credit** cannot be paid for the same hours as lab work during the academic year. Academic credit can be awarded only for faculty-approved academic work as defined by department policy, whereas, paid laboratory work must follow university or programmatic policies for student employment.
7. **If a grade of Incomplete is awarded** for a Directed Research course at the end of the term, another Project Advisor must be identified who agrees to evaluate the student's work, should the original Project Advisor become unavailable.
8. **Tuition resulting from enrollment** is the responsibility of the student.
9. **To avoid a late fee for adding units**, students must register prior to the 22nd calendar day (following the first day of the semester). Any student who increases units -- including a student who has already paid full-time fees -- will be charged a \$250.00 Late Registration Charge. [http://www.bursar.arizona.edu/students/fees/latereg\\_charge](http://www.bursar.arizona.edu/students/fees/latereg_charge) This late charge cannot be waived. To avoid the \$250.00 Late Registration Charge, registration must be completed prior to the 22<sup>nd</sup> day of the semester.

**For questions, contact:**

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