NSCS RESEARCH ENROLLMENT FORM

SCHOOL OF MIND, BRAIN AND BEHAVIOR

Forms are due by the 16th day of the semester.

Registration Information

Student Name _____ **Student ID #** _____

Student Phone _____ **Student Email** _____

Class Standing: Fr So Jr Sr **Semester/Session:** Fall Spring Summer **Year** _____

NSCS Course Number - select one course number below (must be active in Honors College to do Honors Sections)

COURSE TITLE	GRADING SCHEME	LOWER DIVISION		UPPER DIVISION	
Independent Study	Superior/Pass/Fail	199	299	399	499
Honors Ind. Study	Regular grades A-E	199H	299H	399H	499H
Directed Research	Regular grades A-E	--	--	392	492
Honors Dir. Research	Regular grades A-E	--	--	392H	492H

Number of Units: _____ *[Each unit requires 45 hours of work, or about 3 hours per week during a typical 15 week semester.]*

Project Advisor Information

Project Advisor *(faculty)* _____

Project Advisor Email _____ **Phone:** _____

Project Advisor Home Department _____

Secondary Advisor *(if applicable)* _____
  (usually a grad student or postdoc)

Unit Limit & Project Continuation

Will enrollment in these credits put you over the unit limit of 19 units? Yes No
If yes, please contact your primary major advisor to request a unit increase prior to submitting this form.

Are you continuing the same research project that you were working on last semester? Yes No
Students may continue a project one time without being required to submit a new research proposal or 100% Engagement documentation. If you are continuing, you need only fill out the first page of this form. If your project continues for a third term, you will be required to submit a full enrollment packet again.

Required Signatures

Please ensure that all required sections of the form have been completed before signing and submitting form

Student _____ **Date** _____

Project Advisor _____ **Date** _____

Secondary Advisor _____ **Date** _____

NSCS Approval _____ **Date** _____

Office Use Only SECTION _____ COURSE # _____ DATE ENROLLED _____ ENROLLED BY _____

Project Title: _____

Brief Description of Project: _____

_____

_____

Estimated hours per week Student will spend on project _____

Estimated Project Advisor/Student contact hours per week _____

Will the student be required to attend lab meetings?   Yes   No

Will the student be required to keep a lab notebook?   Yes   No

Techniques the student will learn/utilize as part of this research project:

_____

_____

_____

Tangible products the student will be submit as part of this research project, such as papers, posters, data, Power Point presentations, stocks, strains, etc.:

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Additional requirements for this research project:

_____

_____

_____

ABSTRACT REQUIRED: Attach a description of your project (~150 words) that specifies:
- The context of the project (what's the big question?)
- The specific question or hypothesis to be addressed
- The major approach(es) to be used

Note that the research proposal is to be written by the student to ensure that the student understands what is expected of them. The advisor may assist but should not write the proposal for the student.

All NSCS research, thesis and preceptorship courses are now designated as 100% Engagement courses. As such, the following documentation is required. To learn more about the UA's 100% Engagement initiative, visit the Office of Student Engagement's website at http://ose.arizona.edu/100-engagement. (Attach additional pages as needed.)

Part I: Pre-experience. 1. What brought you to this particular engagement experience and why do you think it will be good for you? What do you think it will help you learn or accomplish?
2. How do you learn best? For example, by yourself, with others, from books or programs, by asking questions and watching by example, by trial and error, etc. How do you work best? What do you think is your level of critical thinking skill?
3. What kinds of things are you most interested in doing or learning during this research project?
4. Do you have any concerns about your ability to succeed? How might this experience relate to your career path?

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Learning outcomes: Outcomes should address your learning goals for the experience within the Competency of *Innovation and Creativity**, the Activity of *Discovery***, and the Skill of *Problem-solving/critical thinking.**** Include what you hope to gain from the experience itself and how the project/experience will be carried out.

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Grading scale (Specify the methods of assessment of student learning outcomes and how the final grade will be calculated, including those on any assignments/products submitted after the due date)

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     * Competency: *Innovation and creativity.* Students gain an understanding of how to deliberately apply information, imagination, creative thinking and initiative to generate new ideas for the purpose of addressing needs. This process helps students become accustomed to the discomfort of questioning the status quo and the excitement of idea generation and exploration at the leading edge of thought.

    ** Activity: *Discovery* - Students engage in independent or collaborative inquiry that contributes to a wider sense of understanding, the development of solutions to challenging problems, or the creation of new knowledge.

   ***Skill: *Problem-solving/critical thinking* - Students will be able to leverage curiosity to construct problem-posing and engage in inquiry-based discovery; articulate problem-solving strategies and solutions; synthesize information to develop new perspectives, apply knowledge to current situations, both independently and interdependently, and reflect on critical thinking and problem solving through metacognition.

100%-Engagement Documentation: End of Semester

All students enrolled in a 100% Engagement experience are *required* to submit a reflection at the end of the semester. The student is to submit the reflection to the research mentor. Students are not required to submit their reflection to the NSCS Program; however, at the end of the term the NSCS Program Coordinator will contact all research mentors and ask that they confirm that the reflection piece was completed.

Part II: Post-experience. Review your pre-experience reflection and think about what has changed in the course of your experience. You must address the Competency and Activity for the course. Your reflection should: describe what you did; address progress toward the outcomes you and your faculty mentor set for this experience; explain whether and how the experience contributed toward your understanding of yourself, the project and what you learned in other courses in the curriculum; indicate whether you have developed new modes of thinking or challenged assumptions; identify what you found challenging and/or particularly interesting; identify what in this experience contributed to your learning and why; and explain how this experience affects your career planning.

The length and mode of your *Reflection* are whatever it takes to critically examine and synthesize your experience and address its consequences for you. At minimum, it should be a thoughtful essay of at least 2 pages, single spaced. It could also be a public presentation or poster, a portfolio, a manuscript, a multi-media presentation, a journal, blog or podcast, or a product you have specifically designed.

I confirm that I have read this section and understand that a reflection is required at the end of the semester and that the research mentor will be asked to confirm completion of this requirement. (Please initial and date below)

Student _____ **Date** _____   **Project Advisor** _____ **Date** _____
         (Initial)   *(Initial)*

Laboratory Research: Basic Evaluation Plan

The faculty mentor and the students get together at the beginning of the semester to determine which of the criteria below will be used for evaluation. This of course depends on the level of the student, including their previous experience in a lab or the particular lab. Some of these criteria would be appropriate only for senior or very strong students, such as hypothesis generation and experimental design. Faculty may set expected levels of performance for the chosen criteria and/or weight them so that the student understands the importance of each in determining the grade for the semester. For example, +++ would indicate a critical criterion – one that is a focus of the research experience; a ++ level might be applied to a criterion that is moderately important; a + level of importance might represent an expectation that the student attend to the criterion, but it is not a critical one; and finally, some criteria would be marked simply NA. The conversation about these criteria would help the student understand the expected level of the marked criteria necessary to achieve a high grade. The conversation also would complement the one on setting particular learning objectives for the semester or summer and laying out the specific expectations for the student, both of which are included on their research enrollment form.

Criteria	Importance	Acceptable/ Very Good/Excellent
Understanding the research question		
Relating the question and results to the "bigger picture" in the field		
Use of the primary scientific research literature; conducting database searches		
Hypothesis generation, experimental design		
Understanding limitations of research methods and design		
Data collection and analysis (including statistics)		
Synthesis/interpretation, of results		

Use of controls		
Keeping a detailed, accurate lab notebook, following ethical principles for data collection and analysis		
Ethical treatment of research subjects, whether animal or human		
Awareness and application of professional norms		
Resourcefulness, creativity, initiative, problem solving		
Communication skills		
Level of independence		
Lab citizenship		
Attitude		
Perseverance, curiosity, tolerance of uncertainty, collaboration, dependability, asks questions as needed		
Time management (includes attendance)		
Other		

I want to do lab research but I don't have a faculty mentor. How do I find a lab to work in?

Research labs rarely recruit undergraduate students, even if they are accepting new research assistants. It is therefore up to students to search for a lab much like they would search for a job. Networking is an invaluable way to find research positions and there are plenty of tools available online to help with the search. A good starting point is the Undergraduate Research page on the NSCS website: http://www.nscs.arizona.edu/undergraduate_research

What course number should I register for?

Lower-division vs Upper-division

This is at the discretion of the project advisor. NSCS Suggestion: Lower-division credit (199, 199H, 299, 299H) is appropriate when the student will be performing relatively simple tasks. Upper-division credit (399, 399H, 392, 392H, 499, 499H, 492, 492H) is appropriate for any student, regardless of class standing (Fr, So, Jr, Sr), as long as they work they are performing is sufficiently challenging.

Independent Study (199, 299, 399, 499) is graded using S/P/F grades which will not factor into the student's GPA and may be repeated an unlimited number of times.

Honors Independent Study (199H, 299H, 399H, 499H) is graded using regular A-E grades and will factor into the student's GPA, as well as earn Honors credit. Students must be active in the Honors College and the work they are doing should be qualitatively different from a non-Honors independent study. Advisors and students should follow the Honors College requirements for independent studies: http://www.honors.arizona.edu/resources-advisors. Honors Independent Study may be repeated an unlimited number of times.

Directed Research and Honors Directed Research (392, 392H, 492, 492H) is graded using regular A-E grades and will factor into the student's GPA. Students should be making an intellectual contribution to a project or should be engaged in their own project and not just be performing routine tasks such as data entry or lab maintenance.

How many units should I register for?

Students are required to work 45 hours per unit that they register for. This amounts to approximately 3 hours per week, per unit. It is a good idea to work out your schedule with your mentor first, figure out how many hours per week you will work, and then determine how many units those hours are worth. Most students enroll for between 1-3 units, depending on how many hours they commit to working in the lab. Occasionally, units in excess of 3 are approved but the amount of time spent on research must not interfere with the student's academics.

My project advisor asked me to enroll for credit through their department. Is that ok?

We prefer that all NSCS students enroll for their research credit through the NSCS program. This allows us to keep track of our students' research: which of our students are doing research on campus and what, specifically, they are working on and with whom. This is especially useful when we are evaluating our students for eligibility for various awards and scholarships. We can add sections for any faculty member on campus, no matter what their primary department is. The assigned faculty member will get the SCH (teaching credit) and will assign the grade for the section.

How does my project advisor enter my grade?

At the end of the semester, your project advisor must enter your grade via the UAccess Instructor Center. Instructions can be found here: http://uits.arizona.edu/sites/default/files/workshops/watt/UAccess_Student_Instructor_Center.pdf

Still have questions?

Contact Becca Van Sickler, NSCS Program Coordinator, at beccav@email.arizona.edu, 621-6643 or Gould-Simpson 624.