



## BIOCHEMISTRY & MOLECULAR BIOPHYSICS INDEPENDENT STUDY AND DIRECTED RESEARCH PROPOSAL FORM

Please complete this form and obtain signatures of approval BEFORE registering. Return the form to Olivia Mendoza, Program Coordinator for Academic Affairs in the Biochemistry Academic Affairs Office, Biological Sciences West 362B. This form is for department records and is used to assign a grade at the end of the semester. **Reminder: The last day to register for courses without a \$250 late charge in the Fall/Spring Semesters** is the 21<sup>st</sup> day after the first day of classes; for **Winter/Summer Sessions** (to avoid a \$50 late charge) register by the day before the last day to drop with deletion from the record.

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

Student Phone # \_\_\_\_\_ Student UA E-mail \_\_\_\_\_

Class (circle one) *Freshman* *Sophomore* *Junior* *Senior*

BIOC Course# (circle one)

Independent Study: 199 199H 299 299H 399 399H 499 499H

Directed Research: 392 492

Section # \_\_\_\_\_ (leave blank if you don't know)

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

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

Project Advisor phone number \_\_\_\_\_

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 done before the drop deadline]

If appropriate, name of another person who will help supervise the student: \_\_\_\_\_

### **INTENDED LEARNING OUTCOMES**

Through Independent Study and Directed Research, students should gain a greater understanding of scientific inquiry, including not only practice of the practical laboratory skills needed to produce data, but also a greater comprehension of the specific content concepts. Although students may engage in a variety of activities to meet these intended outcomes, please include several laboratory activities and experimental methods the student will participate in this semester that are amenable to evaluation for grading purposes. If this will be a literature-based independent study, then briefly describe how the background research and information gathering will be done. **Description of research topic:** (syllabus or project plan may be attached).

---

---

---

---

---

---

---

---

---

---

Number of meetings between student and project advisor: \_\_\_\_\_ times a semester to discuss project. At least one time before the mid-evaluation point.

**Will the student be expected to attend and participate in lab meetings as part of their independent study?**  
Yes/No Frequency \_\_\_\_\_month

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

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

---

---

**How will the student summarize the research performed?** (ex. Written summary, poster presentation, PowerPoint, programs, data etc. Please provide some details, ex. 10 page literature review.)

---

---

---

**Additional requirements for this research project:**

---

**REQUIRED SIGNATURES:**

STUDENT \_\_\_\_\_

DATE \_\_\_\_\_

PROJECT ADVISOR \_\_\_\_\_

DATE \_\_\_\_\_

BMB FACULTY ADVISOR \_\_\_\_\_

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 \_\_\_\_\_

**SCHEDULING OF INDEPENDENT STUDY OR DIRECTED RESEARCH**

**Before meeting with the potential project advisor**, students should print out their semester schedule in graphical format from Student Link and highlight the possible time blocks available per week to work on their project. Students should be prepared to dedicate three hours per unit of credit per week. For example, a three unit Independent Study will need approximately nine hours per week throughout the semester for a total of 45 hours. With the project advisor, identify which blocks of time will be used. Attach the highlighted schedule to this form, initialed by the project advisor.

## ACADEMIC CREDIT FOR RESEARCH EXPERIENCE DEPARTMENT OF BIOCHEMISTRY & MOLECULAR BIOPHYSICS

The Biochemistry and Molecular Biophysics faculty encourage undergraduates to be involved in research. Participation in research provides real experience in potential careers, develops mentoring relationships with faculty and other members of research groups, and is the best way to learn science. A detailed description of ongoing projects can be obtained on the department web pages ([www.biochem.Arizona.edu](http://www.biochem.Arizona.edu))

Students are allowed to sign up for credit for working in research laboratories at any stage of their academic career. Approval for credit for independent study, 299(H), 399(H), or 499(H)], directed research (392, 492), requires approval by a member of the undergraduate committee.

Students are responsible for making their own arrangements. These must be completed prior to the semester in which the research will be performed. Signing up for credit for independent study requires the student to prepare a description of the proposed project and have a signed agreement by a sponsor. The proposal must be approved by a member of the undergraduate committee. Students must submit a description of the research completed at the end of the course to a member of the undergraduate committee.

### **Policies for Independent Study**

*Updated with policies & guidelines approved by Faculty Senate, 5/5/08*

#### **199, 299, 399, 499, 599, 699, 799\* Independent Study:**

(Credit varies) Qualified students working on an individual basis with professors who have agreed to supervise such work. Grades Available: S, P, F, I, W

#### **199H, 299H, 399H, 499H Independent Study - Honors:**

(Credit varies) Qualified students working on an individual basis with professors who have agreed to supervise such work. Grades Available: A, B C, D, E, I, W

\* **Graduate students** doing independent work that cannot be classified as actual research will register for credit under course number 599, 699, or 799.

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 Independent Study** 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.
  - a. **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.
  - b. **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.

4. **It is BMB departmental policy that students enrolled in an Independent Study course** cannot be paid for the same hours as lab work. Therefore 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.
5. **Students should enroll within the first three weeks of the Fall and Spring Semesters** or immediately after the beginning of Winter or Summer Sessions. Students must complete the required 45 hours of course work per credit unit before the last day of the term. The last day to register for Independent Study in Fall and Spring Semesters without incurring a late charge is the same as for all other courses; see <http://www.bursar.arizona.edu/students/fees/census> and [http://www.bursar.arizona.edu/students/fees/late\\_charge.asp](http://www.bursar.arizona.edu/students/fees/late_charge.asp).
6. **If registration for an Independent Study course occurs after the twenty-first day** of the regular semester, after the first two days of Winter Session or Pre-session, or after the first week of a Summer Session, the department head (or designee) must sign the Change of Schedule form, in addition to the instructor.
7. **If a grade of Incomplete is awarded** for an Independent Study 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.

Questions, contact Olivia A. Mendoza at 520.621.3868, [omendoza@u.arizona.edu](mailto:omendoza@u.arizona.edu)

