MCB Research, Thesis, and Capstone Guidelines

UA SCIENCE Molecular & Cellular Biology

MCB 199, 299, 399, 498, 499- Independent Study (1 to 5 units) Pass/Fail Grades

Qualified students working on an individual basis with professors who have agreed to supervise such work. The following qualify for Independent Study units:

1. Performing routine tasks:
   a. Data Collection
   b. Data Entry
   c. Lab maintenance associated with research
2. Assisting with a graduate student thesis project
3. Conducting internships outside of the university
4. Doing directed readings or non-lab based projects

Students do not receive a letter for independent study. Grades are Pass/Fail. May be repeated an unlimited number of times; consult with department for possible restrictions.

MCB 392, 492 - Directed Research (1 to 6 units) Regular Grades

Individual or small group research under the guidance of a faculty member. To receive directed research units, students should be making some intellectual contribution to an existing project or should be engaged in their own research. This should *not* include kinds of experiences where the student is simply performing routine tasks. In order to receive this credit, you must state your product when submitting the research form.

Appropriate products include: a paper, poster or presentation to the lab group demonstrating the depth of your knowledge gained and showcasing your research. A combination of productions is encouraged. Other products are acceptable as approved by your advisor.

Directed Research Units are intended to be a personalized research experience in which a student explores a concept while incorporating the knowledge or investigative techniques learned during his or her undergraduate career. This experience should be relevant to the major and coursework. It should also further the student's understanding of the discipline in some way. This typically includes research into and analysis of information relevant to the student's degree. Students should be engaged in the subject matter and in the theory. Frequent contact with faculty members and/or principal investigators is required to lend to a more advanced engagement with the material.

Students receive a letter grade for Directed Research units. May be repeated for a total of 12 credits.

MCB 199H, 299H, 399H, 499H - Independent Study - Honors (1 to 5 units) Regular Grades

Qualified students working on an individual basis with professors who have agreed to supervise such work. ***Students must be in the Honors College to use these course numbers.***

In order to receive Honors Independent Study credit, you must state your product when submitting the research form. Appropriate products include: a paper, poster or presentation to the lab group demonstrating the depth of your knowledge gained and showcasing your research. A combination of productions is encouraged. Other products are acceptable as approved by your advisor.

MCB Research, Thesis, and Capstone Guidelines

May be repeated an unlimited number of times; consult with department for possible restrictions. The department requires these units to adhere to the honors policy for credit listed at https://honors.arizona.edu/academics/honors-courses/honors-college-courses/course-policies.
"Honors independent studies (identified by an "H" after the course number) are different from the non-Honors sections in that they receive a regular letter grade upon completion, signifying that the depth and intensity of the work exceeds the scope of a regular independent study. When choosing to register a student for an Honors independent study, faculty should take the following into consideration: An Honors independent study should be qualitatively different from the non-Honors independent study normally undertaken in the department. Even in the laboratory setting, the Honors student taking an Honors section of independent study should be doing demonstrably different work than students registered for a non-Honors section of 199-499. This difference, indicating that the independent study is worthy of the honors designation, and therefore of a grade, should be indicated and described on the departmental form for credit. This "demonstrably different work" should mean not additional assignments, but a deeper, more challenging and more intense engagement with the subject matter or work of the independent study. Faculty in individual departments shall determine, along with their colleagues in the discipline, what this specific and more challenging work shall be, but in general it might involve some or all of the following: engagement with theory, closer and/or more frequent contact with faculty members and/or principal investigators, interrogation of underlying assumptions and received wisdom, more advanced engagement with the material, faster progress through the curriculum for the course, and the like. Only active University Honors students should be registered for Honors independent study."

MCB 498 Senior Capstone (1 to 5 units) Regular Grades

For students who would like to complete their research with a synthesizing project or paper in their last year. A culminating experience for students involving a substantive project that demonstrates a synthesis of learning accumulated in the major, including broadly comprehensive knowledge of the discipline and its methodologies.

Senior standing required. May be repeated twice for a maximum of 10 units.

The final project is to be submitted to your project advisor. Research form must be accompanied by a one- to two-page typed summary.

MCB 498H Honors Thesis (3 units) Regular Grades

The department requires Honors Thesis units to adhere to the honors policy as described here: https://honors.arizona.edu/academics/thesiscapstone. Honors Thesis units are subject to an earlier deadline and more rigorous standards than Honors Independent Study. In short:
"The Senior Honors Thesis is the culmination of a student's participation in The Honors College at the University of Arizona. It is intended to be a personalized research experience in which a student explores a concept while incorporating the knowledge or investigative techniques learned during his or her undergraduate career. It is expected that the student obtain a level of depth within the thesis topic equivalent to a point between a large undergraduate research paper and a Master's thesis. Not only should the thesis synthesize and build upon existing scholarship, but it should also further the discipline's understanding of the subject in some way. ***As such, the thesis demands a minimum of six units of work – three units of Departmental Honors 498H per semester usually taken in the senior year. Under no circumstances will students be permitted to complete all six-thesis units in a single semester.***"

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Students receive a letter grade for Honors Thesis units. The student will receive a letter grade for each semester's work. The Honors College recommends that the work and the grading be partitioned so that all six units do not hinge upon the completed thesis.

Research form must be accompanied by the Honors Prospectus in the first semester.

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