COURSE DESCRIPTION
BIOS 399: Independent Research provides students with an opportunity to gain experience researching in an academic laboratory setting, while being mentored by a faculty mentor on a self-directed project. Through this experience, students learn to think and problem solve like a scientist. BIOS 399 prepares students for graduate or professional school, and may even clarify a student’s educational and career goals.

PREREQUISITES
Students must have a minimum of 2.00/4.00 Cumulative GPA in Biological Sciences courses, consent of a UIC faculty mentor, and departmental approval. To receive departmental approval, students must complete an Application for Independent Research for the semester in which they intend to enroll in BIOS 399.

GRADING AND CREDIT HOURS
BIOS 399 is a 2 credit hour course with “Satisfactory/Unsatisfactory” grading. Because there are no letter grades for this course, BIOS 399 will not affect a student’s GPA; however, BIOS 399 will count as credit hours towards completion of a degree. Satisfactory completion of BIOS 399 requires a student to dedicate at least 10 hours per week to research in the laboratory (20 hours per week during summer semesters), to attend three mandatory workshops, and to complete a final research paper at the end of the semester (see “Writing Your Research Paper”). The paper will be reviewed by the student’s faculty mentor, as well as by the Biological Sciences department. Credit will not be given for previously conducted research. The research must be done while a student is enrolled in BIOS 399.

CONTINUING OR STARTING A NEW RESEARCH PROJECT
New Research. Students may repeat BIOS 399; however, no more than 5 hours of credit from BIOS 391 and BIOS 399 can be used as credit towards the Biological Sciences major. Students are allowed up to 16 credit hours of independent study coursework, which includes BIOS 399, toward their Bachelor’s degree (not exceeding 8 hours within a single department). In order to receive an additional 2 credit hours for a new BIOS 399 project, students must turn in a new Application for Independent Research by the published deadline, participate in the semester’s workshops, and complete a new paper. In order to receive more than 2 credit hours for the work associated with the same lab, the student’s new project must be substantially different from what was previously done by the student.

Continuing Research. If a student has not completed their research in the designated semester, a student can request to defer the grade in order to complete the research in the following semester. The student must arrange with the faculty mentor to submit a deferred grade (DFR) for the semester. DFR grades do not affect a student’s GPA; it merely shows that the student is still working on the research project. To register for an additional semester(s), students must submit a BIOS 399 Deferral Form attached to a project update. Once the department obtains a final research paper, the student must request from the faculty mentor that the DFR grade be changed to the appropriate final grade (Satisfactory or Unsatisfactory). Importantly, a student finishing deferred research must continue to participate in the workshops until the work and paper are completed. A student will earn 2 credit hours for every semester that they are deferring a BIOS 399 project.
WRITING YOUR RESEARCH PAPER

THIS SECTION IS IMPORTANT!

The final research paper for BIOS 399 should be written in the style of a peer-reviewed journal article. In order to receive credit for BIOS 399, a student must submit a paper with the following components:

1) **Cover Sheet** – Complete the Cover Sheet and have your faculty mentor sign off on your final paper before submitting to the department.

2) **Introduction** – Briefly describe the scientific problem and highlight relevant findings in the field of study. Succinctly link your project’s findings to the scientific problem and previous findings. This section needs to include in-text citations that are formally cited at the end of the paper (see References).

3) **Materials and Methods** – Provide useful descriptions of the protocols and materials used during your experiments. Remember, another scientist should be able to roughly use this section to replicate your findings.

4) **Results** – Using figures and/or tables, you should summarize the results of your project. You should plan on using statistical methods and referencing specific figures or tables in the text. The Results section must contain words, as well as figures and/or tables!

5) **Discussion** – Review the importance of your findings and place them in the context of previous knowledge. Extrapolate the significance of your findings to future experiments and larger questions.

6) **References** – Provide a full list of references that go along with your in text citations. You should expect to have at least 10 references. Please use one, consistent type of citation formatting. As a rule of thumb, most references that you use should have been published within the last 10 years.

**Omission of any of these components will result in an Incomplete or Unsatisfactory grade.**

**Formatting Your Research Paper**
The length and content of the research paper is ultimately decided upon by the student and the faculty mentor; however, the department will look for the following standard formatting for peer-reviewed journal articles and grants:

- Font: Arial, size 11
- Margins: 1” on all sides
- Spacing: 1.15” maximum
- 3 pages minimum (not including figures, tables, and references)

**Recommended Reading**

**CONTACT INFORMATION**
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