



School of Molecular and Cellular Biology

mcb.illinois.edu/undergrad/advising

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MCB 492 SENIOR THESIS

MCB 492 Senior Thesis is a capstone experience for students who have undertaken a sustained research endeavor during their undergraduate training. Enrollment in MCB 492 occurs in the last semester before graduation and involves continuation of the work done previously for MCB 290. It is intended to indicate that you will be writing and submitting a senior research thesis for a grade and/or for consideration of graduation with distinction. MCB 492 cannot be counted towards the 15 hours of advanced course credit required by MCB for graduation. It will, however, count towards the 21 hours of advanced course credit required by LAS.

REQUIREMENTS FOR MCB 492

- minimum of 2 semesters of MCB 290 in the same lab with at least 2 credit hours each term
- enrollment in 3 credit hours of MCB 492 in the last semester prior to graduation
- minimum cumulative GPA of 3.25 at the end of penultimate semester
- submission of intent to graduate with distinction by posted deadline
- submission of a written Senior Thesis with faculty research advisor letter of support by posted deadline
- confirmation of presentation of research at an approved venue by posted deadline
- no academic integrity violations

You should also discuss with your faculty advisor what he or she requires for your Senior Thesis project.

Students may choose to submit a thesis for a grade and/or for distinction consideration. See specific instructions below for steps to submitting your Senior Thesis. Your thesis must be approved by your faculty advisor and submitted electronically using our online form for credit to be received, even if you are not seeking to graduate with distinction. Your thesis will be evaluated by the MCB Distinction committee and assigned a level of distinction or deemed appropriate for a grade in MCB 492. Your faculty advisor will then assign an appropriate grade in the course.

GRADUATION WITH DISTINCTION

To provide recognition for senior students in the MCB major, who have demonstrated excellence in both their academics and research, the MCB Distinction Committee, which is composed of MCB faculty and staff, evaluates the quality of the students' accomplishments and may award the graduation honor of "Distinction in MCB" in one of three categories: Distinction, High Distinction and Highest Distinction. The final Illinois transcript and diploma will note if a student earned distinction and at what level.

To be considered for Graduation with Distinction in MCB your minimum cumulative GPA at the end of your penultimate semester must be 3.25 (3.90 for Highest Distinction). You will need to complete the following items by the deadlines indicated on our web site, <http://mcb.illinois.edu/undergrad/opportunities/research/#distinction>.

- Complete and submit an [Intent Form](#)
- Upload a PDF of your final thesis using our electronic form and/or provide verification of a poster presentation
- Upload a letter of evaluation regarding your research and written thesis from your faculty research advisor

THE RESEARCH THESIS

Since quality research requires intensive effort and time commitment, plan to get started with MCB 290 in your junior year or before. Past experience indicates that one- or two-semester projects rarely succeed in producing results sufficient for a thesis. Three- to four-semester projects are the most common. The research project must consist of original research, which should attempt to answer a specific scientific question. Simply learning to master a technique is not sufficient. Because research often involves unanticipated technical problems, you should be prepared to accept delay and frustration when things do not go smoothly. The best approach to your project is to have a clear understanding of the questions you are asking and why you are asking those particular questions. This understanding is aided by a familiarity with the literature in your area.

The research thesis should be a formal report of your results and, therefore, should follow accepted professional standards for such reports. Your faculty research advisor should be a valuable resource for details. An acceptable thesis should describe research discoveries of sufficient quantity and quality to constitute a body of work that presents a problem, addresses that problem through specific and well-defined experimental approaches, and interprets the results in the context of the relevant research field. Your thesis should contain the elements listed below and should be double-spaced using a 12 point standard font with 1 inch margins. Include page numbers on all but the title page. Examples of previous theses can be found at <http://mcb.illinois.edu/undergrad/opportunities/research/#distinction>.

TITLE: The title page should include the title of your thesis, your name, major and university (UIUC), your research advisor's name, department, and the date of completion.

ABSTRACT: A brief summary of the research project (150 words or less). The first sentence should give a broad introduction to the field of your research and should be followed up with a more detailed sentence providing specific background for your study. The next sentences should include a summary of your objectives and results. The final sentence should indicate your final conclusions.

INTRODUCTION: (3 to 6 pages, depending on the topic) The Introduction should discuss the scientific background leading to the project, including a review of previous literature related to the topic, what questions need to be addressed, and how the thesis project addresses these questions.

EXPERIMENTAL APPROACH (typically 2 to 4 pages) : The Experimental Approach and Methods section should clearly describe how the thesis project addressed the problem, what the experimental design was, and details on how the experiments were conducted, including sources of materials.

RESULTS: (typically 4 to 7 pages, excluding figures and tables) The Results section should summarize the results of the experiments, showing the experimental data in graph and figure format with adequate statistics. Be sure to label and caption all Tables and Figures.

CONCLUSIONS AND DISCUSSION: (typically 3 to 5 pages, excluding figures and tables) The Conclusions section should evaluate the results obtained and the figures, tables, or graphs presented and should succinctly discuss the work in the context of the appropriate field(s).

ACKNOWLEDGEMENTS: You must fully credit any data, analyses, illustrations, and so on, that are produced or obtained by or through collaboration with other individuals. This credit must include the names of those with whom you collaborated and an explanation of the nature of their assistance and/or collaboration. This information should be included within the experimental sections as well as the acknowledgments section of the document. Failure to give proper credit may disqualify you from consideration for graduation with distinction.

REFERENCES: Adequate references should be cited, and a bibliography with complete reference information (all authors, complete title of article, journal name, volume, date, and so on) should be given.

Recognize that communication of your results is the final step in scientific research. Therefore, your thesis should be as clear as you can make it. A well-written, concise thesis should be understandable to researchers in allied fields as well as to specialists in your own field. The senior thesis is not a "paper," so there are no hard-fast page limitations. Since this is an undergraduate senior thesis, it is not expected that students will have the same depth and level of accomplishment that might be found for a master's or doctoral thesis, but the format is similar. An unduly long thesis is discouraged. Again, your faculty research advisor should be consulted regarding this. The goal is to have a thorough, clearly written, yet concise presentation of your research project.