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 graduation and possibly for distinction consideration.

REQUIREMENTS FOR MCB 492

The prerequisite for MCB 492 is a minimum of 2 consecutive semesters of at least 2 credit hours each of MCB 290 under the guidance of the same professor. Nonetheless, in order to accomplish a notable body of research for a thesis project, many more hours of research are usually necessary than the stated minimum. You should discuss with your faculty advisor what is required for your project. Rarely, and only with permission, is MCB 492 credit awarded for work that does not meet this criteria. Please note that MCB 492 cannot be counted towards the 15 hours of advanced course credit required by MCB for graduation. It will count towards the 21 hours of advanced course credit required by LAS.

Students may choose to submit a thesis for a grade and/or for distinction consideration. See instructions below under The Research Thesis for steps to submitting your Senior Thesis. A minimum of 3 credit hours of MCB 492 is required in the final semester. Your thesis must be approved by your advisor and submitted to the MCB Core Curriculum Office in room 252 Davenport for credit to be received, even if you are not seeking to graduate with distinction.

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 members and staff, evaluates the quality of the students' accomplishments and may award the graduation honor of “Distinction in MCB” 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.

In order to be considered for Graduation with Distinction in MCB you must submit the following items by the deadlines indicated: an Intent to Submit a Thesis Form, followed by your final research thesis (1 hard copy and one electronic copy (PDF) to undergrad@mcb.illinois.edu) and a letter of evaluation from your faculty research advisor, to the MCB Core Curriculum Office in room 252 Davenport Hall. Your overall GPA must be at least 3.25 to be eligible for distinction, 3.50 for high distinction and 3.75 for highest distinction.

The MCB Distinction Committee will make the final determination as to whether the thesis you submit is satisfactory for graduation with distinction and at what level, based on the overall quality of the thesis and research performed.

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 a title page, abstract, introduction, experimental approach and methods, results, conclusion and discussion, acknowledgments, and references.

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

**ABSTRACT:** A brief summary of the research project (100 to 200 words).

**INTRODUCTION:** 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:** 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:** 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:** 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. Do not get bogged down in detail. 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. Formatting should include 1” margins, double-spaced text, and 10–12 point font size.*

**EVALUATION PROCEDURES FOR GRADUATION WITH DISTINCTION**

Your research thesis will be read and evaluated by members of the MCB Distinction Committee, which consists of MCB faculty members and staff. Remember that committee members will assess clarity of expression as they read your thesis. In addition, the committee members will also take into account the letter of evaluation submitted by your faculty research advisor. The MCB Distinction Committee will decide which theses, if any, are worthy of Distinction or High Distinction. Not every student who writes and submits a thesis receives distinction. If you
submit a thesis but do not receive distinction, you may still receive credit and a letter grade for MCB 492.

As a part of the evaluation process, the committee may interview some students. All students being considered for High Distinction will be interviewed, so it is important that you be available for an interview during the week when the committee will meet. If you are interviewed, you will be asked to provide a brief (~10 minute) oral presentation summarizing your work. You will be expected to be able to discuss your work, and you will be questioned on its technical aspects, the interpretation of results, and the significance of the research. The objective of this interview is to find out how well you understand what you did, why you did it (the scientific reason), and what the results mean in relation to other knowledge in the field.

SENIOR THESIS SUBMISSION DEADLINES

If you are graduating this academic year and applying for Graduation with Distinction, you must submit an Intent to Submit a Thesis Form which includes a page that provides the tentative title of the research thesis and a brief summary of the research (i.e., one paragraph) to the MCB Core Curriculum Office in room 252 Davenport no later than 11 a.m. on the indicated deadlines.

This information is needed by the MCB Distinction Committee to determine the number and disciplinary distribution of theses to be reviewed. If necessary, the committee may need to add appropriate faculty members.

In order to be considered for Graduation with Distinction in MCB you must submit the following items by the deadlines indicated on our web site: an Intent to Submit a Thesis Form, followed by your final research thesis (1 hard copy and one electronic copy (PDF) to undergrad@mcb.illinois.edu) and a letter of evaluation from your faculty research advisor, to the MCB Core Curriculum Office in room 252 Davenport Hall. Typical deadlines are listed below, but please consult our web site at http://mcb.illinois.edu/undergrad/opportunities/research/#deadlines for confirmation.

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<th>GRADUATION DATE</th>
<th>INTENT TO SUBMIT THESIS FORM DEADLINE</th>
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<td>Fall/December</td>
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<td>Spring/May</td>
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No theses will be accepted after the listed submission deadline. If you miss the deadline, you will NOT be considered for graduation with distinction, but you may still receive credit for having completed a thesis. If you miss the deadline, but wish to receive credit and a letter grade for MCB 492, you may still write and submit a thesis (original) to the MCB Core Curriculum Office, 252 Davenport Hall, by the last day of classes for the semester that you will be graduating, but only with prior approval of your research advisor and the chair of the Distinction Committee. A letter from your research advisor approving your thesis must also be submitted along with your thesis.

FOR ADDITIONAL INFORMATION

If you would like additional information regarding submission of a senior thesis or distinction in MCB please contact the MCB Core Curriculum Office in room 252 Davenport or by calling 217-244-6239.