Concordia University, Portland  
College of Theology, Arts, & Sciences

SENIOR THESIS HANDBOOK

Revision date: 8/28/2014

I. Introduction

The CTAS Senior Thesis Handbook is intended to be the definitive guide to the successful completion of Senior Thesis as a graduation requirement. Please read all sections carefully prior to embarking upon your Senior Thesis. This will increase your awareness of the requirements and reduce the time it takes you to complete your thesis since you will be less likely to spend time doing things that do not meet the requirements. A time line (Form A) is provided at the end of this document that will guide you through the process.

II. Academic Credit for Senior Thesis

A. XXX 492 Thesis Preparation Class (1 credit)

All students intending to complete a Senior Thesis to meet the Senior Project graduation requirement must enroll in the XXX 492 (Thesis Preparation) in the spring semester prior to the year they intend to complete their thesis. One of the objectives of this class is that the student will develop a research topic of personal interest which will lead to ongoing development of their Senior Thesis project. In order to facilitate this, students will meet with library staff members to assist in the identification of appropriate resources. As part of this class, the student will be formally linked to their Faculty Thesis Supervisor (see Section III) by the completion of Form B (Assignment of Faculty Thesis Supervisor). This form must be completed and turned in to the Assistant Director of the student’s department before the student can receive credit for 492. Students may be asked to develop and write a preliminary thesis proposal as part of this class. A requirement for the successful completion of XXX 492 Thesis Preparation Class is that each student attend and provide a written evaluation of at least two senior thesis defenses held during the term they are enrolled in XXX 492. This is a graded course and the grade will be assigned by the faculty instructor for the course. Students must receive a grade of B or better in order to be permitted to register for XXX 493/494. Students who fail to receive a B grade will be asked to do a practicum to meet their Senior Project requirement. If their major does not include a practicum option, the student will become an Interdisciplinary Studies Major.
B. XXX 493 Thesis Part I: Literature Review, Project Design and Research/Writing (2 credits)

This course may be completed during any term following successful completion of XXX 492 but must be completed successfully prior to admission into XXX 494 Thesis Part II.

Required components of this course include:

- At the beginning of the semester, students will consult with their Faculty Thesis Supervisor to develop a mutually agreed upon set of written goals (and specific “deliverables”) for the first phase of the thesis. This list of goals will be submitted to the student’s Faculty Thesis Supervisor (see Section III) no later than the 2nd Friday of the semester.
- Students will work with their Assistant Director of their department to confirm enrollment by filling out Form C no later than the 2nd Friday of the semester.
- Students will also prepare a formal written proposal (Form D) outlining their thesis project which must be submitted to the Dean’s office no later than the 10th Friday of the semester.
- The student will meet with the Faculty Supervisor either individually or, where appropriate, in a group of students who have similar projects. Meetings will be held on a weekly basis and students will supply Faculty Supervisors with weekly progress reports.

During the semester of XXX 493, it is expected that the student will do a thorough literature review, developing both the primary bibliography as well as the introductory sections for their thesis. In addition, a detailed description of the scope or experimental design of the thesis must be produced. Most students will find it advantageous to actually begin the research, project, or creative activity which is at the heart of their thesis during this time period. In some disciplines, like English, History, Humanities, and Theology, students are strongly advised to complete most of their research by the end of this course as well as turn in a first draft of at least a third of the actual thesis. Students receiving a C- grade or lower for this course may not continue on to the second semester of the thesis (494) and will be required to complete a practicum as their senior project. If their major does not include a practicum option, the student will become an Interdisciplinary major.

C. XXX 494 Thesis Part II: Research, Thesis Writing, and Defense (2 credits)

During the final semester of their thesis, students will complete any research, project, or creative work; write the remainder of the thesis, and hold a defense in front of their Thesis Defense Committee and the public. Required components of this course include:

- The student will meet with the Faculty Supervisor either individually or, where appropriate, in a group of students who have similar projects. Meetings will be held on a weekly basis and students will supply their Faculty Supervisor with weekly progress reports.
- A preliminary draft of the thesis should be submitted to the Faculty Supervisor and Thesis Defense Committee members by the 8th Monday of the semester. The committee will be responsible for reviewing and responding to 60 pages only. In cases of theses longer than 60 pages, the student will need to indicate which 60 pages should be reviewed by the committee.
• All research, data analysis, writing and creative activity must be completed during the first 12 weeks of the semester.

• Five paper copies of the final draft of the completed thesis must be submitted to the Dean’s office by the 12th Friday of the term if the thesis is being defended in the fall or by the 13th Monday of the term if the thesis is being defended in the spring. The Dean will distribute these copies to the members of the Thesis Defense Committee and interested members of the community so they may review the thesis prior to the defense. Late submissions will not be accepted! The paper copies may be on standard bond paper or copy paper. If the final draft includes more than 60 pages of text (excluding acknowledgements, table of contents, bibliography, etc), the student will need to indicate which 60 pages will be reviewed.

This is a graded course but note that the grade is determined by the Thesis Defense Committee (see below). The Thesis Defense Committee may ask for comments and evaluation from other faculty members in their determination of the student’s grade.

III. Selection of Faculty Supervisor and Defense Committee

It is the responsibility of the student to identify and receive the approval of a Faculty Thesis Supervisor prior to enrolling in XXX 493. The Faculty Thesis Supervisor serves as the student’s mentor, advisor, and advocate throughout the thesis process. A Faculty Thesis Supervisor provides guidance and expertise to the student in the completion of their thesis and should be selected based on mutual agreement between the student and faculty member. Faculty Thesis Supervisors are not responsible for final grading and evaluation of the student’s thesis work. Selection of a Faculty Thesis Supervisor will normally be completed as a component of the XXX 492 Thesis Preparation course. The Faculty Supervisor is required to sign off on the thesis (Form B below) which signifies the faculty member’s commitment to serve as the student’s thesis supervisor. It is also the responsibility of the student to arrange for regular meetings with the Faculty Supervisor during the two terms of the thesis process.

A Thesis Defense Committee, composed of two faculty members, will be assigned by the Department Chair at the time Form B is submitted. The Thesis Defense Committee is charged with the responsibility of evaluating the student’s thesis work both at mid-term of XXX 494 and at the time of the thesis defense, and will submit the final grade for the student’s work in XXX 494. The two members of the committee will include (1) a faculty member selected by the student (subject to agreement by that faculty member), and (2) a faculty member selected by the Department Chair. At least one of the Thesis Defense Committee members must have expertise in an area related to that of the content of the thesis. The Thesis defense committee may consider all aspects of the students work, including weekly progress reports, recommendations of the faculty thesis advisor, the quality of the thesis defense, and evaluations provided by other faculty in the student’s department in determining the final grade for the thesis.

IV. Research Proposal
1. You must submit a formal research proposal (using the form labeled Form D: Senior Thesis Proposal) to the Dean no later than the tenth Friday of the term in which you are registered for XXX 493. Note that it requires the approval of the Department Chair.

2. You must review the materials contained in the Concordia University Research Committee Policies and Procedures Manual. This document is available on-line at https://intranet.cu- portland.edu/ctas/curc_manual.cfm

3. After reviewing the CURC Manual, consult with your Faculty Thesis Supervisor to determine the level of review your research will require. In the majority of cases, thesis research will qualify for exemption from review. If that is the case, you must fill out the Certificate of Exemption Form (Appendix I in the CURC Manual) and submit it to the CURC Chair.

4. If your proposal includes research involving human subjects, it will be necessary for you to fill out and submit the Investigator’s Assurance Form (Appendix II in the CURC Manual) to the CURC Chair.

5. If your proposal cannot meet the Exempt status, then you must also fill out and submit the Investigation Involving Human Participants Form (Appendix IV in the CURC Manual) to the CURC Chair.

6. Approval of the CURC Chair is required prior to the beginning of any actual research.

V. Research Scope

1. The student is to spend a minimum of six hours per week for 15 weeks (90 hours) actively engaged in thesis work to meet the requirements of a two credit course. Conducting the research often may involve more than one semester of work, and so the attached Time Line (Form A) may be of help in determining how far in advance you should begin research.

2. The experience will be carried out under the direct supervision of the Faculty Supervisor. Faculty Supervisors must be full-time or long-term adjunct faculty members in the department of the student’s major. Faculty Supervisors receive 0.25 hours of weight load for each advisee they work with per course. Faculty Supervisors are responsible for meeting with their advisees once a week during the course of the semester in which the research is being conducted, at a pre-set time, to check on the progress of the research. Feedback will be given to the student on a regular basis concerning the work in progress.

VI. Form of the Thesis

1. The Chicago, MLA or APA Style Manual or another standard style approved by the specific department should be utilized to guide the preparation of the thesis. Copies are available in the library and on-line

2. The left-hand margins of the final copies should be 1.5 inches to allow for proper binding.

3. The following must be included in this order:

   a. Library permission form (Form F).
b. A title page (Form E), including signature lines for the Faculty Supervisor, Department Chair, Dean of the College of Theology, Arts, and Sciences; and Provost, with dates for the approval of each.
c. An abstract of one page or less. Abstracts should give a brief background/introduction to the topic investigated, a brief description of methods used, and a brief report of the results obtained.
d. Table of Contents
e. Dedication page (optional)
f. Acknowledgements
g. Introduction, Preface, or Literature Search – This should include a history of previous research, why you selected the research you did, and your hypothesis (if this is a scientific research thesis). All theses must be supported by an adequate research component, which is documented in a bibliography.
h. Content of thesis
   {For scientific theses, the following should be included in this order:
    1) Materials and Methods
    2) Results – including charts, statistical analyses
    3) Discussion – interpreting results
    4) Conclusion – outlining the validity of your hypothesis based on your results}
i. Bibliography

4. Five paper copies and an electronic copy of the final draft of the completed thesis must be submitted to the Dean’s office by the 12th Friday of the term if the thesis is being defended in the fall or by the 13th Monday of the term if the thesis is being defended in the spring. The Dean will distribute these copies to the members of the Thesis Defense Committee and interested members of the community so they may review the thesis prior to the defense. Late submissions will not be accepted! The paper copies may be on standard bond paper or copy paper. If the final draft includes more than 60 pages of text (excluding acknowledgements, table of contents, bibliography, etc), the student will need to indicate which 60 pages will be reviewed.

5. Copies of the thesis will be distributed by the Dean’s office to the Thesis Defense Committee, the Faculty Supervisor, the Department Chair, and other interested faculty or students.

VII. The Thesis Defense

1. The formal thesis defense is to take place during the two weeks before finals in the semester the student has registered for XXX 494.

2. Thesis defenses are scheduled no later than the tenth week of the semester through the Assistant to the Dean by the student in consultation with the Faculty Supervisor. The office is located in GRW-315K. Although the defense is open to all members of the campus, the Department Chair, Faculty Supervisor, and Thesis Defense Committee members are required to attend.
3. During the thesis defense the student presents his or her research including an introduction outlining why they chose their topic, the methods they used to research the topic, the results of the research, and the conclusions about the accuracy of the hypothesis based on these results. If the student is presenting a non-research-based thesis, he or she will typically provide excerpts of the thesis and a presentation of why he or she chose this topic and the process by which they developed the final product. Normally 20 minutes is allocated to the presentation. After the formal presentation, the floor is open for questions by those in attendance. This allows for critical inquiry by the people in the audience to further their own understanding of the research or to further assess the results and conclusions and their relationships to the original hypothesis.

4. The Faculty Supervisor, Department Chair, and Thesis Defense Committee members are responsible for making corrections on the thesis distributed to them and providing the student with the corrected papers so that they can make necessary adjustments. Students are responsible for making all corrections and submitting the final draft of the thesis for approval within **48 hours** of the thesis defense.

5. Once all corrections have been made, a digital copy for the library and two final copies should be printed on acid-free paper (which can be obtained in the Assistant to the Dean’s office) and submitted to the Dean’s office. Signatures will be obtained by the Dean’s office.

6. A Publication Waiver will be offered to the student by the Dean’s office. This allows Concordia University to retain a copy of the thesis for permanent inclusion in the university library.

7. The final copies are submitted for binding to be housed in the library’s permanent collection. No changes will be permitted following submission for binding. Students will receive one hard-bound copy of the thesis at no charge. If additional hard-bound copies of the thesis are desired by the student, they should submit the appropriate number of copies on acid-free paper and pay the cost of the binding of the additional copies.

8. Students in XXX 494 shall also be required to present a brief (8 minute) synopsis of their project at the CTAS Senior Symposium to be held on a Saturday to be announced. A celebration of completion of Senior Projects will conclude the presentations of the day.

**VIII. Miscellaneous Information**

1. **Sample Copies**

   You are highly encouraged to look over past student’s theses to see what topics have been studied previously, how they organized the thesis, and what a finished product looks like. These theses can be found in the library.

2. **Incompletes**

   An incomplete may only be submitted by the Faculty Supervisor in situations which are determined by them to represent extenuating circumstances. The incomplete must be resolved...
according to the policy listed in the Student Handbook. No waivers are permitted for the oral defense.

3. Grading

All theses are provided with a letter grade (A-F) assigned by the Thesis Defense Committee but posted by the Faculty Supervisor.

4. Reimbursements

Students are responsible for covering the costs of the materials they use in their research as well as the duplicating costs of copying their theses, unless they have been given permission by the Department Chair to use department funds for reimbursement. This must be arranged between the student and Department Chair prior to the students’ incursion of debt and must be included in the Senior Thesis Proposal. If the department chair gives approval for reimbursement, the student must obtain the Banner Check Request Form (available in the Assistant to the Dean’s office) and turn it into the Assistant to the Dean for signatures and budget approval.

5. Audio/Visual Equipment Needs

Any Audio/Visual equipment needed for the research or for the presentation (including data point projectors, lap-top computers, overhead projectors, microphones, TV/VCR, or stereos) may be borrowed from the Help Desk located in Hagen Center. Arrangements to use the equipment must be made by the student or the Faculty Supervisor by contacting the Help Desk and scheduling usage. This may be done on-line on the Concordia University web site using the Media Services Request button.

6. Publication of Abstracts

Each year the abstracts of all of the theses defended in that year will be gathered into a journal for submission to our library’s permanent collection.

7. Thesis With Distinction

Some theses will be distinguished by the extent and quality of work presented both in the written thesis and in the public defense. Faculty thesis advisors may nominate their student’s thesis for designation as “Thesis with Distinction” following the regulations stipulated below.

Thesis with Distinction Committee

1. At the fall retreat, the Dean of CTAS shall appoint a three-member Thesis with Distinction Committee which will serve to determine which theses should receive this honor during the coming academic year.
2. The Thesis with Distinction Committee will elect from among its members a chairperson who shall be responsible for organizing meetings sufficient to carry out its responsibilities.
3. At the end of its function each term, the Committee shall present to the Dean the list of Thesis with Distinction recipients together with a brief description of their reasoning in recognizing the student’s work.

Process for nomination

1. Nomination by the thesis advisor should include a written discussion of how the thesis fulfills the characteristics described below. The statement from the advisor should also provide background information on the process of writing and research, and highlight any distinguishing characteristics. The nomination may be submitted electronically to committee members.
2. Along with the nomination, committee members should receive a copy of the thesis draft and notification of the time and place of the thesis defense.
3. Nominations should be submitted as early as possible, no later than a week before the scheduled thesis defense.
4. The committee may ask for an interview with the student who has been nominated. Thesis With Distinction Committee members will attend the thesis defense if at all possible.
5. The decisions of the committee must be unanimous in order for an award to be made.

Characteristics of an outstanding thesis that may merit an award of “Thesis with distinction”

1. The thesis addresses its subject in greater depth and with more sophistication than would generally be expected in undergraduate work.
2. The thesis shows significant originality and was carried out with a strong degree of self-guidance by the student.
3. A thesis meriting the award of “thesis with distinction” is not necessarily longer or more voluminous than any other thesis.
4. A thesis which merits designation as a “thesis with distinction” shows outstanding attention to the mechanics of writing and exhibits a fluent style of expression.

Awarding the Thesis with Distinction

1. After determination of which theses will be honored with this award, the student(s) will be notified of the award in a letter from the Dean.
2. A copy of the Dean’s letter will be placed at the beginning of the official copy of the thesis that will be stored in the library.
3. Awardees will be recognized at their graduation ceremony by the Dean and, if possible, at the Senior Symposium.
**FORM A: SENIOR THESIS TIME LINE**

*Typical timeline for a successful thesis completion on the CU campus*

<table>
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| **Spring semester of junior year** | • Register for XXX 492 Thesis Preparation.  
• Develop research idea and connect with library staff.  
• Write short preliminary proposal which includes methods and experimental design, or a description of the project.  
• Attend and critique two thesis defenses.  
• Propose project to potential faculty supervisor and arrange approval from him/her (Complete Form B and submit to Assistant Director of your department). |
| **Summer between junior & senior year** | • Begin literary research and develop bibliography.  
• Refine hypothesis or creative idea. |
| **Fall semester of senior year** | • Register for XXX 493 Thesis Part I.  
• Submit Proof of Enrollment (Form C) to Assistant Director of your department by 2nd Friday of the term.  
• Develop a list of specific goals for this semester in consultation with the Faculty Thesis Supervisor.  
• Order supplies & arrange access to necessary equipment if doing project on CU campus.  
• Submit Senior Thesis Proposal Form (Form D) to the Assistant to the Dean of CTAS by 10th Friday of the term.  
• Submit appropriate CURC documents if needed.  
• Describe scope of project in detail.  
• Do thorough literature review and complete bibliography or research if in English, History, Humanities, or Theology.  
• Start work on the “hands-on” portion of empirical research or project including data collection or creative activity, if appropriate. |
| **Spring semester of senior year** | • Register for XXX 494 Thesis Part II.  
• Schedule Thesis Defense early but no later than 10th week of term.  
• Complete research or project.  
• Submit preliminary thesis to Faculty Supervisor and Thesis Defense Committee members by the 8th Monday of the term.  
• Write thesis and submit final draft to Faculty Supervisor and Thesis Defense Committee by the 12th Friday of the term if the thesis is being defended in the fall or by the 13th Monday of the term if the thesis is being defended in the spring.  
• Prepare for and present oral thesis defense.  
• Present synopsis at Senior Symposium.  
• Edit thesis and submit a digital copy and two copies in proper format on acid-free paper to Dean’s office within 48 hours after defense.  
• Fill out Form F Library Permission Form and submit with final copy of the thesis to the Assistant to the Dean of CTAS. |
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<td>• Possibly prepare short presentation for professional conference in your area.</td>
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<td>• Consider possible publication of thesis in outside journals.</td>
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FORM B: SENIOR THESIS FACULTY SUPERVISOR ASSIGNMENT

Student Name: ________________________________________________________________
Student ID Number: ___________________________________________________________
Department: __________________________________________________________________
Proposed Completion Date of Thesis: _____________________________________________

Faculty Thesis Supervisor Name (please print): ___________________________________
Faculty Thesis Supervisor:_______________________________________________________

Faculty Supervisor signature    Date

This form must be submitted to the Assistant Director of your department prior to receiving credit for XXX 492 Thesis Preparation.

NOTE: If you plan to do research over the summer, you must get approval from the Concordia University Research Committee before any research takes place. For more information, please review the Research Proposal section of the Thesis Handbook and consult your thesis advisor.
FORM C: PROOF OF ENROLLMENT

College of Theology, Arts, & Sciences
Senior Thesis I, _____ 493

Proof of Enrollment

To be completed by the student after completion of _____ 492 Thesis Prep and no later than the 2nd Friday of the semester in which they are enrolled in _____ 493.

Completed ____ 492 Thesis Prep: Semester & Year ___________ Grade ___ (B or better)

Student Name: ________________________________________________________________

Student ID #: ____________________________

Course #: _______ 493     CRN: ___________  Semester & Year: ______________________

Faculty Thesis Supervisor Name: _________________________________________________

Faculty Thesis Supervisor Signature: _____________________________________________

Assistant Director Signature: _____________________________ Date: _________________

Submit original to: Assistant to Dean of CTAS Copy in student file: ____________

I acknowledge that I have received and read a copy of the Thesis Handbook and am responsible for meeting all the deadlines and requirements contained in it.

Student Signature: ___________________________________ Date: ____________________
FORM D: SENIOR THESIS PROPOSAL

Student Name: ________________________________________________________________

Student ID Number: ___________________________________________________________

Department: __________________________________________________________________

Course Number: ___________ CRN #: _____________ Term: _______________, 20___

Faculty Thesis Supervisor Name (please print): ____________________________________

Faculty Thesis Supervisor Signature: _____________________________________________

Thesis Defense Committee Members’ Names (please print):

Student-selected Thesis Defense Committee Member

Department Chair-Assigned Thesis Defense Committee Member

Thesis Defense Committee Members’ Signatures:

Student-selected Thesis Defense Committee Member

Department Chair-Assigned Thesis Defense Committee Member

CURC Approval or Waiver: _____________________________________________________

CURC Chair

Departmental Budget Approval:__________________________________________________

Department Chair signature

Account Number for any institutional expenses:_____________________________________

Please attach a summary of the thesis proposal including the following information:

1. A descriptive title

2. A general description of the basic question your thesis will answer or the creative approach your thesis will take

3. An outline of the proposed activities associated with the development of the thesis, noting the target dates for completion of each of the activities

4. Review of the necessary resources, materials, equipment, and financial support required to complete your thesis

__________________________________________________________________________ Date

Student signature

Note: The completed form and attachments must be submitted to the Dean’s office no later than the 10th Friday of the term in which the student is taking XXX 493.
STAT-3 Regulation of Survival and Lineage Commitment of Hematopoietic Progenitors Downstream of BMP Signaling

A senior thesis submitted to
The Department of Math-Science
College of Theology, Arts, & Sciences

In partial fulfillment of the requirements for a Bachelor of Arts degree in Biology

by

Polly Anne Thomas

Faculty Supervisor____________________________________________  _____________
Dr. Charles J. Kunert                         Date

Department Chair_____________________________________________  _____________
Dr. Sergei Polozov                                       Date

Dean, College of
Theology, Arts, & Sciences_______________________________________  _____________
Dr. Charles J. Kunert                                  Date

Provost_______________________________________________________  _____________
Dr. Mark Wahlers                                        Date

Concordia University
Portland, Oregon
May, 2006
FORM F: LIBRARY PERMISSION FORM

Permission to store and make available for use my thesis

I, ______________________________________, do hereby irrevocably consent to and authorize the Concordia University Library to catalog and file the thesis entitled ______________________________________________________

and to make the thesis available in both paper and electronic formats for use, circulation, and limited reproduction by users at the Concordia University Library. I do not, however, relinquish my copyrights.

______________________________________________ (Signature)

____________________ (Date)