

2009/2010 ENGINEERING HONORS PROGRAM

THESIS MANUAL

Essential Matters

You will find all [thesis forms](#) (registration, second reader) available to read or download from the Engineering Office of Student Affairs EHP website.

Important announcements regarding thesis deadlines and requirements will be sent through e-mail. It is your responsibility to know these deadlines and requirements.

Everyone is required to participate in the thesis symposium. You cannot graduate with special honors if you do not participate in a symposium.

Tips for a Successful EHP Honors Thesis

- You should seek a supervising professor you know. Your supervising professor must be UT faculty. Second readers must be regular UT faculty members or established experts in the field.
- Do not wait until the last minute to find a second reader. You must submit your work to the second reader by the twelfth week of classes.
- If you and your supervising professor seem to have too many differences, speak to Pam Dahl as soon as possible - better early than late. Do not suffer in silence or let your thesis suffer.
- No thesis should cause pain and anguish. You should never be depressed over your thesis. If you are feeling anxious, overwhelmed, or isolated, come see us. This should be a rigorous, exciting and challenging opportunity, not a torture.

Questions as You Begin

What is an EHP Honors thesis?

Your honors thesis should be the culmination of your undergraduate studies at The University of Texas at Austin. You should examine an area of research that could be part of your career after graduation. It could also be an area for graduate studies.

When should I take the thesis course?

We recommend that you complete at least half of the technical requirements for your engineering degree before starting your honors thesis.

Do I need to find a supervisor?

Yes. You will need to find both a supervisor and a second reader. The supervisor must be a professor at UT. Second readers must be regular UT faculty members. Your readers should be very familiar with, if not an expert in, your field of investigation. See section "You and Your Professors".

What kind of project may count as a thesis?

Almost anything you can imagine. Typically the EHP honors thesis is a report on experiments in science and engineering. It typically develops out of research done in a professor's laboratory. The EHP honors thesis can be generated from a design oriented project such as the space satellite done by ASE students.

What do I do in the first semester of a two-semester course?

Typically you will be participating in the laboratory work of your supervising professor formulating and gathering data for your thesis.

What is the thesis symposium?

There will be a thesis symposium twice a year, in fall and spring, about halfway through the semester. Every student is required to participate in the symposium during the semester he or she plans to finish the thesis. Students are graded on their thesis presentations.

What do I have to do?

Present the ideas behind your project in a twelve-minute talk and listen to the presentations of other participants with interests similar to yours. This will give you a chance to explain your topic to others, and to hear their response. The experience should help you finish your thesis.

Is there financial support available for special thesis expenses?

At the present time the Cockrell School of Engineering does not provide financial resources to support individual students in the EHP Honors Thesis program. Some faculty have access to resources that could be used. Consult with your supervising professor. Students are strongly encouraged to apply to other sources of support such as the Undergraduate Research Fellowships.

<http://www.utexas.edu/research/vp/awards/>

How do I graduate with special honors in engineering?

You can graduate with special honors in engineering if you have an in residence GPA of 3.5 or higher, complete the two-semester thesis (XX 679H) with an A in each semester, and pass an oral exam.

Engineering places two conditions on the submission of an honors thesis:

1. You must submit a suitably printed and bound copy of your thesis to the EHP.
2. You must take part in the thesis symposium.

May I get special honors in two degree programs?

No. You may not, for instance, receive special honors in Plan II and special honors in Engineering. You are still eligible for University honors (honors, high honors, or highest honors), which are determined by your grade point average.

Topic

Finding a Topic

It is never too early to start thinking about a topic. Choose a topic that will hold your enthusiasm for the duration of the project. Think about ideas that interest you. Talk to your professors about subjects that interest you. If you already know which professor you would like to work with, go brainstorm with him or her.

Do not forget about the wonderful resources at libraries such as the Richard W. McKinney Engineering Library located in ECJ 1.300. Call 495-4500 for library hours or visit the [library's website](#).

For a complete listing of all campus libraries and their services, see the [UT Library On-line](#).

Background and Experience in Your Topic

You must have some background in your topic. Your departmental honors advisor reviews thesis proposals and may ask for modifications in your proposal before approving it, especially if you do not yet know enough about your field. It is impossible to define a topic unless you already know something about it. You do not need to be a specialist in the area, but you will have to show that you have some general knowledge of the subject before your topic is approved.

Normally, one or two courses will be enough to provide a foundation for your thesis work, but you may also have real-life experience to build on that is as good as, or better than any coursework.

If You Need Help

Your departmental honors advisor will be happy to advise you and assist you in finding a supervisor or in defining your topic, especially if you do not put it off until the last minute.

Human Subject Research

Students working on a thesis that involves human subjects in any way (and this includes just interviewing peers on campus) must complete and submit to the EHP Director documentation and forms for approval from the university Institutional Review Board (IRB). Students must then wait for formal approval from Office of Research Support and Compliance before they may begin their research. The IRB website is:

<http://www.utexas.edu/research/rsc/humansubjects/>. If you have any questions regarding whether or not you need to file an IRB or how you should fill one out, contact the Office of Research Support and Compliance (471-8871).

When to Register

You may enroll in the thesis course during the early registration period or at the beginning of the semester during registration. You must turn in your approval form to the EHP Director by the eighth class day of the semester you plan to start your thesis.

You and Your Professors

Finding a Supervisor

Your supervisor should be a UT Austin professor with whom you are acquainted or who may have taught you one or more courses. If you are having trouble finding a supervisor, consult with your departmental honors adviser. They know the faculty and can give good advice.

The First Meeting

Make an appointment to meet with a potential supervisor to brainstorm, to find a topic or discuss the topic you have chosen. That is usually safer than dropping in during office hours. If you already know the professor, you can probably connect your topic to work you have already done for him or her, but if the professor is a stranger, you will have to work a bit harder to introduce yourself and present your qualifications. In either case, you should be prepared to explain your proposal. But do not consider your topic as engraved in stone; the professor will probably offer suggestions for refining or reshaping it, and you should be open to these ideas.

You may have to meet with several professors before finding the right one, so we urge you to begin this process well before the deadline for turning in your thesis proposal form. If a professor you visit is too busy or feels unqualified to be your supervisor, he or she may agree to act as the second reader. If the professor declines, ask him or her to refer you to a colleague.

The Role of the Supervisor

The supervisor is an adviser who guides your research, provides constructive criticism of your writing, and assigns your grades for the thesis course, in consultation with the second reader. If your supervisor judges your work to be an acceptable honors thesis, he or she will sign your title page.

You should meet with your thesis supervisor regularly, at least once every two weeks, to discuss your progress. Make sure that you and your supervisor understand what you expect from each other; we recommend that you put your expectations in writing at the start. Early in the process, your supervisor will offer suggestions, directions, and advice to help you narrow down your topic to something you can cover well.

Make sure you hand in your drafts and meet all deadlines agreed upon by you and your supervisor, signed and submitted in writing to the EHP office, so that he or she has plenty of time to go over each draft with care in order to give you useful comments.

The Second Reader

Second readers must be regular UT faculty members.

The second reader is an adviser who reads your thesis, gives you helpful comments, and signs your title page if he or she judges your work to be acceptable as an honors thesis. It is your responsibility to talk to your second reader and work out what you expect from each other. Be clear about dates: when drafts are due, how often you need to meet, etc. If your topic crosses fields, then the second reader's expertise may complement that of your supervisor, and he or she might meet with you regularly throughout the semester(s). Moreover, if you are indeed writing an interdisciplinary thesis, be sure that your work does take into account the scholarly practices of different fields. Scholars from different fields read theses with different expectations.

Your second reader must receive the thesis by the twelfth week of classes. Often, however, the second reader will want to see a rough draft earlier so that you can incorporate his or her comments into your final copy.

Finding a second reader is like finding a supervisor, only easier. Usually your supervisor will help you in your search. If not, follow the steps for finding a supervisor or ask your departmental honors advisor for advice.

Stages and Deadlines

Getting Started

In the early stages, we recommend regular visits to your supervisor. This is the time to read, think, and tighten the focus of your topic. A thesis often starts with a question that you want to answer through research.

Beginning to Write

Do not be afraid to start writing before you have worked everything out. You may not know your conclusion when you start. Writers often do not find out what it is they are trying to say until well into the writing process, so you should start writing when your schedule tells you to, whether you feel ready or not. Write what you know first. Begin writing where you feel most confident, which may not turn out to be the actual beginning of the thesis. As you approach the end of your writing, study the summary of requirements in Appendix 1 and make sure you are doing what is required.

Deadlines

The deadlines stated in the thesis schedules in the back of this manual are considered binding for all students unless the student and first reader mutually agree to a different schedule and submit a written, signed copy of that schedule to the EHP office by the end of the third week of classes. See schedules.

The Thesis Symposium

The Format

The thesis symposium is an informal academic conference. You will give a twelve-minute presentation about your thesis after which the audience (faculty, students, alumni, and family) will ask questions, offer suggestions, and make comments. You may want to attend at least one session in addition to the one in which you present to get a feel for what they are like and the expectations. You will be graded on your presentation, and the grade will count for 15% of your final grade. The Director of the EHP therefore reserves the right to alter a thesis grade on the basis of the student's performance at the thesis symposium. Standards and criteria for grading will be available prior to the symposium.

Planning Your Talk

You may not be completed with your thesis at the time of the symposium, so you will present a work-in-progress. As you put together your presentation, you might want to consider the following questions:

- What problem or question are you investigating?
- What have you found so far?
- What unexpected problems have you encountered, and did you resolve them?
- What have you learned?

You will be talking to people who may not be experts in your field, so make sure you explain all technical terms and avoid jargon. Do not try to do too much. Twelve minutes is not very long, so make sure your presentation is organized and that you get to your main points quickly.

In your presentation you will typically speak from notes. If you write out your talk, you can be certain of its length. Count on about two minutes per double-spaced page.

Practice your presentation beforehand several times. Make sure you know what you want to say and how long it will take you to say it.

Evaluation

Presentations are graded, and faculty moderators will provide us with overall evaluations of each session. Students who were unprepared for their presentation will be asked to do another presentation at a later date and will almost certainly be deprived of Special Honors.

Standards

Revision, Review and Grading

Either your supervising professor or second reader may call for further revisions to your final paper. Be sure you know in advance what standards your professors expect you to follow. If your supervisor expects too much, let the EHP director help you resolve this before it is too late.

The EHP office requires that you submit your thesis in a particular format. The supervisor and second reader have the final say on both standards and grading.

Varied Set of Standards

We cannot enforce a single set of standards on every thesis, as standards for both research and format vary from field to field. What follows is a set of guidelines that you should read before starting. If the thesis you plan to write

does not conform to one of these standards, or if you have special reasons for seeking an exception, ask the EHP director in writing for approval.

Subject

Although you may not know exactly what you are doing at the start, a finished thesis should have a well defined problem or purpose clearly stated in the introduction. A research thesis should use primary material when it is available. A technical thesis may be written in the technical language of its field, but the abstract and the conclusion must be written for the intelligent layperson.

In all cases, you should write the introduction, conclusion, and abstract as if you were addressing the interdisciplinary board of a grant-giving agency and had to explain the significance of your project to a group of intelligent people who did not have in-depth knowledge about your field.

Methodology

Your thesis should follow the rules of the discipline of your topic. For example, a ME thesis should use one of the methods acceptable in ME, while ECE and CHE theses should follow conventions in use in those fields. There is more flexibility, however, for theses that are interdisciplinary. If you are writing a thesis that crosses disciplines, you, your supervisor, and your second reader should determine what methods you will use.

Conclusion

Your thesis should have some sort of conclusion. No thesis will be accepted that is plainly unfinished. A thesis that breaks off after thirty pages without a conclusion is not acceptable.

Length

Our guidelines are approximately 7500 words for two-semester XX 679H theses. This may vary, however, with the nature of the thesis.

Citations

You must use notes that cite the sources of your information and give credit for ideas and phrases that are not your own. Footnotes, endnotes, and parenthetical notes are all acceptable, but you should pick a style compatible with the discipline or disciplines represented in your thesis and use it consistently. Please do not use parenthetical notes if you plan to put substantive information in your notes. (See Appendix 2 for a list of style manuals.) Whichever style you pick, consistency is the basic requirement.

You must cite both direct quotations and paraphrases. When you paraphrase, you must use your own words and sentence structure, rather than echoing the sentences of the original source. Do not be surprised if your thesis has lots of notes. A person reading your thesis should be able to tell what information is from your original research and what had its source in work done by others. Do not forget to cite charts, tables, and maps that you did not make yourself.

The use of another person's ideas or words without proper attribution is plagiarism, a serious form of academic dishonesty. We encourage advisers who suspect plagiarism in a thesis to follow the guidelines set by the Dean of Students' Office. The penalty for plagiarism in a thesis is usually failure of the thesis course. Sometimes unintentional plagiarism can occur, but you can guard against this with careful note taking.

References

Your thesis should have a list of works cited, following one of the standard bibliographical forms.

Format

A thesis should be neatly typed or laser-printed on numbered pages with one-inch margins. It should follow a manual of style that is in use in its field. A thesis must be well proofread. A manuscript with more than a few errors in spelling, grammar, or punctuation will not be accepted.

Submitting the Thesis and Oral Exams

Presentation

Your thesis will represent many hours of hard work. It should be neatly printed on good quality paper and well bound. Use chapter headings if you can and provide a table of contents, with page numbers for the start of each chapter or section.

Binding

Your thesis should be bound. All theses are required to have your name and thesis title on the spine, so the spine should be "closed." There is no one way to put titles on the spine; just make them neat and long-lasting.

Number of Copies

Make at least four copies of the final thesis. One copy is for the supervisor, one for you to keep, and one is reviewed by the EHP director and eventually placed on display in the EHP office. Many students also give the second reader a copy.

Keep in mind that commercial copy shops are very busy at the end of a semester.

The Oral Exam

Students seeking special honors in engineering must pass an oral exam given by the supervisor and second reader. This lasts about an hour.

The oral exam is a meeting in which you discuss your thesis with both your readers. This is your last chance to get their feedback and is an opportunity for you to teach them something. Though informal, this is a special occasion marking the completion of your project. Your readers will ask you questions, and you may have questions for them.

Readers of Your Thesis

Your supervisor and second reader will read your thesis. Prospective employers and graduate schools are sometimes interested. So are your parents, so make them a copy. Be aware that your thesis will not be kept confidential, except in very unusual and specific circumstances, which the EHP director must approve in writing beforehand.

Grades

Range of Grades

A full range of grades may be given for honors theses, from A to F. Work that is not up to a high standard should not receive an A. If you turn in a thesis that is below average, and you receive a lower than expected grade, you may be given an opportunity to rewrite it. This should be discussed with your supervisor.

Guidelines for supervisors, first readers

1. You should meet with your supervisor regularly every two weeks to discuss drafts or written notes. If a different schedule has been agreed upon by the supervisor and the student, it must be submitted in writing to the Engineering Student Affairs Office within the first three weeks of the semester for which the student is enrolled, and signed by the student and the supervisor. Any adjustments to the schedule must also be submitted and signed.
2. You should give your supervisor a full draft of the thesis by around April 15 (November 12 for fall theses). The EHP does not consider exceptions or extensions to this deadline unless an alternate schedule has been agreed upon and submitted in writing to the EHP director within the first three weeks of the semester. To be acceptable by the EHP, a thesis must have

- been presented to the supervisor in time for revision before final submission.
3. The student made a reasonable attempt to revise as the supervisor suggested.
 4. In the process the student faced, identified, and surmounted a problem in research or creative process.
 5. The thesis is worth a passing grade (C or better), agreed upon by supervisor and second reader. Only those that meet the highest standards for honors work should receive an A.
 6. If a thesis does not meet all five requirements, you may assign it an incomplete and allow the student to finish by a date convenient to you and the second reader. Otherwise, assign it a grade of F.

If you find the thesis especially distinguished, please tell the EHP director, and it will be considered for a model thesis list.

Final Grade: All EHP students must participate in the EHP Thesis symposium, and they will be graded on their presentations. The final grade for their thesis will therefore be composed as follows: 85% thesis grade agreed upon by first and second reader; 15% symposium grade. The Director of the EHP therefore reserves the right to alter a thesis grade on the basis of the student's performance at the thesis symposium.

FINAL DATE FOR SUBMISSION: Students who submit the final bound copy after the deadlines (Wednesday of last week of classes) assume the risk that their grades may not be posted in time for final grades or graduation.

Second Reader Guidelines

1. The second reader should receive a full draft of the thesis by the end of the 12th week of classes. The EHP does not consider exceptions or extensions to this deadline unless an alternate schedule has been agreed upon and submitted in writing to the EHP director within the first three weeks of the semester. To be acceptable by the EHP, a thesis must have been presented to the supervisor in time for revision before final submission
2. The thesis is worth a passing grade (C or better), agreed upon by supervisor and second reader. Only those that meet the highest standards for honors work should receive an A.

If a thesis does not meet these requirements, with the second reader's approval, the supervisor may assign it an incomplete and allow the student to finish by a date convenient to you.

FINAL DATE FOR SUBMISSION: Students who submit the final bound copy after the deadlines (Wednesday of last week of classes) assume the risk that their grades may not be posted in time for final grades or graduation.

XX 679HA Grades

The grade for the first semester of the two-semester thesis course should be based on the amount of research you have done and the quality of the outline of your thesis, which is due at the end of the first semester. Talk with your supervising professor early in the first semester about how much work he or she expects from you and when he or she expects drafts in order to assign you a grade at the end of the term.

You must have a passing grade on record (not an X or incomplete) for XX 679HA before you will be allowed to register for the second semester. If you do receive an X at the end of the first semester, you must remove the X by the twelfth class day of the next semester in order to continue in XX 679HB.

An Unfinished Thesis and Graduation

It is not the end of the world if you do not finish your thesis on time. We do not encourage incompletes, but we understand that sometimes a thesis takes longer than expected. Of course, if you do not finish, or your thesis is judged unacceptable, and if your thesis is required to meet degree requirements, you cannot graduate until the thesis is completed and approved.

If you do take an incomplete, you must agree on a new schedule with your supervisor. Tell the EHP director what this schedule will be and when you plan to graduate. It is your responsibility to keep up with the deadlines set by the Engineering Office of Student Affairs for students with incompletes and to keep in touch with the degree auditor.

Be especially conscientious if you want to finish and graduate during the summer, since faculty members are often not on campus. Make sure that your supervisor and second reader have the time to work with you in completing the thesis in time for you to be certified for graduation.

Appendix 1: Summary of Requirements

If you do not think that you should be held to any of these requirements, appeal in writing to the EHP director for an exception before you register for the thesis course.

Thesis symposium: You may not submit a thesis for the EHP until after you have participated in a thesis symposium.

Thesis length: Thesis length may vary with the nature of the thesis. This guideline applies to most cases: approximately 7500 words for XX 679H. To measure the length of your thesis, simply run a word count on your computer.

Format: Your thesis should be typed or laser-printed, double-spaced, with one-inch margins.

A **conclusion** or afterward is required for most theses.

Citations

Citations should follow a consistent style, along with references to sources. If you are unsure which style to use, speak with your supervisor or your departmental honors advisor.

Direct quotations should be indicated as such and their authors properly cited. When quoting a passage of more than three lines, present the quotation without quotation marks, indented, single-spaced, and in block form.

A list of works cited is required for most theses. As with citations, formats for bibliographies may vary depending on your topic and discipline. Consistency is the fundamental requirement.

Pages should be numbered.

Chapter/section headings should be used to organize the thesis.

A table of contents is strongly recommended.

Required pages:

1. A proper title page, which includes the signatures of the supervisor and second reader.
2. A one-page abstract briefly summarizing the thesis should follow the title page; see the model in this manual. The abstract should be bound in the thesis after the title page and before the table of contents. When the thesis is completed, we would like a separate copy of the abstract (apart from the thesis) submitted to the EHP office so that we may file all of the abstracts together.
3. A brief biography or vita of you should be the last page of the thesis.
4. Your thesis should be bound so that the spine is closed. Copy shops provide what is called "fast back" binding. Your name and the title of the

thesis should be on the spine of the bound thesis. Whatever method you use, make sure it is neat and durable.

Appendix 2: Style Manuals

The following are some standard style manuals:

Gibaldi, Joseph. *MLA Handbook for Writers of Research Papers*. 7th ed. New York: Modern Language Association of America, 2009.

American Psychological Association. *Publication Manual of the American Psychological Association*. 5th ed. Washington, DC: American Psychological Association, 2001.

Turabian, Kate. *A Manual for Writers of Research Papers, Theses, and Dissertations*. 7th ed.

Chicago: University of Chicago Press, 2007.

Hacker, Diana. *A Pocket Style Manual*. 4th ed. Boston: Bedford/St. Martin's, 2004.

CBE Style Manual Committee. *Scientific Style and Format : The CBE Manual for Authors,*

Editors, and Publishers. 6th ed. Cambridge ; New York: Cambridge University Press, 1994.

Columbia Law Review. *The Bluebook: A Uniform System of Citation*. 18th ed. Cambridge,

Mass.: The Harvard Law Review Association, c2005.

The University of Chicago Press Staff. *The Chicago Manual of Style*, 15th ed. Chicago :

University of Chicago Press, 2003.

The 2009-2010 Engineering Honors Program Office Staff

Pam Dahl, EHP Coordinator

pamdahl@mail.utexas.edu

EHP office in Kinsolving C 100B

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