

# Honors Program in the Computer Science-LSA Major

Computer science has transformed not only the way people compute, but also the way they communicate, interact with each other, and view the world. The Honors Program in Computer Science-LSA provides an opportunity for talented, ambitious undergraduates to take part in the computing revolution by completing an original research project. Students contemplating graduate study in computer science or a related area are especially encouraged to consider this program. Membership in the LSA Honors College is not a prerequisite for participating in the Honors Program in Computer Science.

Students in the Honors Program conduct research under the supervision of a CSE faculty member and report their findings in an honors thesis presented in a public forum. The thesis is a written research report similar in content and format to a paper that could be submitted to a research journal or a conference with published proceedings (it does not have to be actually submitted). The presentation is likewise similar in content and format to a conference research presentation.

## Honors Program Requirements

To be eligible to graduate with honors in Computer Science, students must complete all requirements for the Computer Science-LSA concentration and satisfy the following:

- Achieve a GPA of 3.2 or higher in the pre-concentration courses (MATH 115, 116, and EECS 203, 280)
- Graduate with an overall GPA of 3.4 or higher
- Graduate with GPA of 3.5 or higher in the CS-LSA concentration
- Complete the Senior Thesis course EECS 443 by producing a written report of the research results. This course may be used to satisfy the Capstone Course requirement of the CS-LSA concentration
- Make a public oral presentation of the research and results in the thesis.
- Satisfy the thesis advisor and second reader that the thesis report and presentation deserve the honors designation.

The Chief Program Advisor of CS-LSA will certify to the University that all requirements for honors have been met.

## Honors Program Timetable

- **Determine Thesis Advisor:** Each honors student is responsible for finding a faculty mentor whose research area aligns with the student's interests and who is willing to oversee the thesis project. In many cases students learn about faculty members' research through coursework. They may also consult faculty web pages, attend departmental talks and other departmental events, and make appointments with faculty members to discuss research possibilities.

A student should identify an advisor no later than the early fall in the senior year. Note, though, that students planning to apply to PhD programs during their senior year should identify their advisor in their junior year, and complete the thesis course by the fall of their

senior year so that their thesis experience can be included in the PhD applications (due typically in December/January). The advisor can be a member of CSE or another unit of the University. If the advisor is not a member of CSE, the student must also identify a co-sponsor from within CSE.

- **Submit Proposal:** The faculty member who has agreed to serve as advisor and the student should discuss the research project. Together they should complete an Honors Proposal form (obtained from and returned to the EECS Undergraduate Advising Office in 2808 BBB). This form must be submitted no later than six months prior to graduation; i.e., Nov. 15, July 15, or March 15, depending on the anticipated graduation date. The CS-LSA Chief Program Advisor will review the form to determine if the proposal qualifies for honors designation.
- **Determine Readers:** Prior to submission of the proposal, the student and the research mentor should discuss the choice of a second faculty reader. Readers must agree to turn in their evaluations within ten days after the thesis is submitted.

It is possible for a faculty member outside of CSE (including, possibly, an advisor for an honors thesis in another concentration) to serve as second reader of the CS-LSA honors thesis, subject to approval of the CS-LSA Chief Program Advisor.

- **Admission to the Honors Program:** The Chief Program Advisor will decide whether the proposal is acceptable and the student's grades are indicative of successfully meeting the honors GPA requirements. If so, students and advisors will be informed of the admission decision by email.
- **Register for Thesis Course:** On formal admission to the honors program, students should register to take the appropriate section of the Senior Thesis course EECS 443 in the semester they write the thesis. Students should ask the advisor for his or her independent study section number or consult the list posted in the Undergraduate Advising Office. EECS 443 satisfies the Capstone Course requirement for the CS-LSA concentration. A passing grade in this course does not indicate that a student will receive honors designation.
- **Make Steady Progress:** Coding, surveys, experiments, and especially writing, take longer than most people think. Smart scheduling will help avoid disaster.
- **Submit Honors Thesis and Make Oral Presentation:** The thesis will be submitted to the advisor, second reader, and the EECS Undergraduate Advising Office no later than April 1, August 1, or December 1, depending on the anticipated graduation date. Delayed submission of a senior honors thesis will delay a student's graduation. The College of LSA will not retroactively award an honors degree. Students who need to delay the completion of their thesis will have to delay graduation if they wish to graduate with an "honors" designation.

The oral presentation will be scheduled for no later than April 7, August 7, or December 7, depending on the anticipated graduation date. The student will present the research results in an advertised public forum, such as a class, poster session, or a departmental seminar.

Readers of the honors thesis are expected to file their evaluations with the EECS Undergraduate Advising Office within ten days after the thesis is submitted. The reports of all readers should address the quality of the research reported in the thesis, as well as the quality of the written and oral presentations.

- **Receive Results:** The Chief Program Advisor will examine the evaluations from the research advisor and second reader, as well as the other requirements, and will report to the University whether the student should be awarded an "honors" designation. If the work is not acceptable, then honors designation will not be granted, regardless of any grades received or other requirements met.

## **Multiple Honors**

- LSA College Honors Program rules state that students declaring honors in two or more different concentrations must complete a separate honors thesis in each concentration.

## **Evaluation Criteria for Thesis and for Oral Presentation**

### **Relevance**

Is the research relevant to computer science?

### **Significance**

Are the results important? Are practitioners or researchers likely to use these ideas or build on them?

### **Soundness**

Is the thesis technically sound? Are the concepts correct and accurate?

### **Novelty**

Are the problems or approaches novel (or a novel combination of familiar techniques)? Is it clear how this work differs from previous contributions?

### **Analysis**

Are claims well-supported by theoretical analysis or experimental results? How convincing is the evidence in support of the conclusions? Is the thesis careful and honest in evaluating both the strengths and weaknesses of the work? Is the evaluation appropriate for the contribution?

### **Clarity**

Is the thesis clearly written? Is it well-organized? Does it adequately inform the reader? A well written paper should provide enough information for the expert reader to reproduce its results.

### **Organization**

Are the results and exposition presented in a logical, coherent manner? Are there cogent introduction and conclusion sections?

### **Scholarly Background**

Does the paper connect to previous work in the area? Is it well referenced?

### **Quantity**

Your thesis advisor will help you determine if the quantity of work is sufficient for honors designation. Length alone will not determine this. Often the challenge of a conference submission is to present a complete description of a research project within a very restricted number of pages.

# CS-LSA Major Honors Proposal Form

Must be submitted to the CSE Undergraduate Advising Office, 2808 BBB, no later than:

- November 15 to enroll in EECS 443: Honors Thesis, for Winter term
- July 15 to enroll in EECS 443: Honors Thesis, for Fall term
- March 15 to enroll in EECS 443: Honors Thesis, for Spr/Sum term

Please attach a **one-page research plan summary** initialed by the Thesis Advisor.

\_\_\_\_\_  
Today's Date

\_\_\_\_\_  
Name (Please Print)                      Uniqname                      UM ID (8 digits)                      Graduation Date

\_\_\_\_\_  
Thesis Advisor (Please Print)                      Signature                      Uniqname

\_\_\_\_\_  
CSE Co-Sponsor (if Thesis Adv. is not CSE)                      Signature                      Uniqname

\_\_\_\_\_  
Second Reader (Please Print)                      Signature                      Uniqname

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To be completed by the CSE Advising Office and Chief Program Advisor

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Overall GPA

\_\_\_\_\_  
GPA in CS-LSA                      Approved                      Denied                      Chief Program Advisor Initials