General Studies: Focuses on breadth of study through taking honors courses.

Advanced Scholarship: Gives students a chance to conduct original research over two semesters under the supervision of a faculty member.

- Departmental Honors: For students who wish to undertake advanced research within their major.
- Multidisciplinary Honors: For students who want to design honors programs of study outside of their major or between their major and other disciplines.

Source: https://www.honors.umass.edu/curriculum-overview
## Honors Program Options

<table>
<thead>
<tr>
<th>Departmental Honors</th>
<th>Multidisciplinary Honors</th>
<th>General Studies Honors Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>One CS honors course any level (excluding service courses). One CS honors course at the 300+ level. Can also use some 500/600</td>
<td>4-5 Honors courses from more than one discipline including the Honors Thesis or Project.</td>
<td>5 General Studies Honors courses, including Honors Writing 112H.</td>
</tr>
<tr>
<td>Honors Thesis or Project advised by a <a href="#">CS faculty member</a>.</td>
<td>Honors Thesis or Project advised by a faculty member in a different department.</td>
<td>No honors thesis or project.</td>
</tr>
<tr>
<td><a href="#">Commonwealth Honors Scholar</a> on diploma and transcript. <a href="#">Departmental Honors</a> listed on transcript.</td>
<td><a href="#">Commonwealth Honors Scholar</a> on diploma and transcript. <a href="#">Multidisciplinary Honors</a> listed on transcript</td>
<td><a href="#">General Studies Honors</a> on transcript.</td>
</tr>
<tr>
<td>Apply using form on CS honors website.</td>
<td>Need to apply directly to CHC.</td>
<td>Meet with a CHC Advisor to opt out of advanced studies.</td>
</tr>
</tbody>
</table>

Source: [https://www.honors.umass.edu/academics/curriculum/compare](https://www.honors.umass.edu/academics/curriculum/compare)
CS Honors Track: Research Requirements

Part I – Preparation: Students spend one semester acquiring the background needed to do research in their desired area and developing a thesis/project proposal. Two options: individual or course-based. Typically 3 credits.

Part II – Project/Thesis: Students spend one semester performing research. The final deliverable is a written thesis document (499T) -- or a written project report (499P). Both require a project presentation. Typically 3 credits.

Source: https://www.honors.umass.edu/capstone-experience
**CS Honors Track: Admissions**

**Course Requirement:** Students must have completed the 200-level core requirements for their degree type to be admitted to the track (all of 220, 230, 240, 250 for BS students; three of the four for BA students).

**GPA Requirement:** The minimum GPA to be admitted to the track is 3.4.

**Advisor Match:** This semester, we are requesting that students find an advisor before requesting admission to the track.

Source: https://www.cs.umass.edu/forms/cshonors-admission-application-form
CS Honors Track: Recommended Timeline

**Fall Junior Year**
- Find Research Advisor
- Submit Application
- Choose Prep Option

**Spring Junior Year**
- Take 499Y
- Take 691DD
- 499 T/P Proposal

**Fall Senior Year**
- Take 499T/P
- Submit Thesis or Project

Source: [https://www.cs.umass.edu/ugrad-education/cs-departmental-honors-timeline](https://www.cs.umass.edu/ugrad-education/cs-departmental-honors-timeline)
CS Honors Track: Research Advisor Listings

For Undergrads
Undergraduate Program
- BS
- BA
- CS Minor
- Honors
  - Admissions
  - Requirements
- Timeline
- Research Advisors
  - Second Bachelor's Degree (Post Grads)
- Informatics in CS - (BDIC)
- IT Minor

Courses
- Registration & Advising
- Resources & Events
- Student Organizations
- Scholarships & Fellowships
- Contact Us
- FAQ

CS Departmental Honors - Research Advisor Listings

The table below lists the faculty who are actively looking to work with honors students. The table lists the faculty member's primary research area, the courses they would like you to have taken to work with them, and the number of honors research positions they currently have open. The full listing of computer science faculty is available here. Students should be admitted to the Departmental Honors program before contacting potential research advisors.

Honors Research Openings - Spring 2014

<table>
<thead>
<tr>
<th>Advisor</th>
<th>Research/Project Areas</th>
<th>Desired CS Courses</th>
<th>Open Positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof. Berger</td>
<td>Programming languages and systems</td>
<td>311, 320, preferably 383, possibly 377</td>
<td>2</td>
</tr>
<tr>
<td>Prof. Brun</td>
<td>Software Engineering</td>
<td>320 and 311</td>
<td>1</td>
</tr>
<tr>
<td>Prof. Grupa</td>
<td>Robotics</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Prof. Melling</td>
<td>Data and Information Management</td>
<td>390DB or 445</td>
<td>1</td>
</tr>
<tr>
<td>Prof. Osterweil</td>
<td>Process Modeling and Simulation</td>
<td>320</td>
<td>2</td>
</tr>
<tr>
<td>Prof. Towley</td>
<td>Networks</td>
<td>453</td>
<td>1</td>
</tr>
<tr>
<td>Prof. Weems</td>
<td>Computer architecture, embedded systems, iOS applications</td>
<td>3911B or 4911P</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: https://www.cs.umass.edu/ugrad-education/cs-departmental-honors-research-advisors
CS Honors Track: Admissions

For Undergrads
Undergraduate Program
BS
BA
CS Minor
Honors
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CS Departmental Honors - Admissions

Students who are currently members of the Commonwealth Honors College and have an overall GPA of 3.4 or higher (earned after one full-time semester of UMass Amherst coursework) are eligible to apply for the CS Departmental Honors track. However, we suggest that students apply in the fall of their junior year. Interested students should use the form below to apply for admission to the CS Departmental Honors track. Make sure to complete all fields marked with an ‘*’.

Any questions about the Departmental Honors track or the admission process can be sent to askCSHonors@cs.umass.edu.

LAST NAME: *

FIRST NAME: *

UMASS EMAIL ADDRESS: *

@umass.edu

UMASS STUDENT ID NUMBER: *

CS DEGREE TYPE?:
- BA
- BS
IS CS YOUR PRIMARY MAJOR?:
- YES
- NO

Source: https://www.cs.umass.edu/forms/cshonors-admission-application-form
CS Honors Track: 499Y Proposal

Contract Form

Semester Plan (2-3 pages)

Source: https://www.honors.umass.edu/sites/.../files/forms/CE/499YRegistrationContract.pdf
CS Honors Track: 691DD – Research Methods

CMPSCI 691DD: Seminar - Research Methods in Empirical Computer Science

This course introduces graduate students to basic ideas about conducting a personal research program. Students will learn basic methods for activities such as reading technical papers, selecting research topics, devising research questions, planning research, analyzing experimental results, modeling and simulating computational phenomena, and synthesizing broader theories. The course will be structured around three activities: lectures on basic concepts of research strategy and techniques, discussions of technical papers, and preparation and review of written assignments. Significant reading, reviewing, and writing will be required, and students will be expected to participate actively in class discussions. 3 credits.

Restrictions: Your research must have a suitable empirical component and you must work with your honors advisor throughout the semester to select a project topic.

Source: https://www.cs.umass.edu/ugrad-education/spring-15-course-descriptions
CS Honors Track: 499T/P Proposal

Brendan Murphy  
Commonwealth Honors College  
499TP Proposal

The goal of my honors project is to enhance an existing web application which is being developed by Professor Richards and his research team that automatically records lectures that take place in the Computer Science building and uploads them online.

Background

As we enter the digital age, many of the services and systems that used to exist solely on paper and in person have become digitized. This can be seen from things as trivial as the daily newspaper to as important as banking. It seems that in this day and age nearly everything that one needs is available at the click of a button. However, one system that has not evolved with the web is the classroom experience. Even though there are plenty of platforms available that provide lecture videos for free, there currently is not any application that attempts to recreate the entire lecture experience in an accessible format. I have chosen to pursue this project since I believe it is an area of web-based academia that greatly be enhanced.

Technologies

The following technologies will be the main frameworks that I will be using to develop the features that I will add to the application.

- Node.js is a javascript framework that is used for building distributed web applications. Contrary to older web systems that make use of multithreading to handle new connections, Node.js makes use of callback functions to mimic the concurrency of having multiple open connections at any time. Node.js does this because multithreading is more inefficient than this model. Under heavy server loads, Node.js will outperform most of its competitors since it does not allocate excess memory for each new connection, unlike a multithreaded system which allocates a fixed stack of memory for each new thread. Furthermore, Node.js is non-blocking, so the system will not be held up by waiting for explicit functions to finish execution.

- Express.js is a javascript framework that is built on top of Node.js and makes use of all of its existing features, in addition to providing a layer of extra features that automates much of the Node.js workflow. Additionally, Express.js allows the programmer to modularize the

Contract Form

Research Proposal (5-10 pages)

Source: https://www.honors.umass.edu/sites/.../files/forms/CE/499TPRegistrationContract.pdf
CS Honors Track: Thesis or Project

**Deliverables:** Final deliverable for honors research is a thesis or project document describing the work. Typically 10-20 pages in length. Students must also give an oral presentation on their work.

**CS Major Credit:** CS major allows for up to 3 credits from 499T/P or independent studies to count toward the major. Some tracks also allow the use of 499T/P as a track course.
CS Honors Track: Website

Source: https://www.cs.umass.edu/ugrad-education/honors-track
Questions ?