

**Endicott College
Beverly, Massachusetts**

**School of Arts and Sciences
Computer Science Department
Course Syllabus**

Course No: CSC 491.01
Course Title: Senior Capstone
Credits: 3
Class Type: Lecture
Semester and Year: Spring 2025
Meeting Times: Friday 2–3:25pm in JSC212

Faculty: Henry Feild, Ph.D.
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Office Hours: See <https://bit.ly/hanks-office-hours>

Catalog Description

Following through on the concepts explored in Senior Research, students complete a project relevant to their major. The outcomes will consist of the implemented project with a written report and presentation.

Learning Outcomes

At the completion of this course you should be able to:

- Hone writing, presentation, data analysis, and dissemination (presentation in oral and in poster form) skills.
- Complete an independent, original research project that is the culmination of the Endicott academic experience.
- Demonstrate that you have transitioned from a passive absorber of existing knowledge

Teaching/Learning Strategies

Class meetings will be used for you to present your project progress and receive feedback from your classmates and me. Occasional one-on-one meetings with me will be used to discuss your blockers and other issues that you encounter. The course will build up to a fully functional realization of your project, a full Senior Capstone document (roughly 30–50 pages, double spaced), a recorded demonstration of your project, a poster showcasing it, and a final presentation of your poster.

Specifications grading is used to provide you agency in determining the level of mastery you'd like to achieve (i.e., it is clear from the beginning of the semester what you must do to earn an A, B, C, or D in the course).

Required Texts/Technology

There are no required texts for this class. You must have or acquire the technology required to carry out the project you choose to pursue. It is also expected that you have access to a computer with document and presentation editing software and the ability to make screen recordings.

Evaluation Methods

The course is made up of the following graded components. I have included the scales that I will use for marking work where possible.

- **Homework** consisting of weekly reports and drafts of deliverables, will be marked on an MRU scale
 - *Meets expectations (100% credit)*: it is clear that you put forth a reasonable effort; you met all of the requirements laid out in the assignment and you incorporated the vast majority of feedback from earlier versions or conversations we had (if applicable)
 - *Revisions needed (50% credit)*: you submitted something that demonstrates you put in some amount of effort, however, you fell short of satisfying the requirements of the assignment and/or did not incorporate a substantial amount of feedback from earlier versions or conversations we had (if applicable)
 - *Unassessable (0% credit)*: you didn't submit anything or you submitted something that is involved little to no effort on your part (e.g., you resubmitted an earlier version)
- **Capstone complexity** is an assessment of how ambitious your project is based on the skills and experience expected of a senior computer science major. You will receive plenty of feedback from me and your classmates about this throughout the semester so that you can re-scope as needed.
 - *High*: the project involves a strong computer science component and will take a semester to implement the remaining work
 - *Medium*: the computer science component is there, but should be stronger or the project scope is too small (will take substantially less than a whole semester)
 - *Low*: the project does not contain a substantial computer science component or is very simple (i.e., could be completed in a weekend or two)
- **Class activities**, usually participating in class discussions or peer reviewing classmates' work.
 - *Pass (100% credit)*: you provided thoughtful feedback to your classmates as per the activity instructions
- **Capstone document***, a formal technical document that describes your project in enough detail that a fellow senior computer science major could implement it.
 - *Excellent*: surpasses expectations; all the required information is contained in the document; you incorporated all of the feedback I provide on your drafts; the writing is clear and concise, easy to read and understand, and well formatted
 - *Meets expectations*: all required information is contained in the document; you incorporated almost all of the feedback I provided on drafts of your document; the writing is sufficient to get your ideas across
 - *Revisions needed*: a clear attempt was made at the full document, but revision is required to bring it up to the level of "Meets expectations"

- *Unassessable*: the document was not submitted or requires *substantial* work to bring it to the level of "Meets expectations"
- **Completed project***, a fully implemented version of your project.
 - *Excellent*: your project works as expected and includes all the functionality that you describe in your Capstone document; the code base includes a well written README as well as well structured and documented code; you incorporated all of the feedback I provided on earlier iterations
 - *Meets expectations*: your project works and includes all the functionality that you describe in your Capstone document; you incorporated most of the feedback I provided on earlier drafts
 - *Revisions needed*: code was submitted; a clear attempt was made at the project, but a moderate amount of work is required to bring it up to the level of "Meets expectations"
 - *Unassessable*: no code was submitted or requires *substantial* work to bring it to the level of "Meets expectations"
- **Project demonstration video***. A professional-looking screen recording demonstrating your project.
 - *Excellent*: all of the conditions of "Meets expectations" were met, plus your video is professional-level quality; you incorporated all of the feedback I provided on earlier drafts; the video is 2–3 minutes long
 - *Meets expectations*: the video includes an introduction, a voice over and titles explaining major features of your project; you incorporated almost all of the feedback I provided on earlier drafts
 - *Revisions needed*: a clear attempt was made at the video, but revision is required to bring it up to the level of "Meets expectations"
 - *Unassessable*: no video was submitted or requires *substantial* work to bring it to the level of "Meets expectations"
- **Poster***; a self-contained display describing your project to a general audience; it should highlight the motivation, related work, architecture, challenges, and major features/aspects of your project.
 - *Excellent*: all of the conditions of "Meets expectations", but your poster is clear (to a general audience) and concise as well as being aesthetically pleasing.
 - *Meets expectations*: your poster includes all of the required elements; the writing, visuals, and organization are sufficient to communicate what you did for your project to a general audience.
 - *Revisions needed*: a clear attempt was made, but one or more of the components of "Meets expectations" are in need of improvement
 - *Unassessable*: no poster was submitted or requires *substantial* work to bring it to the level of "Meets expectations"
- **Poster presentation***; a formal presentation in which you describe your project using your poster as a visual.
 - *Excellent*: all of the conditions of "Meets expectations", but your delivery is exceptionally polished and natural; you do not go over on tangents, you interact with the audience rather than reading directly from your poster
 - *Meets expectations*: your presentation is 5–8 minutes long, relies only on your poster, and conveys all of the necessary information about your project to a

- general audience; you provide concise and informed answers to audience member questions
- *Revisions needed*: a clear attempt was made, but one or more of the aspects of "Meets expectations" are in need of improvement
 - *Unassessable*: no presentation was given or requires *substantial* work to bring it to the level of "Meets expectations"
 - **Reflection***: a document in which you describe the process you used to design and implement your capstone, including an analysis of how you used creative thinking, problem solving skills, and critical thinking to make key decisions.
 - *Excellent*: surpasses expectations; all the required information is contained in the document; you incorporated all of the feedback I provide on your drafts; the writing is clear and concise, easy to read and understand, and well formatted
 - *Meets expectations*: all required information is contained in the document; you incorporated almost all of the feedback I provided on drafts of your document; the writing is sufficient to get your ideas across
 - *Revisions needed*: a clear attempt was made at the full document, but revision is required to bring it up to the level of "Meets expectations"
 - *Unassessable*: the document was not submitted or requires *substantial* work to bring it to the level of "Meets expectations"

The final grade bundles (in specifications grading speak) are below. The basis of your final course grade is determined by the highest bundle you satisfy *all* the requirements for. If the base grade is **X**, then it will be bumped to **X+** if you've satisfied a higher bundle with regards to one of the criteria, or **(X+1)**- if you've satisfied a higher bundle with regards to two of the criteria.

Grade Bundles	
A	● pass 90% of homework <i>and</i> 90% of class activities ● capstone complexity: <i>high</i> ● at least three Senior Capstone components (denoted with an * above) are marked as "Excellent", the others as "Meets expectations"
B	● pass 80% of homework <i>and</i> 80% of class activities ● capstone complexity: <i>medium</i> ● all Senior Capstone components (denoted with an * above) are marked as at least "Meets expectations"
C	● pass 70% of homework <i>and</i> 70% of class activities ● capstone complexity: <i>medium</i> ● No more than one Senior Capstone component (denoted with an * above) is marked as "Revisions needed", the others are "Meets expectations" or "Excellent"
D	● pass 60% of homework <i>and</i> 60% of class activities

	- capstone complexity: <i>low</i> - All Senior Capstone components (denoted with an * above) are marked as at least "Revisions needed"
D-	- pass 50% of homework <i>and</i> 50% of class activities - capstone complexity: <i>low</i> - No more than one Senior Capstone component (denoted with an * above) is marked as "Not assessable"

Example: you pass 95% of class activities, 82% of homework, capstone complexity is high, and you get one "Revisions needed" on one of 6 Senior Capstone components, "Meets expectations" on four, and "Excellent" on one. Your criteria-level grades are:

- Homework/class activities: B (because of the homework)
- Capstone complexity: A
- Senior Capstone components: C

You will wind up with a B-, since you have fully satisfied the C criteria and two criteria satisfy higher bundles.

Topical Outline and Timeline

A more detailed outline can be found on the course website.

Week	Topic
1	Recap of Senior Research / status updates
2	Capstone document overview
3	Designing a poster
4	Check-ins
5	First draft of Capstone document
6	First draft of poster
7	Check-ins
8	Second draft of Capstone document, peer review
9	Check-ins
10	Minimal Viable Product (MVP)
11	Check-ins, second draft of poster
12	Demo draft, reflection draft
13	Final check in
14	Poster presentations (for grade)

Late Policy

I expect homework and class activities to be submitted on time. Homework or class activities submitted late will be docked 50% if submitted within 24 hours and 100% after that.

You will have four late/revision tokens. These can be used to either extend the deadline of a capstone assignment by 48 hours, or to revise an assignment to improve your grade (revisions are due 48 hours after the assignment is graded). Assignments can be revised only if:

- Homework: you submitted the original assignment on time (either the original deadline, or a new deadline through the use of one or more late/revision tokens)
- Capstone components: you submitted the original assignment on time and it was marked "Meets expectations" or "Revision needed"

You may use multiple late/revision tokens for the same assignment, however no deadlines can extend beyond the end of the final exam period.

Accessibility Services

If you believe that you qualify as a person with a disability as defined by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act Amendments Act of 2008 (ADAAA), you are encouraged to register with the Accessibility Services Office to request accommodations and support. Accessibility Services is located on the 2nd Floor of the Diane M. Halle Library. Please visit the [Center for Accessibility Services website](#)¹ and you may contact Accessibility Services at access@endicott.edu with any questions.

Academic Support

The Division of Academic Success believes that every student can benefit from having a thought partner who supports their learning. We offer innovative and individualized services that motivate you as you pursue your educational goals:

- Content and Writing Tutoring: Work with content tutors who can help you understand, remember, and apply course content, or with writing tutors who will support your growth as writers and thinkers. Students can schedule free tutoring sessions on [TutorTrac](#)² or stop by Halle Library 204.
- Quick-Connect Coaching: Meet with a professional academic coach for thirty minutes to devise a solution to an immediate challenge, including unpacking a difficult assignment, creating a specific study schedule for an upcoming assessment, prioritizing multiple responsibilities, and more. Students can schedule free quick-connect sessions on [TutorTrac](#) or stop by Halle Library 204.
- Academic Coaching: Grow your academic self-awareness and deepen your connection to your education by partnering once, twice, or three times a week with a professional academic coach to: develop and deepen academic confidence, resilience, and grit; develop time management and organizational systems and strategies; learn how to set and adjust goals; and recognize how to best utilize resources. This program has an additional cost. To enroll in academic coaching, students can email academiccoaching@endicott.edu.
- Workshops: Our semester workshops help students build skills in crucial areas for learning and succeeding: time management, goal setting, note-taking strategies, and metacognition. See [the website](#)³ for a complete list of programs.

¹ <https://www.endicott.edu/academics/academic-resources-support/accessibility>

² <http://tutortrac.endicott.edu/>

³ <https://www.endicott.edu/academics/academic-resources-support/division-of-academic-success/student-workshops>

Academic Integrity Statement

You are required to abide by [the *Academic Integrity Policy* of Endicott College](#)⁴.

Plagiarism (the presentation of someone else's words, images, or ideas as one's own) applies to both capstone projects and the underlying programming. While you may use whatever resources you'd like (StackOverflow, friends, etc.), the code you submit for any homework or capstone components must adhere to these rules:

- code written with substantial help from anyone or anything else (e.g., ChatGPT, Copilot, etc.) must include a comment acknowledging those that helped
- code snippets taken from other sources (e.g., StackOverflow, another project, etc.) should:
 - be properly merged in with your code (that is, don't just copy and paste...update the variable names, indentation, etc. to match the rest of the code base, update the logic and operations such that it makes sense with your specific problem and doesn't include useless lines of code)
 - include a citation in a comment above the start of the copied code with a URL to the resource
 - be fair and legal to use (e.g., don't take code from a code base that doesn't have a license or has a license that prohibits the replication of its code)

The first instance of plagiarism will result in failure of the assignment and a reduction of 1/3 letter grade in your final course grade; any additional instance will result in dismissal from the class. All plagiarism will be reported to the Office of the Provost.

Course Expectations

For each credit hour, students are expected to spend a minimum of two hours on work outside of class each week. For this three credit course, that is a minimum of six hours each week.

Students must review the Academic Calendar published by the Registrar's Office online at:

<https://www.endicott.edu/academics/academic-resources-support/academic-calendar>

Class attendance is expected of all students up to and including the last day of finals. Students must plan accordingly.

Attendance and Participation

Class attendance is expected of all students (including you) up to and including the last day of scheduled exams for the semester (for this class, that is the last Friday of the semester as there is no final exam scheduled). You must plan accordingly.

⁴ <https://catalog.endicott.edu/content.php?catoid=46&navoid=2574#aca-integrity>

In accordance with the Undergraduate College's Attendance Policy, missing three or more weeks of class in total throughout the semester will result in a WX (withdraw/failing) for an unexcused absence (e.g., the student did not feel like coming to class) or W (withdraw) in the case of an extenuating circumstance (e.g., a medical condition). *For this class, that means missing three or more meetings.* You may miss up to two classes with no penalty.

While in class, you are expected to be fully present and engaged. Using phones or computers in class for any non-class purpose—e.g., texting, making calls, checking email, watching videos, etc.—is strictly forbidden. Side discussions, covert texting, or any other failure to pay attention will negatively impact your grade. If you fail to participate or give your full and undivided attention to the class, disrupt class, perpetually arrive late to class, or are rude to other students or the instructor, you will be marked as absent for the day.

If you make a habit of arriving late to class without a valid reason (subject to my judgment), I will notify you that any further tardiness will result in you being marked absent.

Subject to Change Statement

This syllabus is subject to change. I will notify you of any changes throughout the semester, highlight them above, and make a note of the change in the changelog below.

Changelog

- none