CIS 4952/4962/4972/4982 Sections 001
Senior Design Seminar 2
2 Credit Hours, Winter 2022
11:00-1:45 M, 2380/2382 ELB, Seminar

Contact Information:

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- Office Hours: 2-4 M W and by appt.
- Office Location: 233 CIS

- Assistant Professor Birhanu Eshete
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- Office Hours: 4-5 M W and by appt.
- Office Location: 242 CIS

Course Description:

Students continue to participate in the design and implementation of a major software project. Seminar topics discussed include: computing ethics and professional practice

Learning Goals:

Dearborn Discovery Core Category and Goals:

a. Capstone Experience

- Students are able to identify, obtain, research, and describe major issues associated with a specific topic of inquiry.
- Students are able to identify and discuss critical questions leading to a deeper engagement in the study of a specific topic of inquiry or technology.
- Students are able to apply knowledge, skills and abilities in the creation and execution of a concrete project informed by specific topic of inquiry.

b. Critical and Creative Thinking

- Students are able to identify, summarize, and understand the problem, question, and/or issue.
- Students are able to identify, locate, and critically or creatively evaluate evidence using appropriate sources or technology.
- Students are able to consider and interpret alternative perspectives to support analysis.
- Students are able to develop and communicate conclusions and implications by synthesizing technical, aesthetic, conceptual knowledge or supporting evidence.

Program Learning Goals:

- Our graduates will be successfully employed in a computer and information science-related field or another career path, in an industrial, commercial, academic, governmental, or non-governmental organization, or will be a successful graduate student in a program preparing them for such employment
- Our graduates will lead and participate in culturally diverse teams, becoming global collaborators and adapting to an ever changing field
- Our graduates will continue their professional development by obtaining continuing education credits, professional registration or certifications, or post-graduate study credits or degrees

Course Objectives:

a. Outcomes of instruction
   - The student will be able to conduct a project post-mortem to determine the effectiveness of the project plan
   - The student will be able to conduct one 30 minute seminar discussions of ethics or professional issues papers requiring independent library and/or Internet research
   - The student will be able to create and execute a test plan for a real-world software system, including test case creation, based on the specified requirements
   - The student will be able to describe the design trade-offs considered in formulating the software architecture for a software system designed to meet the needs of a real-world client
   - The student will be able to implement a software system that meets the needs of an external customer
   - The student will be able to lead a software development team in the successful completion of a software project for an external customer
   - The student will be able to make 5 group PowerPoint presentations, each about 15-20 minutes in length
   - The student will be able to make use of appropriate software engineering tools in the development of a software product
   - The student will be able to manage the successful completion of a software project for an external customer
   - The student will be able to participate on a team to design and implement a software system to solve a real-world problem
   - The student will be able to write 2 milestone documents (about 40 pages each) and a final project report (about 250 pages in length)
   - The student will be able to write a complete design document for a real-world software system

b. Student outcomes addressed in the course
   - Outcome 1 – Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

- Outcome 2 – An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
- Outcome 3 - Communicate effectively with a range of audiences)
- Outcome 4 - Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
- Outcome 5 - Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- Outcome 7 - Acquire and apply new knowledge as needed, using appropriate learning strategies

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Required Materials and/or Technology:

REQUIRED: Cyberethics: Morality and Law in Cyberspace, 6th Edition, R. Spinello, Jones & Bartlett, 2017.

RECOMMENDED: Software Engineering: A Practitioners Approach, 9th Edition, Roger S. Pressman and Bruce R. Maxim, McGraw-Hill, 2020

URL: http://www-personal.umd.umich.edu/~bmaxim/
http://groups.umd.umich.edu/cis/course.des/cis4952.html

Assignments and Grading Distributions:

2 Project Assignments (Written and Oral)	30%
Ethics Debate Presentation	20%
Final Report	20%
Project Demonstration	20%
Peer Reviews	10%

97-100%	**A+**	84-86%	**B**	70-73%	**C-**
94-96%	**A**	80-83%	**B-**	67-69%	**D+**
90-93%	**A-**	77-79%	**C+**	64-66%	**D**
87-89%	**B+**	74-76%	**C**	60-63%	**D-**

Tentative Course Outline and Schedule:

Date	Activity and Content
Jan 10	Project Teams Check-in #0 Course Overview
Jan 17	MLK Celebration – no class
Jan 24	Ethics Debate Topics selected and Title Page Uploaded Project Teams Check-in #1
Jan 31	Ethics Debates
Feb 07	Ethics Debates Project Teams Check-in #2
Feb 14	Design Document/Prototype Presentations
Feb 21	Design Document/Prototype Presentations Project Teams Check-in #3
Feb 26-Mar06	Spring Break
Mar 07	Ethics Debates
Mar 14	Test Plan Presentations Project Teams Check-in #4
Mar 21	Test Plan Presentations
Mar 28	Ethics Debates Project Teams Check-in #5
Apr 04	Ethics Debates Client Acceptance Letter Requested
Apr 11	Final Project Presentation Demos Project Teams Check-In #6
Apr 18	Final Project Presentation Demos
Apr 21	Senior Design Day 4:00-7:00
Apr 25?	Post Mortem Presentations 11:30-2:30

Course and University Policies:

Instructor or Course Specific Policies:

The Faculty of the University of Michigan - Dearborn, College of Engineering and Computer Science (CECS) believe that our students are honorable, ethical, trustworthy people. Students who engage in cheating of any kind, place the academic integrity and reputation of our university and our college in jeopardy.

To ensure that all CECS students receive an equitable education and are prepared for the workforce, the University of Michigan - Dearborn Academic Code of Conduct will be strictly enforced in all CECS courses. All CECS students are required to read, understand, and follow the Academic Code of Conduct, as well as any additional rules that the course instructor provides. Students who violate the Academic Code of Conduct or course rules, are subject to all penalties indicated, including failing the course, potential loss of scholarship funds or expulsion from the university.

Cheating includes, *but is not limited to*:

- Receiving assistance of any kind, on any individual, graded assignment or exam
- Providing assistance of any kind, on an individual, graded assignment or exam
- Using materials that are prohibited on any graded assignment or exam
- Test/Exam Parties - i.e., completing an individual exam as a group project
- Collusion/Deception of any kind, including but not limited to:
    - coordinating with others to obtain or distribute prohibited or unpublished materials
    - giving false information to receive time extensions or re-takes
    - obtaining and using previous exams not provided by the instructor
- Using a mobile device (including smart watches) to communicate with others during an exam
- Paying another person to complete coursework, including exams
- Receiving payment to complete another student's work, including exams
- Requesting and using help from Chegg, Course Hero or any other such service
- Submitting examination information to Chegg, Course Hero or any other such service
- Plagiarism - using another person's work without properly citing
- Storing equations or solutions in a calculator to use on a quiz or exam when not permitted
- Screenshots of Canvas quizzes or exams
- Any "hacks" used to access Canvas content or other materials before released
- Any other dishonest action that violates course rules and/or the Academic Code of Conduct

If you are questioning an action you are about to take and cannot reach your instructor to verify, it is likely that you should not proceed with that action. Oral exams may be given to determine if a student understands the course material.

Face Mask Policy

Face coverings are required inside all UM-Dearborn buildings (especially in laboratory and classroom spaces) and on campus transportation for all faculty, staff, students and guests. Face coverings may be removed when actively eating or drinking or when in an office by yourself with the door closed. The University will provide face coverings to any student, faculty, or staff member upon request.

Anyone attending class in person without a proper and visible face covering will be asked to put one on or leave. Instructors will end class if anyone present refuses to appropriately wear a mask for the duration of class. Students should also be sure they are situated at least six feet away from anyone in the class and located in a seat designated to ensure that distance.

Students who refuse to wear face coverings or appropriately adhere to other stated requirements may face disciplinary action under the Disruptive Student Behavior policy. Students may contact Disability Services to determine if an accommodation is reasonable under the Americans with Disabilities Act.

Library Resources

The library's here to help! Go to the Mardigian Library website at library.umd.umich.edu for information about accessing research help, accessing the library's online databases, journal articles, and books/ebooks, and checking out physical items from the library. Research librarians will be available to help you with your research needs through live chat, text, email, and virtual appointments, as well as in the library for walk-in help. Check-out for books, course reserves, and loanable technology (such as Chromebooks) is also available at the Library Info Desk. For any of your questions, feel free to ask the Mardigian at library.umd.umich.edu/ask.

Food Pantry

The pantry exists to support individuals on their journey as they work toward achieving their goals. We are committed to increasing access to food as a key to success, by assisting any student in need! If you need access or have questions, please contact the Office of Student Life by phone at 313-593-5390, by email at umdearbornpantry@umich.edu.

University-Wide Policies or Statements Relevant to Courses:

Please see the 'Course Policies' Menu on Canvas for information on the following:

- University Attendance Policy
- Academic Integrity Policy
- Counseling
- Disabilities Services
- Safety Statement
- Harassment, Sexual Violence, Bias, and Discrimination