



**CIS 4952/4962/4972/4982 Sections 001**  
**Senior Design Seminar 2**  
**2 Credit Hours, Winter 2020**  
11:00-1:45 M, Seminar, 1330 PEC

**Contact Information:**

- Professor Bruce R. Maxim
  - Office Hours: 2-6 W Th and by appt.
  - Email: bmaxim@umich.edu
  - Office Location: 233 CIS
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**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 – Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
    - Outcome 2 – Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
    - Outcome 3 – Communicate effectively in a variety of professional contexts
    - Outcome 4 – Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
    - Outcome 5 – Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
    - Outcome 6 – Apply computer science theory and software development fundamentals to produce computing-based solutions.
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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%
Paper Presentation	20%
Final Report	20%
Project Demonstration	20%
Attendance	10%

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

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### Tentative Course Outline and Schedule:

Date	Activity and Content
Jan 06	Project Teams Check-in
Jan 13	Paper Presentations
Jan 20	MLK Celebration – no class
Jan 27	Paper Presentations
Feb 03	Paper Presentations
Feb 10	Design Document/Prototype Presentations
Feb 17	Design Document/Prototype Presentations

Feb 24	Paper Presentations
Mar 02	Spring Break
Mar 09	Test Plan Presentations
Mar 16	Test Plan Presentations
Mar 23	Paper Presentations
Mar 30	Paper Presentations
Apr 06	Client Acceptance Letter Due Paper Presentations
Apr 13	Final Project Presentations
Apr 17	Senior Design Day 10:00-3:00
Apr 20	Post Mortem Presentations 11:30-2:30

**Course and University Policies:**

**Instructor or Course Specific Policies:**

A student enrolled in a course (lecture, laboratory, recitation, colloquium, seminar, or other university approved format) is expected to attend every scheduled session of the course. The instructor of each course will make known to the students the course attendance policy with respect to student absences. It is the student's responsibility to be aware of this policy. The instructor makes the final decision to excuse or not to excuse an absence.

Presence or participation is also expected in online courses. Participation in online courses can take various forms; it is the instructor who determines what form of presence or participation is expected. Students enrolled in online courses are responsible for being aware of that policy/expectation. An instructor is entitled to give a failing grade for excessive absences or for a student who stops participating in class at some point during the semester.

The University of Michigan-Dearborn values academic honesty and integrity. Each student has a responsibility to understand, accept, and comply with the University's standards of academic conduct as set forth by the Code of Academic Conduct, as well as policies established by each college. Cheating, collusion, misconduct, fabrication, and plagiarism are considered serious offenses and violations can result in penalties up to and including expulsion from the University.



**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