CIS 375 Section 001 and 002
Software Engineering 1
4 Credit Hours, Fall 2020
6:00-7:45 TTh, Recitation, on-line

Contact Information:

- Professor Bruce R. Maxim
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- Phone Number: 313-536-9155
- Office Hours: 4-5 T W Th by appt.
- Office Location: 233 CIS

Learning Goals:

Dearborn Discovery Core Category and Goals: Upper Level Writing

- Students are able to demonstrate advanced competency by writing for a specific audience and integrating disciplinary ideas and concepts (requirements document).
- Students are able to effectively evaluate and use research methods, sources, or technology appropriate to the field (design document).
- Students are able to engage in critical inquiry and thinking to synthesize or create a new rendering of perspective (milestone documents in the term project.

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. instructional objectives

- The student will be able to create a risk table for a software development project and risk information sheets for each critical or catastrophic risk
- The student will be able to create and execute a test plan for a software system, including test case creation, based on the specified requirements

- The student will be able to implement a software system that meets the needs of an external customer and that involves the creation of a significant user interface and help system
- 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 completion of a software project for an external customer
- The student will be able to participate in several peer design walkthroughs, including the presentation and critiquing of each other's designs during class time
- The student will be able to participate on a multi-disciplinary design team to design and implement a software project
- The student will be able to write a complete design document for a software system
- The student will be able to write a management plan for a software project that involves time and resource estimates, personnel scheduling detail, and the determination of its production costs

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.

Required Materials and/or Technology:

- REQUIRED: R.S. Pressman and B. Maxim, Software Engineering: A Practitioner's Approach, 9th Edition, McGraw Hill, 2020.

- RECOMMENDED: S.R. Schach, Object-Oriented and Classical Software Engineering, 8th Edition, McGraw-Hill, 2011

- TECHNOLOGY: Various programming languages, Zoom, and software engineering tools.

- URL: http://www-personal.umd.umich.edu/~bmaxim/
  http://groups.umd.umich.edu/cis/course.des/cis375.html

Assignments and Grading Distributions:

16 of 18 Reading Reflections	20%
5 Project Assignments	60%
20 of 22 Laboratory Assignments	20%

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, Content, Assignments
Module 1 Sep 03	Course Introduction Software and Software Engineering - SEPA 1 Pretest (in class students only)
Module 2 Sep 10	Software Process Models Paper Tower - SEPA Chap 2 Agile Process Models Process Improvement Game - SEPA Chap 3
Module 3 Sep 17	Requirements Engineering 1 Understanding Requirements and Ambiguity - SEPA Chap 4 Requirements Engineering 2 User Stories, Use Cases - SEPA Chap 6, SEPA Chap 7
Module 4 Sep 24	Requirements Modeling 1 CRC/UML - SEPA Chap 8 Requirements Modeling 2 UML - SEPA Chap 8, SEPA App 1

Date	Activity, Content, Assignments
Module 5 Oct 01	Reviews SEPA Chap 16 Inspections SEPA Chap 16
Module 6 Oct 08	PMP 1 Project Estimation – SEPA Chap24, SEPA Chap 26 Team Presentations OOA SRS Videos Due
Module 7 Oct 15	PMP 2 Project Scheduling - SEPA Chap 26 RISK Management and Software Metrics SEPA Chap 23, SEPA Chap 26
Module 8 Oct 22	Architectural Design and Component Design SEPA Chap 9, SEPA Chap 10, SEPA Chap 11 Configuration Management and Support SEPA Chap 22, SEPA Chap 27
Module 9 Oct 29	Team Presentations Project Plan Videos Due UX Design 1 User Interface Design and Reviews SEPA - Chap 12
Module 10 Nov 05	UX Design 2 Patterns, Personas, Customer Journeys - SEPA Chap 12, SEPA Chap 14 UX Design 3 Paper Prototypes and User Modeling - SEPA Chap 13
Module 11 Nov 12	Software Quality Defect Life Cycle - SEPA8 Chap 15 Technical Reviews Design Document Videos Dues
Module 12 Nov 19	Testing 1 Understanding Testing – SEPA Chap 19, SEPA Chap 20 Testing 2 Teat Case and Test Plans – SEPA Chap 19, SEPA Chap 20

Date	Activity, Content, Assignments
Nov 23 to Nov 29	Thanksgiving Vacation
Module 13 Dec 03	Testing 3 Cost Effective Testing – SEPA19 Testing 4 Usability/Accessibility - SEPA Chap 21
Module 14 Dec 10	Software Quality Assurance SEPA Chap 17, SEPA Chap 18 Technical Reviews Test Plan Videos Due
Dec 15	Study Day
Dec 18	Final Project Demo Videos Due

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.

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.

Course lectures may be audio/video recorded and made available to other students in this course. As part of your participation in this course, you may be recorded. If you do not wish to be recorded, please contact bmaxim@umihc.edu the first week of class (or as soon as you enroll in the course, whichever is latest) to discuss alternative arrangements.

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

Face Coverings

Research indicates that the transmission of COVID-19 is greatly reduced when all individuals wear face coverings in any gathering. In accordance with Michigan Governor Gretchen Whitmer's Executive Order 2020-153 and the Centers for Disease Control and Prevention guidelines, the University of Michigan-Dearborn Face Covering Policy for COVID-19 requires everyone to wear a face covering over their nose and mouth on campus grounds, in any campus building, especially in laboratory and classroom spaces. 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.