Syllabus for *Introduction to Software Engineering*

CIS 350 (Section 1) Fall 2023

Generated August 15, 2023

Systems development life cycle from project request through project implementation and evaluation. Systems analysis and design concepts, tools and techniques are emphasized. Traditional and structured approaches. Project management.

Contact Information:

Instructor:	Dr. Erik Fredericks
E-mail:	frederer@gvsu.edu
Office:	D-2-210 MAK / Discord
Office Hours:	MWF, 11:00am-12:00pm, in-person and remote (Discord)
Course Page:	Blackboard
Discord:	https://discord.gg/pNaTDKH
Class time:	MWF, 1:00pm – 1:50pm
Midterm:	(Wednesday) October 11th, 1:00pm – 1:50pm
Final exam:	(Monday) December 11th, 12:00pm – 1:50pm

Course Objectives:

Software Engineering of computer-based information systems deals with technologies, notations, tools, and procedures to improve both the process of software development and the resulting products. Software requirements analysis, design, testing, and metrics are emphasized. Please take note: this course **no longer** satisfies the SWS (Supplemental Writing Skills) requirement and is **not an SWS course**. Specifically, students will:

- Describe the phases, activities, advantages, and limitations of major software development life cycle models.
- Be able to learn and apply requirements, analysis, and design techniques.
- Use UML diagrams to specify static and dynamic aspects of software systems.
- Apply project management techniques and tools (such as COCOMO, Earned Value Analysis) to estimate effort, schedule, and measure project progress indicators.
- Apply black-box and white-box software testing techniques.
- Demonstrate an understanding of social, legal, ethical, and global issues in computing.
- Write a technical report utilizing consistent formatting and citation guidelines.

Prerequisites:

- CIS 163: Computer Science II

Course Materials:

Primary: Instructor's Lecture Notes and Handouts (via Blackboard)

*Course Delivery - **In Person**:*

This course will be delivered **in person**, following proper social distancing protocols. If it becomes necessary to change delivery formats, we will change to an *online synchronous* format.

Grading Proportions:

The last day to drop a course with a grade of "**W**" is **November 10, 2023**.

The CR/NC date is **September 22, 2023**.

Your grade is based on your performance in your homework assignments, term project, exams, and participation.

Graded Item	Available Points
Participation:	10%
Coursework:	20%
Individual Efforts (Group Project):	10%
Group Project:	30%
Midterm Exam:	15%
Final Exam:	15%
Total	**100%**

A	>=93%	**B-**	>=80%	**D+**	>=67%
A-	>=90%	**C+**	>=77%	**D**	>=60%
B+	>=87%	**C**	>=73%	**F**	<60%
B	>=83%	**C-**	>=70%		

Late Policy: Work submitted after the due date will incur 10% late penalty per day, with a minimum penalty of 10%. No assignment will be accepted more than 3 days late.

If you are struggling with meeting deadlines, please contact me as soon as possible!

Coursework:

Coursework in this class consists of in-class assignments (participation), homework assignments, and a semester-long term project. Assignments are graded for correctness *and* communication. Pay attention to factors including content, organization, clarity/style, and mechanics.

1. Homework assignments must be completed individually (unless otherwise noted). However, it is expected that several of the finished and graded homework assignments will be used to support the creation of the term project report.

2. The term project is a semester-long effort *centered around software engineering and its processes*. Grades will reflect the quality of the software created as well as the adherence to software engineering processes and procedures. Individual contributions to the project will be considered as part of the grading process as well. Groups of **2–4** people will be accepted, where requests for groups of a larger size will be handled on a case-by-case basis.

Course Policies and General Information:

(1) The Fred Meijer Center for Writing, with locations at the Allendale and Pew/Downtown Grand Rapids campuses, is available to assist you with writing for any of your classes. Writing consultants, who are fellow GVSU students, are trained to help you with all stages of your writing process, from brainstorming to organizing to editing your papers. Simply bring a draft of your paper, the assignment sheet, and your questions/concerns to any of the Center's locations. Also, through your Gmail account, you have access to online consultations through GoogleDocs. The Center's services are free and you can drop in and work with a consultant or make an appointment, either through our website or by calling the Center (331-2922). For more information about our services and locations, please visit our website: `http://www.gvsu.edu/wc/`

(2) **Cooperation and cheating**: Be aware of the SCIS policy on academic honesty. Visit the department website (`https://www.gvsu.edu/computing/academic-honesty-30.htm`) for the full statement on academic honesty. Academic dishonesty will not be tolerated. Violations will result in *at least* failure of the assignment. However, violations may also include failure of the entire course and referral to the university resulting in additional consequences, including possible expulsion. You are welcome to discuss assignments with each other or myself, however do not copy answers or plagiarize. If you are unsure of what plagiarism means, please either ask me or visit the department website mentioned above.

(3) Participation is *not* equivalent to attendance. Please ensure you keep up with the in-class assignments to ensure that you are staying current with the class (and receive the credit for it).

(4) **ChatGPT/LLM statement**: I do not mind if you use ChatGPT to help you work through problems, however do not simply copy and paste its output into your assignment. This is the same as plagiarism/cheating as you are presenting work that is **not your own**.

(5) Special Needs: If there is any student in this class who has special needs because of a disability, please contact Disability Support Resources at `http://www.gvsu.edu/dsr/` (DSR) at 616-331-2490.

(6) This course is subject to the GVSU policies listed at `http://www.gvsu.edu/coursepolicies/`.

(7) In Case of Emergency Fire: Immediately proceed to the nearest exit during a fire alarm. Do not use elevators. More information is available on the University's Emergency website located at `http://www.gvsu.edu/emergency`.

(8) This syllabus is deprecated in favor of any syllabus uploaded to the course Blackboard page with a *more recent* "generated" date. This version of the syllabus was generated on August 15, 2023.

Course Schedule:

A course schedule of topics project deadlines are included in the table below. This schedule may be adjusted throughout the semester as needed. Note, the week that topics are covered or even the order they are covered is tentative and may be adjusted throughout the semester.

Tentative Schedule	**Lecture/Discussion Topic**
September 3rd–4th, 2023, Labor Day Recess	No classes!
October 22nd–24th, 2023, Fall break	No classes!
November 22nd–26th, 2023, Thanksgiving break	No classes!
1	Introduction, Ethics
2	Software Process Models
3	Configuration Management Specification
4	Specification
5	Project Management
6	Unified Modeling Language (UML)
7	Unified Modeling Language (UML) Object-Oriented Analysis & Design
8	Unified Modeling Language (UML) Object-Oriented Analysis & Design
9	Design Patterns
10	Design Patterns
11	Verification & Validation
12	Verification & Validation
13	System Building
14	Remaining material and term project presentations
	Exam: Monday, December 11th, 12:00 pm - 1:50 pm