Syllabus for *Introduction to Software Engineering*

CIS 350 (Section 3) Fall 2018

Generated August 25, 2018

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. Byron DeVries

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Office: D-2-218 MAK

Office Hours:

- 2:00-3:00pm on M, W, F in D-2-218 MAK (Allendale)
- 5:00-6:00pm on Th in 618a or 618 Conference Room, Eberhard Center (Downtown)
- By appointment or when my office door is open (D-2-218 MAK)

Course Page: Blackboard

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. Since this course partially satisfies the SWS (Supplemental Writing Skills) requirement, there is a strong emphasis on written projects. 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 APA formatting and citation guidelines.

Prerequisites:

- CIS 163: Computer Science II
- WRT 150: Strategies in Writing

Course Materials:

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

Grading Proportions:

The last day to drop a course with a grade of "**W**" is **Friday, October 26, 2018**.

Your grade is based on your performance on participation/response writing, homework, a group project, a midterm, and a final exam.

Graded Item	**Weight**
Participation:	10%
Homework:	20%
Group Project:	30%
Midterm Exam:	20%
Final Exam:	20%
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. No assignment will be accepted more than 3 days late. ***No assignment will be accepted after the last day of class regardless of the number of days late.***

Coursework:

Coursework in this class consists of homework assignments and a semester long group project. As this is an SWS course, all written assignments are graded for correctness *and* writing. Pay attention to factors including content, organization, clarity/style, and mechanics.

A request for early review may be submitted via e-mail for any coursework turned in before the due date. An early review consists identifies the most apparent issues that should be addressed. Coursework may be submitted early as often as desired, however responses to e-mail requests will still follow items (5) and (6) in the course policies. **Note:** A review is not early grading nor will it be guaranteed, or even expected, to identify *all* outstanding issues.

1. Homework assignments must be completed individually. However, it is expected that several of the finished and graded homework assignments will be used to support the creation of the group project report. Assignments will include *at least* the following:

    - Short answers on readings (500 words),

- Natural language requirements (750 words),
- Use-case diagrams and descriptions (750 words), and
- Gantt Chart and plans (1000 words).

2. The group project is a semester long development effort that is *centered around software engineering and processes*. Grades will reflect not only the quality of the software created, but also the adherence to software engineering processes and procedures. The quality (and existence) of individual contributions will be reflected in the individual grades for the group project. The final project report (draft and final) and individual assessments (for the draft and final project reports) are graded for software engineering content and writing.

Course Policies and General Information:

(1) This is an SWS designated course and must include the following paragraph:

This course is designated SWS. Completion of WRT 150 with a grade of C or better (not C-) is a prerequisite. SWS credit will not be given to a student who completes this course before completing the prerequisite. SWS courses adhere to certain guidelines. ***Students turn in a total of at least 3000 words of writing.*** *Part of that total may be essay exams, but a substantial amount of it is made up of essays, reports, or research papers. The instructor works with the students on revising drafts of papers, rather than simply grading the finished piece of writing. At least four hours of class time will be devoted to writing instruction. At least one third of the final grade in the course is based on the writing assignments. Students must complete the course with a grade of "C" or better in order to receive SWS credit.*

The writing assignments and instruction in this class will be closely aligned with work products created during the software engineering life-cycle (i.e., documents for project planning, requirements, design, development, verification, and post-project analysis). The four hours of class time specifically devoted to writing will include instruction on project documentation organization, requirements specification, and APA citation expectations. Early review may be requested for any assignment submitted. Additionally, any necessary revisions necessary after homework grading are expected in the project report.

(2) 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/`

(3) Be aware of the SCIS policy on academic honesty. Visit the department website (`http://www.cis.gvsu.edu/academic-honesty/`) for the full statement on academic honesty. Academic dishonesty will not be tolerated.

(4) Personal and classroom decorum is important; it is also a very good preparation for the business world. *Use of a laptop/tablet is permitted only for CIS 350-related activities (such as viewing class notes, taking notes, experimenting with software tools, etc.).*

(5) E-mails will typically be responded to by the end of the next business day (i.e., day when school is in session), unless I have limited access to e-mail (e.g., on conference travel).

(6) E-mails will be responded to at the same quality as they are written. The better the question you ask, the better the response you will get. For example, if you e-mail "How do I solve problem 3?" I will respond "What have you tried?" The easier you make it for me to answer your question, the better the answer you are likely to get.

(7) 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.

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

Course Schedule:

Week	**Lecture/Discussion Topic**	**Project**
08/27	What is Software Engineering Ethics in Software Engineering	
09/03	**Labor Day: 09/03** Software Process Models	
09/10	Software Process Models Tools for Project: Checkstyle, ObjectAid UML Explorer	
09/17	Tools for Project: Git Version Control System	
09/24	Software Requirements & Use Case Modeling	
10/01	Tools for Project: Find Bugs, JUnit, and EclEmma	
10/08	Software Project Management	
10/15	Unified Modeling Language (UML)	Release #1
10/22	Object-Oriented Analysis & Design **Exam: Friday, October 26th**	
10/29	Design Patterns (GoF Patterns, MVC, MVP)	
11/05	Design Patterns (GoF Patterns, MVC, MVP)	
11/12	Test-Driven Development Software Testing	
11/19	Software Testing **Thanksgiving: Nov 21, 23**	
11/26	System Building (with Ant)	
12/03	Final Project Presentations	Release #2
12/10	**Exam: Thursday, December 13, 2:00 - 3:50pm**	