

# EMEN 5031 Software Engineering Project Management

## Fall 2008 Course Syllabus

**Course Description:** This course is an *elective* course in the Engineering Management Program curriculum.

Explore software project management activities from product concept through development based upon best practices. Covered topics include software systems engineering, process management and control, and project planning and management.

After successful completion of the course, the student will understand how standard engineering practices applied to software products including life cycle development processes. The student will learn to manage software as a distinct project, use specifications and descriptions, make use of structured and object-oriented techniques, complete reviews and audits, confirm product development with planned verification, and validation and testing.

Throughout the course, we will be applying the systems engineering and project management principles to Harvard a case studies.

**Course Instructor:** Stacy L. Dumas  
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*Office Hours:* by appointment

### **Course Text:**

There are two texts for this course. They are:

The Project Manager's Guide to Software Engineering Best Practices, Christensen, Thayer  
And  
The Death March, Yourdan

### **The Course:**

The course topic outline which follows (Table I) identifies the proposed and tentative lecture topics (some topics may be added or dropped based upon student input and projects of interest which may arise during the semester) that will be presented throughout the semester in order to allow the student to achieve the goals and objectives of the course.

For each topic covered, it will be the student's responsibility to:

- (a) Have read any assigned material identified by the instructor *before* the Corresponding lecture; and

(b) Attend the lecture, and participate in classroom discussions of the Material presented (in a course of this type, this requirement should be considered an essential and indispensable attribute).

### ***A Note on Professional Behavior and Mutual Expectations***

Students should have every right to expect the instructor to show up for each class session, ready to teach, and prepared to answer questions and/or assist the students in learning the course material in a respectful manner.

The instructor should have every right to expect students to attend class, arrive on time, and spend their time in class dedicated to learning the content presented. Therefore, exhibiting the following behaviors during lectures / class discussions:

- using personal computers to surf the internet, answer e-mails, or work on projects that have no relationship to the course/course material;
- reading newspapers and/or magazines; or
- Conducting 'other business' which is unrelated to the course material will be considered unprofessional (and discourteous), and will not be tolerated.

### **Course Requirements:**

- Classes will be conducted Thursdays, from 5:30 to 8 p.m. during the fall semester of the 2008-2009 school year.
- There will be homework assigned at the end of most of the lectures. These questions must be answered within 2 weeks of the date of the class for all students. These 10 homework assignments are worth 10 points each.
- There will be 4 case studies worth 25 points each. All case studies are due within 2 weeks of the class where it was assigned.
- There will be a final exam worth 100 points.

### **Course Grading:**

Final	100 points
Case Studies	100 points
Exercises	<u>100 points</u>

Specifically, for purposes of illustration, the final grade will be calculated by assigning the adding up all of the scores received. An example is included below:

Case Studies:	A-	=	3.7	*.34=1.25
Exercises:	B +	=	3.3	*.33=1.089

Final Exam:	B +	=	3.3	*.33=1.098
Final Grade	B+		3.43	

to the following scale:

3.85 - 4.0000	A	
<b>3.50 - 3.8499</b>	A-	(the category within which the example above falls)
3.15 - 3.4999	B+	
2.85 - 3.1499	B	
2.50 - 2.8499	B-	
2.15 - 2.4999	C+	
1.85 - 2.1499	C	
1.50 - 1.8499	C-	
1.15 - 1.4999	D+	
0.85 - 1.1499	D	
0.70 - 0.8499	D-	
< 0.70	F	

### Writing Guidelines

1. All case studies and homework must be submitted via e-college on or before the due date in order to receive full credit. Late submissions will be penalized unless *prior* arrangements have been made with the instructor.
2. All homework and case studies should be submitted in word form. Please add a cover page, with your name and the assignment number. Please add a table of contents to all case studies.
3. Students often ask how long a paper should be. The answer is "*Long enough to cover the subject!*" Please make your reports comprehensive yet concise, avoiding excessive B.S. which is meant only to impress or fill space.

## EMEN 5031 Fall 2008 Schedule

Lecture	Topic	<i>(Others may be assigned during the semester)</i>
	<b>Software Systems Engineering &amp; Process Control and Management</b>	
1	What is Software Systems Engineering	<u>The Project Manager's Guide to Software Engineering Best Practices</u> , Pages 5-39 Exercise 1
2	Concept of Operations, Software Requirements Specifications	<u>The Project Manager's Guide to Software Engineering Best Practices</u> , Pages 41-92 CASE 1 Use Cases
3	Design and Development Delivery, Verification, Validation and Post Audit	<u>The Project Manager's Guide to Software Engineering Best Practices</u> , Pages 113-146 Exercise 2
4	Software User Documentation Software Maintenance	<u>The Project Manager's Guide to Software Engineering Best Practices</u> , Pages 95-111, 149-172 Exercise 3
5	Review Case 1 Software Life Cycle Process Management	<u>The Project Manager's Guide to Software Engineering Best Practices</u> , Pages 179-207 Exercise 4
6	Software Process Improvement, Software Configuration Management	<u>The Project Manager's Guide to Software Engineering Best Practices</u> , Pages 209-232, 237-269 Case 2 CMM vs. Agile
7	Software QA Software Reviews	<u>The Project Manager's Guide to Software Engineering Best Practices</u> , Pages 271-287, 291-319 Exercise 5
	Become a ScrumMaster	
8	The Scrum Framework	<u>Exercise 6</u>
9	Agile Project Management PMBOK to Agile	<u>Exercise 7</u>
10	Crossing the Bridge to Agile Software Project Management	<u>Exercise 8</u>
11	Software Cost and Schedule Management, Software Risk Management	<u>The Project Manager's Guide to Software Engineering Best Practices</u> , Pages 327-446 Case 3 WIPRO Technologies
12	Review Case 2 Death March Projects	<u>The Death March</u> , Chapters 1-4 Case 4 Cisco Systems
13	Death March Projects	<u>The Death March</u> , Chapters 5-11 Exercise 9
14-15	Present Case 4	<u>Exercise 10</u> <u>Final</u>

## **UNIVERSITY PROVISIONS AND REQUIREMENTS**

1. If you qualify for accommodations because of a disability, please submit a letter to the instructor from Disability Services in a timely manner so that your needs may be addressed. Disability Services determines accommodations based on documented disabilities. For further information, see [www.Colorado.EDU/disabilityservices](http://www.Colorado.EDU/disabilityservices), contact 303-492-8671, or visit Willard 322.
2. Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or class attendance. Students for whom religious observances conflict with class schedules should contact the instructor no later than two weeks before the potential conflict to request special accommodations. See full details at [http://www.colorado.edu/policies/fac\\_relig.html](http://www.colorado.edu/policies/fac_relig.html).
3. Students and faculty each have responsibility for maintaining an appropriate learning environment. Students who fail to adhere to such behavioral standards may be subject to discipline. Faculty have the professional responsibility to treat all students with understanding, dignity and respect, to guide classroom discussion and to set reasonable limits on the manner in which they and their students express opinions. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender variance, and nationalities. See policies at <http://www.colorado.edu/policies/classbehavior.html> and at [http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student\\_code](http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student_code)
4. All students of the University of Colorado at Boulder are responsible for knowing and adhering to the University's academic integrity policy. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council ([honor@colorado.edu](mailto:honor@colorado.edu); 303-725-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Other information on the Honor Code can be found at <http://www.colorado.edu/policies/honor.html> and at <http://www.colorado.edu/academics/honorcode/>
5. The University of Colorado Policy on Sexual Harassment applies to all students, staff and faculty. Sexual harassment is unwelcome sexual attention. It can involve intimidation, threats, coercion, or promises or create an environment that is hostile or offensive. Harassment may occur between members of the same or opposite gender and between any combination of members in the campus community: students, faculty, staff, and administrators. Harassment can occur anywhere on campus, including the classroom, the workplace, or a residence hall. Any student, staff or faculty member who believes s/he has been sexually harassed should contact the Office of Sexual Harassment (OSH) at 303-492-2127 or the Office of Judicial Affairs at 303-492-5550. Information about the OSH and the campus resources available to assist individuals who believe they have been sexually harassed can be obtained at: <http://www.colorado.edu/sexualharassment/>