



**DEPATEMEN TEKNIK ELEKTRO
FAKULTAS TEKNIK
UNIVERSITAS SUMATERA UTARA**

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COURSE SYLLABUS

Course No : TEK-336
Unit : 2 credits
Course Title : Rekayasa Perangkat Lunak
Class Schedule : Tuesday, 13.10-14.50
Lecturer : F. Rizal Batubara (rizal@usu.ac.id)

Description

This course will study a collection of methods which embody an "engineering" approach to the development of computer software. We will discuss the nature of software and software projects, software development models, software process maturity, project planning, management, and communication. We will study methods for analysis, design, testing, and implementation of large, complex software systems. We will inquire into the various perspectives on software quality -- what it means, how to measure it, how to improve it.

Course Objectives

After finishing this course, students should be able to understand:

- concept of software process
- activities in software development
- technical and managerial aspects of software development related to development methodologies, maturity level of the software developer organization
- various life cycle models for software development
- software quality assurance process
- competency of software engineer profesional

Method of Delivery

This is a student-centered type of teaching where there will be lots of discussions and sharing experiences among us. Students are fully suggested to be active and participative.

Required Reading

- [1] Pressman, Roger. *Software Engineering: A Practitioner's Approach*, 6th Edition, Mc.Graw-Hill International, USA, 2005.
- [2] Sommerville, Ian, *Software Engineering*, 7th Edition, Pearson Addison Wesley, England, 2004
- [3] Online: www.sei.cmu.edu

Assignments

Readings. Readings are an essential part of your effort to understand the materials. I suggest that you read ahead and use class time to ask questions that weren't clear in the readings or to share your thoughts with the class.

Class Participation. Class participations consist of question and answer (Q/A) session, and class present. Q/A provides immediate feedback on previous materials and will be administered at the end of each chapter. Class participation constitutes 10 percent of your grade.

Quizzes. There will be quizzes delivered in class a. No notification being made in advance to deliver quiz. You have to be ready anytime for a short time quiz as a medium for immediate feedback.

Case Analysis (Individual Project). The purpose of the case analysis is to summarize your thought processes and communicate them in writing. The length of the paper is limited to ten pages, 1.5-spaced with margins not exceeding one inch. Your paper should be simple, concise and well-written. Detailed instructions will be given in class.

Group Project. There will be one software engineering project, which you will do as part of a team. The project will require you to make incremental deliveries through out the term, which will be graded. The objective of the project is to give you experience trying to apply the principles and techniques covered in the course, as part of team working on a real software product. The project will be carried out step-by-step. The progress will be monitored accordingly.

Exams. There will be two exams. The midterm will cover the first eight weeks of the course materials. The final exam will cover the next eight weeks of the course materials. These examinations will be "closed book". That is, no books or reference materials will be allowed in the examination room. These are the main check on how much you have learned from the course.

Evaluation

Your final grade will not rest on one or two exams but will be based on how many points you accumulate throughout the semester. My view is that this would better reflect your learning process and would minimize anxiety associated with exams. The weights assigned to each component are as follows:

| | |
|---------------------|-------------|
| Class participation | 10% |
| Quizzes | 10% |
| Individual project | 10% |
| Group Project | 20% |
| Midterm exams | 20% |
| Final exams | 30% |
| Total | 100% |

Class Policies

Attendance. Students are expected to attend class regularly. There are 80% minimum attendance requirements, and attendance sheets will be passed out and will be factored into your class participation grade. In the case of absence, students are responsible to stay current on information regarding materials covered in class and any changes in schedule.

Late Assignments. For each day an assignment is turned late, the total grade will be deducted 5 (five) points. If you have a justified reason for not turning the assignment on time (e.g., due to extenuating circumstances), please let me know prior to the due date. I want to be flexible, yet fair to other students in the class. All late assignments are to be turned in to department.

Academic dishonesty and Incompletes. Each student should be familiar with the guidelines set in the “Code of Student Ethics” for issues pertaining to academic dishonesty. No incompletes (I) will be assigned. There will be no makeup exams unless prior notice is given and documentation of emergency is given.

Topics and Schedule

| Week | Date | Lecture Topic | Readings |
|-------------|----------------|---|-----------------------------|
| 1 | 26 Jan | Software Engineering introduction and course overview | <i>Pressman – Ch. 1</i> |
| 2 | 2 Feb | Software/product development processes | <i>Pressman – Ch.2</i> |
| 3 | 9 Feb | Software Process and Life Cycle | <i>Pressman – Ch.3</i> |
| 4 | 16 Feb | Teams Roles and Agile Development | <i>Pressman – Ch.4</i> |
| 5 | 23 Feb | Overview of Software Practice | <i>Pressman – Ch.5</i> |
| 6 | 2 Mar | Requirements Engineering | <i>Pressman – Ch.7</i> |
| 7 | 9 Mar | Requirements Analysis | <i>Pressman – Ch.8</i> |
| 8 | 16-28 Mar | Mid Term Exam | |
| 9 | 30 Mar | System Engineering | <i>Pressman – Ch.6</i> |
| 10 | 6 Apr | Architecture Design and Metaphors | <i>Pressman – Ch.10</i> |
| 11 | 13 Apr | Software Testing | <i>Pressman – Ch.13 -14</i> |
| 12 | 20 Apr | Software Project Management | <i>Pressman – Ch.21</i> |
| 13 | 27 Apr | Managing Software Quality | <i>Pressman – Ch. 26</i> |
| 14 | 4 Mei | <i>Software Change Management</i> | <i>Pressman – Ch.27</i> |
| 15 | 11 Mei | <i>SEI CMM for Software Appraisal</i> | <i>www.sei.cmu.edu</i> |
| 16 | 25 Mei – 6 Jun | Final Exam | |