## COMPUTER ENGINEERING DEPARTMENT

### Course: CMPE 202  
**Sections 01 & 02**  
**Software Systems Engineering**  
**Semester: Spring 2016**

**Instructor:**  
Dr. M.E. Fayad  
Computer Engineering, College of Engineering, San Jose State University

**Web page:** [http://www.engr.sjsu.edu/fayad](http://www.engr.sjsu.edu/fayad)

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<th>Course Title</th>
<th>Software Systems Engineering</th>
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<tr>
<td><strong>Course Code</strong></td>
<td>CmpE 202</td>
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<td><strong>Sections</strong></td>
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<td><strong>Class Hours &amp; Location</strong></td>
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Section 01  
Monday 6:00 p.m. to 8:45 p.m., Engr. Bldg Room 343  
Section 02  
Wednesday 6:00 p.m. to 8:45 p.m., Engr. Bldg Room 337 |
| **Office Hours**   | Monday: 11:00 to 12:30 p.m.  
Wednesday: 11:00 p.m. to 12:30 p.m.  
Other times: Send an e-mail to schedule an appointment. |
| **Office Location**| ENG 283I                     |
| **Office Phone**   | (408) 924-7364               |
| **E-mail:**        | m.fayad@sjsu.edu             |
| **Preferred Contact** | Through e-mail              |
| **Department Fax** | (408) 924-4153               |
| **Course Web Page**| [http://www.engr.sjsu.edu/fayad/current.courses/cmpe202-spring2016](http://www.engr.sjsu.edu/fayad/current.courses/cmpe202-spring2016) |
2. Course Description

a. Course Overview and Description:

Course Catalog Description
Integrated approach to software systems development including requirements
elicitation, analysis modeling, design modeling, tradeoff studies, risk assessment,
economic evaluation, configuration management, modeling languages, capability
maturity modeling, and software quality management.

Integrated approach to software systems development including requirements elicitation,
conceptual modeling, requirements analysis, software design, software architectures,
tradeoff studies, risk assessment, software reuse through software patterns and
application frameworks, economic evaluation, modeling languages, and all aspects of
software modeling

b. Prerequisites: instructor consent.

c. Suggested Textbooks (Optional):

Patterns, Knowledge Maps, and Domain Analysis”. Boca Raton, FL: Auerbach
http://tinyurl.com/SoftwarePatterns
2. SWEBOK is an official service mark of the IEEE

http://www.swebok.org/

A project of the IEEE Computer Society Professional Practices Committee,
SWEBOK, Guide to the Software Engineering Body of Knowledge, 2004

c. Supporting Textbooks:

4. Bernd Bruegge and Allen H. Dutoit. Object-Oriented Software Engineering:
5. Ghinwa Jalloul, UML by Example, 2nd edition, Cambridge University Press -
ISBN: 0521008816

d. Required Articles, Columns, Case Studies, and Patterns will be posted on the web
later. Materials will be provided for each lecture (check Weekly Schedule).
Other Resources: Instructor notes will be available on the course web page.

e. Course Learning Objectives
1. Have the ability to perform software development tasks from User & system point of views.
2. Have the ability to generate requirements and design artifacts for implementers to construct software systems.
3. Have the ability to work in a team environment.
4. Have the ability to work on advanced and newest topics in software system engineering

3. Course Requirements

a. Projects

I. Team Projects:

The class will be divided into groups of 3-4 (three-four) for team projects. Students will be responsible for forming groups. Students of the best teams’ projects will give final presentations of their project work if asked. Grading criteria and project ideas will be posted in a project Web page. I am part of your team and others will be announced per each team.

Project 1: This project will use the problem statement that is generated by each of the teams of the CmpE 202. This project will focus on Unified Dictionary – Documenting stable analysis and/or design patterns as entries of the Unified Dictionary of a selected topic.

Project 2: This project will use the problem statement that is generated by each of the teams of the CmpE 202. This project will focus on Software Stability Model using UML diagrams to generate stable architectural pattern or architecture on demand.

Project 3 (Optional): Implementation of the architecture on demand – the result of team project #2

II. Individual Assignments:

Individual Assignment 1: Create Traditional (Use Case, CRC Cards, Class Diagram) and answer a set of questions related to reuse, scalability, adaptability, self-adaptability, and self-managed (for extra points – a must do)

Individual Assignment 2: This assignment will focus on Unified Dictionary – Documenting stable analysis and/or design patterns as entries of the Unified Dictionary of three selected concepts using the pattern mid-size and short templates for documenting the three patterns.
Individual Assignment 3: This assignment will focus on Software Stability Model using UML diagrams to generate architecture on demand for a single concept using the pattern detailed template for documenting the pattern.

Individual Assignment 4 (Optional): Implementation of the architecture on demand – the result of the individual assignment #3

NOTE: Each team is only allowed to sign up for one optional project.

• On occasion, students take advantage of group work, letting other members perform the bulk of the work while they reap the benefits of a good grade and can spend more time on other classes. This happens only occasionally, but it will not be tolerated in this course. The team must divide the work load of any of the projects equally between themselves and each member should be responsible for his/her own parts. During submission each member should write his or her name on his or her parts of the final submission.

• Groups experiencing problems with a student should let me know there's a problem with his team. Do this early enough in the semester. My experience is that group members wait until it's too late to take action. My objective is to ensure that each group member has the opportunity to succeed. I will handle the situation and ensure there is no animosity while resolving the problem. Usually, a brief discussion will clear the matter up entirely and without further problems.

b. Exams: Two exams. There will be no make up tests.

4. Tentative Course Calendar:

a. Weekly Schedule - See weekly schedule on the course webpage

b. Due Dates: See due dates on the course webpage

Important:

Late assignments, practical problems, essays, and team projects are NOT ACCEPTABLE. In this case, the grade of any late submissions of extra assignments, practical problems, essays, and team projects will be assigned a “zero” mark. See Due dates on the course webpage.

Please read carefully:
If you accept an assignment (extra assignment, essays, extra team projects), you must do it otherwise you will lose an equal weight of the grade of the assignment.

5. Grades:
a. Grading Policy
Your grade in this course will be based on your performance on written homework, test, and team projects.

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Team Project One</td>
<td>20%</td>
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<tr>
<td>Team Project Two</td>
<td>20%</td>
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<tr>
<td>Individual As</td>
<td>20%</td>
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<tr>
<td>(10% for each)</td>
<td></td>
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<tr>
<td>Midterm Exam</td>
<td>15%</td>
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<tr>
<td>Final Exam</td>
<td>25%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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Options:
AND
Individual Project-3 05% (Optional)
AND
Question Software?? 05%

| Total | 110% |

Extra Individual A2 15% (Replacement of Individual A1)

NOTES:
[1] Exceptional work on one or more of your projects or your assignments will be awarded between 1 to 10 whole points and it will be only awarded with complete submissions of all of your projects, assignments, and exams.

[2] If your final grade is greater than your midterm grade, your final grade will replace your midterm grade.

Final Grades:
Letter grades will be assigned at the end of the course. Final grades will be based on a competitive curve. Graduate and undergraduate students are graded separately. Students will be informed of their standing at intervals throughout the course. Final grades are not negotiable. Unless there are mathematical errors, I will be unavailable to discuss final grades. Borderline cases will be considered with extreme care, and fair grades will be rendered.

b. Extra Credit Options:

1. See Individual Project #3 (Optional), if completed on time, it will be graded for whole 5 or more points.
2. (Individual Assignment) Software
c. Penalty for Late or Missing Work:
   1. No credits for late of any of your team or/and individual projects.
   2. If you sign for individual project #3 and don’t deliver, you will be penalized for 5 whole grade points.
   3. No credits will be given for late submission of essays
   4. Failure to use the submission guidelines three times, you will be panelized for a one (1) whole grade point and block your name from the electronic mails.
   5. Avoid misusing the e-mail system, you may be panelized.

6. University, College, or Department Policy Information:

a. Policy on Cheating:
   • A student or students involved in a cheating incident involving any non-exam instrument (homework, extra assignments, practical problems, reports, or team projects or individual projects) will receive an F on that instrument, and will be reported to the judicial affairs office. Whether the report will carry a recommendation for disciplinary action will be left to my judgment.
   • A student or students involved in a cheating incident on any quick test, the midterm exam or the final exam will receive an F in the course, and will be reported to the judicial affairs office with a recommendation for disciplinary action.

I will personally notify you of any such findings or actions. All such reports will also be brought to the attention of the computer engineering department office. You have certain rights of appeal, which may serve to exonerate you.

Check:

Academic integrity statement (from Office of Judicial Affairs):
“Your own commitment to learning, as evidenced by your enrollment at San José State University and the University’s Academic Integrity Policy requires you to be honest in all your academic course work. Faculty are required to report all infractions to the Office of Judicial Affairs. The policy on academic integrity can be found at http://www2.sjsu.edu/senate/S07-2.pdf

For your reference, the policy defines academic dishonesty as follows (please note the very low tolerance definition of plagiarism):

1.1 CHEATING

San José State University defines cheating as the act of obtaining or attempting to obtain credit for academic work through the use of any dishonest, deceptive, or fraudulent means. Cheating includes:

1.1.1. Copying, in part or in whole, from another’s test or other evaluation instrument
including homework assignments, worksheets, lab reports, essays, summaries, quizzes, etc.;

1.1.2. Submitting work previously graded in another course without prior approval by the course instructor or by departmental policy;

1.1.3. Submitting work simultaneously presented in two courses without prior approval by both course instructors or by the department policies of both departments;

1.1.4. Using or consulting sources, tools or materials prohibited by the instructor prior to, or during an examination;

1.1.5. Altering or interfering with the grading process;

1.1.6. Sitting for an examination by a surrogate, or as a surrogate;

1.1.7. Any other act committed by a student in the course of their academic work that defrauds or misrepresents, including aiding others in any of the actions defined above.

1.2 PLAGIARISM

San José State University defines plagiarism as the act of representing the work of another as one's own without giving appropriate credit, regardless of how that work was obtained, and submitting it to fulfill academic requirements.

Plagiarism includes:

1.2.1 Knowingly or unknowingly incorporating the ideas, words, sentences, paragraphs, or parts of, or the specific substance of another's work, without giving appropriate credit, and representing the product as one's own work;

1.2.2 Representing another’s artistic/scholarly works such as musical compositions, computer programs, photographs, paintings, drawing, sculptures, or similar works as one's own.

b. Campus policy in compliance with the Americans with Disabilities Act:

Students with disabilities who would need some kind of accommodation should make that known to the instructor:

“If you need course adaptations or accommodations because of a disability, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities register with DRC to establish a record of their disability.”
c. Right to Privacy:
You will retain a right to privacy. I will not knowingly reveal your grades, student ID number, phone number, address or other private information to others, except within the limits of university policy. I will ask that you supply your first name, last name and last four digits of your SID on written homework or tests. The grader system requires that you supply the first five digits of your SID as a password. Grader permits you to access your own grade records and your standing in the class online, but no other person’s grade records or personal data.

Hand In:
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All homework assignments and projects need to be typed and handed in as hardcopies and electronically. You also need to demonstrate Projects to the instructor. Hand-written extra assignments and projects are not acceptable and we receive a “zero” mark. Check submission guidelines.

Class Webpage: [http://www.engr.sjsu.edu/~fayad/current.courses/cmpe202-spring2016](http://www.engr.sjsu.edu/~fayad/current.courses/cmpe202-spring2016) contains the syllabus, some of the homework and lecture notes, and occasional notices.