Software Engineering (COSC 3370)  
Department of Computing Sciences  
Spring 2019

A. COURSE INFORMATION

Course number/section: COSC 3370/001  
Class meeting time: TR 2:00 – 3:15 pm  
Class location: CI-128  
Course Website: Blackboard website

B. INSTRUCTOR INFORMATION

Instructor: Sayed Atef Banawan  
Office location: CI 340  
Office hours: TR 10:00 am – 12:00 pm, W 12:00 – 1:00 pm  
Telephone: 361-825-2478  
e-mail: sayed.banawan@tamucc.edu  
Appointments: By e-mail

C. COURSE DESCRIPTION

Catalog Course Description

COSC 3370 - Software Engineering 3 sem. hrs. (3:0) This course introduces students to software engineering principles for the development and maintenance of high quality large software systems. Topics include: software life cycle, delivering on time and within budget, and the development and application of processes and tools for managing the complexities inherent in creating these systems.

Extended Course Description
None

D. PREREQUISITES AND COREQUISITES

Prerequisites
COSC 2437 - Data Structures

Corequisites
None

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

Required Textbook(s)
Optional Textbook(s) or Other References
None

Supplies
None

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT
Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

By the end of this course, students should be able to:

1. Describe the different stages of the software development life cycle.
2. Compare the common software process models: plan-driven, incremental and reuse-oriented.
3. Apply a variety of techniques to derive software requirement specification and distinguish between functional and non-functional requirements.
4. Explain the role of architectural design and the common architecture patterns in software engineering.
5. Utilize different diagrams of the Unified Modeling Language (UML) for the design and implementation of software systems.
6. Communicate effectively in both oral and written forms.

G. INSTRUCTIONAL METHODS AND ACTIVITIES
This course will be a mixture of lectures and discussions of online videos that discuss software development practices by experts. The student is expected to actively participate in all class activities. He or she is also expected to do outside work on assignments, reading, class presentation and project documentation.

H. MAJOR COURSE REQUIREMENTS AND GRADING
This is a high-level core course. It requires students to carry out a group project of a
substantial size from specification to implementation. The course is difficult that demands students attend all classes! Timely completion of all reading, homework, and other outside assignments are absolutely essential for success in this course. The assessment of the course learning outcomes will be based on the student’s performance in the homework assignments, quizzes, project, and two exams.

The distribution of points is as follows:

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two Exams</td>
<td>45</td>
</tr>
<tr>
<td>Quizzes</td>
<td>10</td>
</tr>
<tr>
<td>Homework</td>
<td>10</td>
</tr>
<tr>
<td>Team Project</td>
<td>30</td>
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<tr>
<td>Attendance and Participation</td>
<td>5</td>
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</tbody>
</table>

Grading scale: A: 100-90, B: 89-80, C: 79-70, D: 69-60, and F: 59-0.

Homework Assignments: Approximately 2-5 homework assignments will be given. No late homework assignments will be accepted. Partial credit will be given for incomplete assignments.

Quizzes: 2-4 (possibly pop-up) quizzes. A quiz may take 10-30 minutes.

Exams: The first exam will be given on Thursday, February 28th, 2019, the second exam will be given on Thursday, April 16th, 2019 during the scheduled class time. Demonstrations of the course group project will be made during the time slot reserved for the final examination, May 7th, 2019, 1:45– 4:45 pm.

I. COURSE CONTENT/SCHEDULE:

<table>
<thead>
<tr>
<th>DATE (BY DAY OR WEEK)</th>
<th>TOPIC</th>
<th>CHAPTER(S)</th>
<th>ASSIGNMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Introduction and Overview</td>
<td>Chapter 1</td>
<td></td>
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<tr>
<td>Week 2</td>
<td>Software Processes</td>
<td>Chapter 2</td>
<td>HW1</td>
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<tr>
<td>Week 3</td>
<td>Requirement Engineering</td>
<td>Chapter 4</td>
<td>Project Proposal Submission</td>
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<td>Week 4</td>
<td>Project Planning</td>
<td>Chapter 23 (Sections 1-4)</td>
<td>HW2</td>
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<td>Week 5</td>
<td>Agile Software Development</td>
<td>Chapter 3</td>
<td>Project Requirement Engineering Submission</td>
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<td>Week 6</td>
<td>System Modeling</td>
<td>Chapter 5</td>
<td></td>
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<tr>
<td>Week</td>
<td>Topic</td>
<td>Lecture Notes</td>
<td></td>
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<tr>
<td>7</td>
<td><strong>UML Exam 1 (2/28/2019)</strong></td>
<td>Lecture Notes</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Project Progress Presentation</td>
<td>In Class</td>
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<td></td>
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<td>Project groups give a full presentation for their accomplishment.</td>
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<tr>
<td>9</td>
<td>Architectural Design</td>
<td>Chapter 6</td>
<td></td>
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<tr>
<td>10</td>
<td>Design and Implementation</td>
<td>Chapter 7</td>
<td></td>
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<td>11</td>
<td>Software Cost Estimation</td>
<td>Chapter 23 (Sections 5-6)</td>
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<td></td>
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<td>Project Modeling Submission</td>
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<tr>
<td>12</td>
<td>Reliability Engineering</td>
<td>Chapter 11</td>
<td></td>
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<tr>
<td>13</td>
<td>Selected Topic in SW Exam 2 (4/16/2019)</td>
<td>Lecture Notes</td>
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<td>Final Report Submission due on 4/18/2018 for all students. No late submission is allowed.</td>
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<tr>
<td>14</td>
<td>Final Project Presentations</td>
<td>In Class</td>
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<tr>
<td>15</td>
<td>Final Project Presentations</td>
<td>In Class</td>
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**Final Project Demonstration** on Tuesday, May 07, 2019 from 1:45-4:15 PM.

**Note:** Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the Students Learning Outcomes described in Section F.

J. **COURSE POLICIES**

**Attendance/Tardiness:** You must attend all classes and arrive on time. 5% of the overall course grade is allocated for attendance and participation. Being absent without an excuse or tardy is penalized by deducting points from the “Attendance and Participation” grade.

The class meets on Tuesday and Thursday, when new material will be presented. We will follow the text generally, but non-text material may also be included in the lectures.

You are responsible for any materials covered or handed out or announcements made for the tests and assignments in your absence.

The assignments and exams will be given during the class hours. You are responsible for all the material presented during the lecture.

**Late Homework:**
Late assignments are not accepted unless an excuse approved by the instructor is submitted to justify the delay.
Exams:
Exams will cover all lecture and reading material discussed in the class. Exams must be taken on the hour they are scheduled. The second exam is comprehensive.

Extra Credit:
No extra credit.

Cell Phone Use:
Please refrain from using electronic devices during class, as it is distracting to not only you, but also to your instructor and peers. Silence your phones and put them away so you are not tempted to stray off task.

Laptop Use
Laptops, Tablets cannot be used in the class.

Food in Class
No food in the class or labs.

Missed Exam:
In the event, if you cannot attend the class to take the exam due to some emergency or some unavoidable situation (such as serious illness, death in the family, participation in university sports, religious observations, and so on) you must notify me as soon as possible before the exam and also you must validate your absence by providing me a document (e.g., with a letter from your doctor). Once your cause is validated a make-up exam may be given or the weight of the missed exam is distributed on other assessments.

Participation:
You must attend all classes and arrive on time. 5% of the overall course grade is allocated for attendance and participation. Being absent without an excuse or tardy is penalized by deducting points from the “Attendance and Participation” grade.

Grading Error: All questions concerning a test score or grading of a returned test or assignment must be resolved within one week. It is always a good idea to keep all of your work until the end of the semester. In case of any recording errors or doubts, you may produce them for correction or verification.

Academic Honesty Policy: You are expected to avoid all forms of academic dishonesty as defined in Catalog. In addition, students are expected to behave in an ethical manner in all class activities. If you feel uncertain about a particular activity, please speak to me BEFORE problems arise. Ethical behavior is a requirement for passing this course. All work submitted for grading must be the student's own work. Plagiarism will result in a score of 0 (zero) for the work or dismissal from the course and the Dean of Students office will be notified. No copying from another student's work, of any class, is allowed. It is the student's duty to allow no one to copy his or her work. Anyone found cheating and/or copying, in the exams or assignments, in the instructor's opinion, will receive an automatic F for the course.
K. COLLEGE AND UNIVERSITY POLICIES

- **Academic Integrity (University)**
  University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a failing grade.

- **Classroom/Professional Behavior**
  Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

- **Statement of Civility**
  Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

- **Deadline for Dropping a Course with a Grade of W (University)**
  I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with your academic advisor, the Financial Aid Office, and me, before you decide to drop this course. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Please consult the Academic Calendar (http://www.tamucc.edu/academics/calendar/) for the last day to drop a course.

- **Grade Appeals (College of Science and Engineering)**
  As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards
as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at http://www.tamucc.edu/provost/university_rules/index.html, and the College of Science and Engineering Grade Appeals webpage at http://sci.tamucc.edu/students/GradeAppeal.html. For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

- **Disability Services**
  The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116.

  If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

  [http://disabilityservices.tamucc.edu/](http://disabilityservices.tamucc.edu/)

- **Statement of Academic Continuity**
  In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.

L. OTHER INFORMATION

- **Academic Advising**
  The College of Science & Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the
department chair. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

GENERAL DISCLAIMER

I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.