CS435: SOFTWARE ENGINEERING

Spring 2016

<table>
<thead>
<tr>
<th>Professor:</th>
<th>Dr. Amiangshu Bosu</th>
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<tbody>
<tr>
<td>Email:</td>
<td><a href="mailto:abosu@cs.siu.edu">abosu@cs.siu.edu</a></td>
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<tr>
<td>Time:</td>
<td>TR 9:35 AM – 10:50AM</td>
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<td>Place:</td>
<td>FANR 1005.</td>
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Course Page: SIU Desire2Learn (http://online.siu.edu)

Office Hours: Room: FANER 2132, TR 12:30PM-3:30PM or by appointment.

TA: Praveena Palaparthi (praveenasiuc@siu.edu)

Text:


Course Objectives:

- Understanding the role of software in systems.
- Understanding why SE practices are important.
- Knowing good basic SE practices.
- Able to make simple engineering tradeoffs.
- Possessing basic skills using SE tools and practices.
- Having applied those skills in a structured setting with realistic challenges.

Prerequisites: CS 330 with a grade of C or better; CS 306 with a grade of C or better recommended.

Grading Components:

- Attendance & Class Participation: 10%
- Homeworks: 20%
- Team Project: 30%
- Midterm Exam: 20%
- Final Exam: 20%
Grading Policy:
Your written assignments and programs should be prepared in electronic documents submitted through SIU online system (https://online.siu.edu). Upon receiving a graded assignment, if you have a dispute about the grading, please return the assignment to the T.A. within a week, with a note explaining your concerns. T.A. will decide if he needs to re-grade it or not. The re-graded paper will be returned to you and the grade posted on the blackboard will be updated. If you still have questions, you can talk to me in person about the disputes during my office hours.

Team Project:
A team with no more than 4 students is allowed for this collaborative work. The ultimate goal is to deliver reliable and trustworthy systems economically and quickly. The software must meet all requirements before releasing it to the customer. Your team will investigate a particular real-life sophisticated problem that is of interest to you. I will also provide several candidate final projects for you to choose from. Design and implement the system that integrates several software engineering principles and practices you learnt in the class. Project proposal should be submitted to get my approval. You will write a report and give a presentation with live demo to the class during the last week of the semester.

Exams:
Midterm Exam: 9:35AM, Thursday, 03/10/2016
Final Exam: 8:00AM, Thursday, 05/12/2016
There will be no makeup exams. If you cannot take an exam during scheduled time, you should consult me in advance.

Late Policy:
Homeworks must be submitted to blackboard by the due time unless you have my prior approval. The late policy for all assignments is as follows: 20% points off, if submitted within 24 hours after the due date; 50% off, if submitted 24-72 hours after the due date; no credit if submitted three or more days after the due date unless prior arrangements are made with me with acceptable reasons. Partially finished assignments will receive partial credit.
Course Outline:

| Software Lifecycle                  | o Introduction to Software engineering  
| o Plan-Driven Development          | o Agile Development                    |
| Requirements Engineering           | o Principles that Guide Practice       |
| o Understanding Requirements       | o Requirements Modeling: Scenarios, Information, and Analysis Classes |
| o Requirements Modeling: Flow, Behavior, Patterns, and WebApps |
| Modeling and Design                | o Design Concepts                      |
| o Architectural Design             | o Component-Level Design               |
| o User Interface Design            | o Design Patterns                      |
| Quality Assurance                  | o Software Quality Assurance           |
| o Software Testing Strategies      | o Test-driven Development              |
| o Static analysis                  | o Automated Testing                    |
| o Automated Testing                | o Code Reviews                         |
| o Code Reviews                     | o Software Security                    |

Academic Dishonesty:
If you cheat on an assignment or an exam in this class, you will receive a zero for the assignment. A second violation will result in an immediate ‘F’ for the course. For more information, please check CS department’s webpage on academic dishonesty: [http://cs.siu.edu/resources/cs_academic_dishonesty.php](http://cs.siu.edu/resources/cs_academic_dishonesty.php).
IMPORTANT DATES *
Semester Class Begins ............................................. 01/19/2016
Last day to add a class (without instructor permission): .............. 01/24/2016
Last day to withdraw completely and receive a 100% refund: ........ 01/31/2016
Last day to drop a course using SalukiNet: ........................ 04/03/2016
Last day to file diploma application (for name to appear in Commencement program): ........................................ 02/12/2016
Final examinations: .................................................. 05/09–05/13/2016

Note: For outreach, internet, and short course drop/add dates, visit Registrar’s Academic webpage http://registrar.siu.edu/

SPRING SEMESTER HOLIDAYS
Martin Luther King, Jr.’s Birthday Holiday 01/18/2016
Spring Break 03/12—03/20/2016

WITHDRAWAL POLICY ~ Undergraduate only
Students who officially register for a session may not withdraw merely by the stopping of attendance. An official withdrawal form needs to be initiated by the student and processed by the University. For the proper procedures to follow when dropping courses and when withdrawing from the University, please visit http://registrar.siu.edu/catalog/undergraduategocatalog.html

INCOMPLETE POLICY ~ Undergraduate only
An INC is assigned when, for reasons beyond their control, students engaged in passing work are unable to complete all class assignments. An INC must be changed to a completed grade within one semester following the term in which the course was taken, or graduation, whichever occurs first. Should the student fail to complete the course within the time period designated, that is, by no later than the end of the semester following the term in which the course was taken, or graduation, whichever occurs first, the incomplete will be converted to a grade of F and the grade will be computed in the student’s grade point average. For more information please visit: http://registrar.siu.edu/grades/incomplete.html

REPEAT POLICY
An undergraduate student may, for the purpose of raising a grade, enroll in a course for credit no more than two times (two total enrollments) unless otherwise noted in the course description. For students receiving a letter grade of A,B,C,D, or F, the course repetition must occur at Southern Illinois University Carbondale. Only the most recent (last) grade will be calculated in the overall GPA and count toward hours earned. See full policy at http://registrar.siu.edu/catalog/undergraduategocatalog.html

GRADUATE POLICIES
Graduate policies often vary from Undergraduate policies. To view the applicable policies for graduate students, please visit http://gradschool.siu.edu/about-us/grad-catalog/index.html

DISABILITY POLICY
Disability Support Services provides the required academic and programmatic support services to students with permanent and temporary disabilities. DSS provides centralized coordination and referral services. To utilize DSS services, students must come to the DSS to open cases. The process involves interviews, reviews of student-supplied documentation, and completion of Disability Accommodation Agreements. http://disabilityservices.siu.edu/

PLAGIARISM
Student Conduct Code http://srr.siu.edu/student_conduct_code/

MORRIS LIBRARY HOURS
http://www.lib.siu.edu/about

SAFETY AWARENESS FACTS AND EDUCATION
Title IX makes it clear that violence and harassment based on sex and gender is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, etc. If you or someone you know has been harassed or assaulted, you can find the appropriate resources here: http://safe.siu.edu

SALUKI CARES
The purpose of Saluki Cares is to develop, facilitate and coordinate a university-wide program of care and support for students in any type of distress—physical, emotional, financial, or personal. By working closely with faculty, staff, students and their families, SIU will continue to display a culture of care and demonstrate to our students and their families that they are an important part of the community. For Information on Saluki Cares: (618) 453-5714, or siucares@siu.edu, http://salukicares.siu.edu/index.html

EMERGENCY PROCEDURES
Southern Illinois University Carbondale is committed to providing a safe and healthy environment for study and work. We ask that you become familiar with the SIU Emergency Response Plan and Building Emergency Response Team (BERT) programs. Emergency response information is available on posters in buildings on campus, available on BERT’s website at www.bert.siu.edu, Department of Safety’s website at www.dps.siu.edu (disaster drop down) and the Emergency Response Guideline pamphlet. Instructors will provide guidance and direction to students in the classroom in the event of an emergency affecting your location. It is important that you follow these instructions and stay with your instructor during an evacuation or sheltering emergency.

INCLUSIVE EXCELLENCE
SIU contains people from all walks of life, from many different cultures and sub-cultures, and representing all strata of society, nationalities, ethnicities, lifestyles, and affiliations. Learning from and working with people who differ is an important part of education as well an essential preparation for any career. For more information please visit: http://www.inclusivenessuexcellence.siu.edu/

LEARNING AND SUPPORT SERVICES
Help is within reach. Learning support services offers free tutoring on campus and math labs. To find more information please visit the Center for Learning and Support Services website:
Tutoring: http://tutoring.siu.edu/
Math Labs http://math.siu.edu/courses/course-help.php

WRITING CENTER
The Writing Center offers free tutoring services to all SIU students and faculty. To find a Center or Schedule an appointment please visit http://write.siu.edu/

AFFIRMATIVE ACTION & EQUAL OPPORTUNITY
Our office's main focus is to ensure that the university complies with federal and state equity policies and handles reporting and investigating of discrimination cases. For more information visit: http://diversity.siu.edu/

Additional Resources Available:
SALUKINET: https://salukinet.siu.edu/ep/home/displaylogin

ADVICE: http://advisement.siu.edu/

PROVOST & VICE CHANCELLOR: http://pvcaa.siu.edu/

SIU ONLINE: http://online.siu.edu/

Spring 2016 R.O'Rourke