

CSC4330 Software Systems Development Class Syllabus - Fall 2016

Instructor	Dr. Nash Mahmoud Email: mahmoud@csc.lsu.edu Office: 313, Electrical Engineering Building Phone: 225-578-0883 Office Hours: W 10:00 am - 12:00 am (Open door policy)
Lecture Sections	Section 1 MW 5:00 pm – 6:20 pm 0152 COATES
T.A.	Grant Williams gwill83@lsu.edu
Prerequisite	CSC 3102 Advanced Data Structures and Algorithm Analysis CSC 3380 Object Oriented Design
Credit Hours	3 Hours
Textbook	Pfleeger, S. L. <i>Software Engineering: Theory and Practice</i> , Fourth Edition, Prentice Hall.
Objectives	<ul style="list-style-type: none">• Master principles of the software development process, including: process understanding, selection, and implementation.• Master the understanding of domain analysis and requirements engineering.• Be exposed to technical writing including: requirements specification, design, and testing documents.• Master the role of management in software development.• Master working in a team on a moderate-size software development project, and be familiar with the difficulties of team work and strategies to overcome those difficulties.• Master the presentation of technical development concepts orally to a group.• Be familiar with formal specification notations.• Master attributes and assessment of quality, reliability, and security of software.• Master the knowledge and comparison of various testing and QA strategies.
Topics	<ul style="list-style-type: none">• Software process, methods, and tools.• Software process models, including the waterfall model, the incremental model, the spiral model, and prototyping models.• Management concepts such as: team organization (chief programmer team, democratic team and manager team), planning and scheduling (milestones, PERT charts, Activity charts and staff allocation).• Factors that affect the quality of software and software quality assurance.• Process, project, and software metrics.• Software project planning including software scope, estimation of resources, project cost estimation, decomposition techniques and empirical estimation models.• Requirements analysis, elicitation, and specification.• Specification methods models including system models, functional specification models, non-functional specifications.

- Design concepts including abstraction, refinement, modularity, software architecture, data structures and information hiding
- Factors that affect effective modular design: functional independence, cohesion, and coupling
- Software testing techniques: white-case, white-box, basis path testing (flow graph notation, cyclomatic complexity, graph matrices, etc.), black-box testing, and system testing.
- Software maintenance and configuration management
- Cleanroom approach to software engineering
- Reverse engineering and reengineering

Grading Policy

There will be five homework assignments related to the class project, two group presentations, a midterm, a final exam, and several class quizzes.

Points Distribution:

Midterm	20%
Final Exam	30%
Assignments (5)	30%
Quizzes and readings	10%
Presentations	10%
Total	100%

Grade Scale

From	To	Grade
≥ 97	100	A+
≥ 93	< 97	A
≥ 90	< 93	A-
≥ 87	< 90	B+
≥ 83	< 87	B
≥ 80	< 83	B-
≥ 77	< 80	C+
≥ 73	< 77	C
≥ 70	< 73	C-
≥ 67	< 70	D+
≥ 63	< 67	D
≥ 60	< 63	D-
0	< 60	F

Presentation

The term project will be a medium-sized group project involving the design and development of a non-trivial software system; the class will be divided into several working groups, with students being strongly encouraged to form their own based upon compatibility. There will be two presentations, including a preliminary and a final project demonstrations. All group members must participate in the presentations; each will be judged and graded on preparation and presentation skills as well as content.

Class Policy

- Attendance policy: Please refer to LSU attendance policy **PS-22**
- Academic honesty: Please refer to the LSU CODE OF STUDENT CONDUCT for more information
- Students are responsible for checking email FREQUENTLY.
- Moodle will be used to manage the class including: students' grades, posting and submitting assignments, the class material and any other resources.
- Make up tests will be given at the discretion of the instructor. Contact me.
- NO access to phones, iPods, etc. during the tests/exams.
- ALL problems concerning grades MUST be resolved within 3 class days following the return of graded work.
- Assignments must meet the assignment objectives, programming and documentation standards and professional communication standards.
- No assignments submission is allowed after the deadline.

Email

Every student will be required to use his/her official email address that is *student_netid@lsu.edu*. All email communications will be made using this address. It is not uncommon for additional instructions or guidance to be sent by email, so check your email often. Students will be responsible for any instructions sent by email more than 24 hours old. The instructor checks email at least every 24 hours (and often more frequently than that) so email is the best way to contact the instructor.

Final Exam

Wednesday, December 7th, 2016 from 8:00 PM to 10:00 PM