CSC 510 Course Syllabus

August 20, 2015

Software Engineering
Fall 2015
North Carolina State University

Vital Information

Instructor	Dr. Emerson Murphy-Hill (emerson@csc.ncsu.edu)
Instructor Office Hours	Tuesday (for in-class students) and Thursday (for distance students), 9:30-10:30 in EB II, Room 3296
TAs	Esha Sharma (esharma2@ncsu.edu) and Yihuan Dong (ydong2@ncsu.edu)
TA Office Hours	Monday (2-3), Wednesday (11-12) in EB II, Room 1229B
Web page	`https://moodle1516-courses.wolfware.ncsu.edu/course/view.php?id=1008`
Lecture	TTh 8:05AM - 9:20PM in EB II, Room 1230
Readings	Provided by instructor
Credit-hours	3

Prerequisites	CSC222 (Discrete Mathematics) and CSC311 (Data Structures), or similar, graduate or senior standing with at least 3.0 GPA, good knowledge of at least one high level programming language, knowledge of the basics of statistics and linear algebra.

1   Outline

The course is an introduction to software engineering. We will study and discuss state-of-practice and state-of-the-art principles, methods, and tools for planning, design, coding, validation and maintenance of software systems. We will cover the following topics: software specification and design techniques, formal methods (e.g. proofs of correctness), programming methodology, program testing, software reliability, and software (risk) management. The course discusses both the empirical aspects of software engineering and the underlying theory. Practical software engineering is given special attention.

2   Objectives

Students are expected to gain an insight into the software process and learn about the software engineering principles, methods, and tools knowledge essential to a software professional.

3   Course Topics

Introduction, Software Process and Planning (including management issues), Software Costs and Schedules, Software Specification and Requirements, Software Design, Implementation, Software Testing (methods, metrics, and tools), Verification and Validation, Maintenance, Security, and other topics.

4   Who Should Attend

Computer science students, computer networking students, computer engineering students, all students that anticipate working is software production, software pro-

fessionals who have not had prior formal training in software engineering, managers associated with software production.

5   Equity Policy

All persons, regardless of age, race, religion, gender, physical disability or sexual orientation shall have equal opportunity without harassment in this course. Any harassment should be reported immediately to the instructor.

6   Late Policy

No late assignments will be accepted. Many of your assignments will be collaborative effort with other members of your group. Thus, late papers by one member of the group will affect the entire group. The due date for assignments will be posted on the assignment and will generally be submitted electronically.

7   Rules of the Road

Unexcused absences from the final exam will result in an F for the course.

The other rule is to have a good time!

8   For the Uninitiated

This course is based on reality, that is, we will try to cover the real world aspects of software engineering. Outside reading and discussions with your classmates is expected.

You will find out that we grade project writeups very carefully. What that translates to is that we expect outstanding work on them and no less. If you do not have a grammar checker, find one! Although this isn't an English course, we do expect you to know how to write.

9 Teaching Philosophy

We will make use of intensive classroom activities and readings. You will be expected to participate actively in discussions. On any given issue, you may be asked to summarize and criticize reading assignments from the text or articles that you have read for your assignments and projects. We view the web as a valuable resource. Our course website will serve as our "information system" this semester; you will be expected to visit the site on a daily basis for updates and to obtain your homework / project assignments.

Only you can learn. As the instructors, we can only guide and assist you. Thus, all of the class activities are aimed at helping you learn.

10 Writing Style

All writing assignments are expected to be spell checked and proof read. Incomplete sentences will not be read. The following book is an excellent resource to assist you in preparing your written assignments: *Ten Lessons in Clarity in Grace* by Joseph Williams.

Dr. Tao Xie's slides on Advice on Writing Research Papers (`http://people.engr.ncsu.edu/txie/publications/writepapers.pdf`) and Common Technical Writing Issues (`http://people.engr.ncsu.edu/txie/publications/writeissues.pdf`) are also useful.

11 Academic Integrity

The course will follow all NCSU academic integrity regulations. (`http://www.ncsu.edu/provost/academic_policies/`) All students are expected to maintain traditional standards of academic integrity by giving proper credit for all work. All suspected cases of academic dishonesty will be aggressively pursued. A student shall be guilty of a violation of academic integrity if he or she represents the work of others as his or her own or aid another's misrepresentation. Any violation associated with a homework/lab assignment, project deliverable, examination or quiz will result in a failing grade for the course. Such violations will be reported to the Office of Student Conduct, which may impose penalties beyond those by the instructors.

We encourage you to read the ACM Code of Ethics, particularly Sections 1.3, 1.5, 1.6, 2.2 and 2.4. (`http://www.acm.org/constitution/code.html`)

12   Students with Disabilities

The course will follow all NCSU regulations relevant to students with disabilities. Any students requiring additional assistance due to disabilities (e.g., learning disabilities), should contact the professor during the first week of the semester. Students requiring extra time for examinations and quizzes are asked to make arrangements at least three days in advance. You may contact the NCSU Disability Services for Students Office regarding campus services at the Student Health Center for more information and assistance (`http://www.ncsu.edu/dso/students/`).

13   Grading and Attendance Policy

Students are responsible for all material covered in the classes/lectures and all the material covered by the required textbook and in the reading assignments (even if it is not explicitly covered in the class). Attendance to lectures is expected, but will not be tracked. However, the professor is notorious for expecting active in-class participation and lively discussions, subsequently, your daily attendance in class will be favorably looked upon. Additionally, in-class assignments are graded when attendance is perceived to be low. Although many resources will be made available to you on the course website, don't be fooled into thinking that you will be able to "get" the class by simply looking at the web page. Many announcements and materials will only be discussed in class. If you miss a class session, it is your responsibility to find out what you missed.

Attendance at the final exam is mandatory.

Students are not allowed to audit this course.

Students may only enroll for this course on a letter grade basis.

The course will use +/- grading policy. The following grade scale will be used: A (93-100), A-(90-92), B+ (87-89), B (83-86), B-(80-82), C+ (77-79), C (73-76), C-(70-72), D+ (67-69), D (63-66), D-(60-62), F (below 60). **Note!** An A+ in the class can only be earned with exceptionally good project work; this will be defined more precisely during class.

Individual grades for this course will be based on the following: individual assignments, final exam, participation and project work.

All class announcements will be made via the News and Announcement web pages. Please use e-mail to contact us if you have any questions.

The weighting of assignments is listed below. If any adjustments are made to the weighting scheme during the semester, they will be announced to the class.

14 Course Evaluation

Online class evaluations will be available for students to complete during the last two weeks of class. Students will receive an email message directing them to a website where they can login using their Unity ID and complete evaluations. All evaluations are confidential; instructors will never know how any one student responded to any question, and students will never know the ratings for any particular instructors.

Evaluation website	`https://classeval.ncsu.edu`
Student help desk	`classeval@ncsu.edu`
Info about ClassEval	`http://www2.acs.ncsu.edu/UPA/` `classeval/index.htm`

15 Course Grading

Category	Weight
Final Exam	20%
Final Project	45%
Homework Assignments	25%
Participation	10%

Any unexcused absence from the final exam will result in a grade of 0 for the exam and an F for the course.

Acknowledgements

This document prepared from a previous version from Dr. Tao Xie.