CSC 326 | Section 001 – Course Syllabus
Software Engineering
2011 Spring Semester

Section 001:   MW 10:40a – 11:30p in Engineering Building I 1007

Instructor: Dr. Sarah Heckman
Office: Engineering Building II, Room 2297
Office Hours: Centennial Campus: M 1:30p – 2:30p in EBII 2nd Floor Lobby
                   Main Campus: T 11:15a – 12:15a in Daniels 219-D
                   and by Appointment
Email and AIM: sarah_heckman@ncsu.edu
Telephone: (919) 515.2042

TA: Jason King
Office: Engineering Building II, Room 3228
Office Hours: T 1:30p – 3:00p in EBII 3228
Email: jtking@ncsu.edu

TA: Antonio Rodriguez
Office: Engineering Building II, Room 3228
Office Hours: M 2:15p – 3:45p in EBII 3228
Email: ajrodri2@ncsu.edu

Lab Information
Section 201:   H 11:45a – 1:35p   (TA: Jason King)
Section 202:   H 1:50p – 3:40p   (TA: Jason King)
Section 203:   H 3:55p – 5:45p   (TA: Antonio Rodriguez)

Course Website & Contacting Teaching Staff

This semester we will be using the Moodle Course Management System. When you log into the Moodle system, your course section will be listed. To access all course information, use the following URL:

   http://moodle.wolfware.ncsu.edu

When you have a question, we recommend that you email the class support list, csc326-001-sup@wolfware.ncsu.edu. By emailing the support list, the instructor and TAs will receive your question. If you have a question that everyone would benefit from knowing the answer to, please post to the course Moodle Forum found under the top level topic.

Course Objectives

CSC326 introduces students to the discipline of developing useful and high-quality software-based systems. Students will be exposed to the techniques needed for the practice of effective software

engineering as well as the skills required to succeed as a software professional. By the end of the course, you should be able to do the following things:

- **Testing.** Students will be able to write and execute a comprehensive black box test plan, to write and execute white box tests, to automate both black and white box tests, and to conduct a software inspection.
- **Design.** Students will be able to create a design for a small to medium object-oriented program and to evaluate the quality of their design through heuristics and metrics.
- **Design Patterns.** Students will be able to understand and apply design patterns in small to medium object-oriented programs.
- **Requirements.** Students will be able to understand and create a software requirements document, including security and privacy requirements.
- **Software Process.** Students will be able to understand the essential components of a software development process and how to devise a software development process appropriate to the project under development.
- **Communication and Teamwork.** Students will be able to work in small project teams to complete a medium-sized project.
- **Project Management/Risk Management.** Students will be able to manage project tasks (project management) including risks associated with a medium sized project.
- **Maintenance.** Students will be able to understand various types of software maintenance.

Prerequisites

The prerequisites for this class are CSC230 AND (CSC314 OR CSC316). Basic programming skills are <u>definitely</u> required. This course involves a significant amount of Java programming.

Required Materials

NCSU CSC 326 Course Pack "A (Partial) Introduction to Software Engineering Practices and Methods" by Laurie Williams

Hardware/Software Support

The course programs will be done in Java, JSP, JavaScript, JQuery,XML, HTML, and using relational databases. Automated testing will involve several of the following technologies: JUnit, HttpUnit, Selenium, JsUnit, and QUnit. Students will be provided with resources about these technologies as appropriate, but are expected to learn how to use the technologies on their own.

All course projects will be completed in the open-source Eclipse development environment. This development environment is available for use in the EBII Laboratory for Collaborative Systems Development (EBII 3228) and is freely available for download for use on personal computers. If you choose to develop your assignments outside of the Laboratory for Collaborative Systems Development, **you MUST ensure that your assignments compile and run in the lab environments**. **If we cannot get your code to compile and run on the lab machines, you will lose 10 points on the assignment grade.** Throughout the semester, we will use several plug-ins to the Eclipse development environments. Tutorials will be provided for set up of Eclipse, associated plug-ins, and the course project on personal computers throughout the semester.

Grading

Graded Elements	Weight
Midterm	20%
Final Exam	25%
Lab Attendance and Participation	15%
Team Project	20%
Other Assignments	20%

Grading will be on the following scale where X is your overall weighted average using the above percentages:

Range	Grade
97 <= X <= 100	A+
93 <= X < 97	A
90 <= X < 93	A-
87 <= X < 90	B+
83 <= X < 87	B
80 <= X < 83	B-

77 <= X < 80	C+
73 <= X < 77	C
70 <= X < 73	C-
67 <= X < 70	D+
63 <= X < 67	D
60 <= X < 63	D-
X < 60	F

To receive a grade of D- or better in CSC 326, you must have a passing grade (weighted average of 60% or above) in the five individual coursework elements: Midterm, Final, Homework 1, Homework 2 Part 1, and Homework 4. You must also have a passing grade (weighted average of 60% or above) in the three collaborative coursework elements: Homework 2 Part 2, Homework 3, and the Team Project.

See the following pseudo-code for the passing formula (returning true indicates passing):

```
individualWeightedAverage = ((midterm * 0.20 + final * 0.25 +
            hw1 * 0.02 + hw2Part1 * 0.036 + hw4 * 0.06) / 56.6) * 100;
//where hw2Part1 is worth 60 points or 3.6% of the total HW2 6%

collaborativeWeightedAverage = ((hw2Part2 * 0.024 + hw3 * 0.06 +
            teamProject * 0.20) / 28.4) * 100;
//where hw2Part2 is worth 40 points or 2.4% of the total HW2 6%

return individualWeightedAverage >= 60 && collaborativeWeightedAverage >= 60;
```

Exams

The midterm and final exam cover 45% of your final grade. **Any** unexcused absence from the midterm or final exam will result in a grade of 0 for the exam.

Lab Attendance and Participation

Students are required to attend one two-hour laboratory each week. Students must allow 15-30 minutes to read the lab assignment and complete a pre-lab assignment **before** arriving at the lab. Attendance will be taken. **All students are required to stay for the entire two hours;** because, the second half of most labs gives you time to work on the assignment/team project with your partner/team. **You will lose attendance credit if you leave early or arrive late.** Depending upon the

lab, you will receive full credit for the lab by simply attending and participating. In other labs, your work will be graded or you will need to complete a post-lab assignment. This will be made clear on each lab assignment.

Lab attendance and participation are worth 12 of the 15 points in this category. Exercises before, during or after the lecture are worth 3 points.

Experience has shown that attendance is extremely important – both in lecture AND lab – for your success in this class. If you fail to show up, you not only hurt yourself, but also your partner or the other members of your team. The following strict attendance policy reflects this importance. Success in CSC 326 depends on making a commitment to attend all the lectures and labs.

Labs
If you miss one unexcused lab, you will automatically **lose 5 points** of the 12 allotted to labs; miss two unexcused labs and you will **lose 10 points** (one full letter grade); miss three or more unexcused labs and you will **fail** the course.

If you miss more than 10 minutes of lab without a documented excuse, you will **lose 2 points** of the 12 allotted to labs. If you miss more than 30 minutes of lab without a documented excuse, you will **lose 4 points.**

If you fail to complete the pre- or post-lab assignments for a given lab, you will **lose 2 points** of the 12 allotted to labs.

Lecture
During certain milestones after finishing some major lecture topics, the instructor will ask students to do an exercise before, during, or after class to assess how well students have mastered the covered topics and adjust the teaching schedule accordingly. The student answers on the exercises are not directly graded, but if you miss submitting one exercise due to an unexcused absence, you will **lose 1 point**, until you lose all 3 points for exercises associated with the lecture.

Team Project

A team project will be completed in groups of four or five students. This course is based on reality, so the project will be as real-world as we can make it… which might just mean that some aspects of the project may intentionally cause you some heartache (such as ill-defined AND/OR changing requirements). Remember, it's for your own good.

Other Assignments

Leading up to the Team Project, you have four (4) assignments. Homework 1 will count for 2% and Homeworks 2-4 will count 6% each.

Homework Deadlines and Late Work

The due date for assignments will be posted on the assignment and will be submitted through Moodle. Your Homework, Team Project deliverables, and pre-labs will be submitted via your **lab section's**

Moodle page. Exercises associated with the lecture requiring submission or conducted through Moodle will be done via the **lecture's** Moodle page.

Late assignments will not be accepted. Much of your work will be done in pairs or teams. Thus, late homework by one member of the group will necessarily affect the grade of the entire group.

Grade Appeals

If at any time you feel an assignment was graded improperly, write a request for a regrade and explain why you believe the assignment was graded improperly. First discuss the grade with the TA who graded the assignment. If you are still unsatisfied with the answer submit the assignment to the instructor for a regrade. **All regrade requests must be submitted to the TA or instructor no later than 2 weeks after the assignment was returned to you! Please talk with the TA who graded the assignment FIRST and have the written regrade explanation!**

Professionalism

Students are expected to conduct themselves in a respectful and professional manner at all times. Students are expected to act professionally both in person and electronically with all members of the teaching staff and with their classmates.

Written correspondence (including comments) with the teaching staff is expected to be (mostly) grammatically and syntactically correct. Additionally, written correspondence, including email, should be spell checked. Do not use abbreviations or l33t speak in written correspondence for this class.

Communication, both written and verbal, should be respectful and should never include derogatory comments about yourself or others. All criticism (of yourself, the course, instructor, TAs, fellow students, resources, etc.) should be constructive. Report any unprofessional behavior by any class member (including the instructor and TAs) to the instructor.

Credit Only and Audit Students

The grade of "CR" will be awarded to students who earn a 70% or higher in the course and have attempted all programs and exams.

The grade of "AU" will be awarded to students who take all exams and earn a 60% or higher on both of the exams. Auditors are required to meet with the instructor during the first two weeks of the course.

Time

This class requires a lot of work outside of the class meeting times. You are expected to read in preparation of lectures and labs, and complete your assignments in a timely manner. We expected you to spend on average 10 to 15 hours per week outside of class preparing and working on assignments. However some weeks will require more time than others, and you should manage your time appropriately.

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, and violators will be reported to the Office of Student Conduct. You should be aware of the University policy on academic integrity found in the Code of Student Conduct.

Working together on some aspects of the class is required, and those deliverables that require collaborative work will be clearly defined. Pairings and teams will be assigned (with your input) for all collaborative assignments. You may collaborate with your partner and/or team for the collaborative portions of an assignment. However, collaborating with other pairs and/or teams is NOT allowed and is absolutely cheating.

Teams or individual students who cheat on a portion of an assignment will receive a -100 for the assignment! Cheating is worse than not turning in the assignment, and may lead to suspension from the university!

The Computer Science department has software that detects cheating violations for programming projects. Do not use other student's code, do not share your code, do not pay someone to write code for you, and do not copy code from someone who took the class X semesters ago. We also can identify plagiarism in written assignments. Do not copy other's work or written materials from the Internet.

All help MUST be cited in the comments of your program or in a readme file associated with your program. Here is a white-list of resources you may use to help you in your work:
- your instructor,
- your TAs,
- your partner/team for collaborative parts of assignments,
- your course textbook,
- the CoffeeMaker examples,
- the RealEstate example,
- code from the course website,
- code from links posted on the course website,
- the Java API, and
- APIs for the other technologies used for the course.

YOU MAY NOT RECEIVE HELP FROM ANYONE OR ANYHING ELSE.

Here are some ideas of what we expect citations to look like:
- We discussed *topic X* with *TA Y* on *date*. The discussion lead to fixing a bug in *area of code* and clarified the testing of *use case Z*.
- We used code from CoffeeMaker's JSP example as a basis for our solution in *filename.jsp*. We modified the code to meet *use case X.*
- We modified code provided by *URL* that was posted from Topic *X* on the course website. We modified the code to do *Y* to meet *use case Z.*

Course Evaluations

End-of-Semester class evaluations will be available for students to complete between April 14 at 12:00 noon and May 4 at 8:00am. Students will receive an email message directing them to a website where they can login using their Unity ID and complete evaluations on this (and their other) course(s). All evaluations are confidential; instructors will not know how any one student responded to any questions, and students will not know the ratings for any instructors.

More information about Course Evaluations may be found at
http://www2.acs.ncsu.edu/UPA/classeval/index.htm.

Students with Disabilities

Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with Disability Services for Students at 1900 Student Health Center, Campus Box 7509, 515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation (REG02.20.1). Also, visit the Disability Services Office website at: http://www.ncsu.edu/dso/.

Students registered with Disability Services should present their letters of accommodations to the instructor prior to the end of the first week of classes.