CSCI 334: System Design and Implementation
System Design and Implementation – Spring 2015

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or by appointment

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Course Description

The course is the capstone experience for the computer science major. It is an opportunity for students to demonstrate mastery of skills learned throughout the curriculum while participating on a team project for a real-world client.

Course Goals

Upon completion of this course, a successful student will be able to:

- Design large software projects using patterns and other standard techniques.

- Communicate both orally and in writing with clients, colleagues, and supervisors.

- Document specifications and code using standard tools.

- Work in a team to design and develop software projects.

- Identify appropriate resources to learn new technologies.

Required Texts

In addition to the following required text, supplementary readings will be given during the semester.

- *The Pragmatic Programmer* by Andrew Hunt and David Thomas

You should expect to spend at least an hour before each class session working through the readings. This means reading the text for detail and working to learn vocabulary – not just skimming through the material before class.

Graded Material

- **Journal Assignments** – Informal journals will be used to explore ideas from the texts - roughly one for each of the chapter that we cover. See the handout on journals for more information.

- **Software Engineering Philosophy Readings** – Beyond the required text book listed above, you will read portions of other books that discuss a wide variety of approaches to software development. For each book you will write a two-to-three page response to a prompt for the book.

- **Technology Tutorial** – You will select a technology and provide a hands-on tutorial for the class. This technology must be new to the majority of the students in the class.

- **Project Performance** – Our client this semester is Merck, a pharmaceutical company with a strong IT division. The project will require us to identify and document the requirements, propose a solution and present on it, and then plan and implement a solution. You will not be involved in every aspect of the project, but you are expected to contribute in a timely manner when given assignments. As evidence of your involvement, you will maintain a work log throughout the semester. Your grade will be based on your level of contribution to the project, as assessed by me and the other students in the class.

- **Participation** – Half of your participation grade is determined solely on your attendance in class (irregardless of whether an absence is excused). The other half is based on active participation. I believe that we learn better when we are *actively* engaged in the material. Therefore, I expect you to participate in the activities in class and contribute on a regular basis.

- **Final Analysis Paper** – Instead of a final exam, you will write a final paper due to me by 4:30 P.M. on Wednesday, May 6. In this paper, you will critique the project and discuss how the content of the course was utilized in the project. Further details will be distributed near the end of the semester.

Grade Determination

- Journal and Homework Assignments – 10%

- Project Performance – 30%

- Software Engineering Philosophy Readings – 20%

- Technology Tutorial – 15%

- Participation – 10%

- Final Analysis Paper – 15%

All grades will be computed on the standard scale using plusses and minuses

Course Policies

- **Late Policy** – I understand that life sometimes gets in the way of getting work done. Consequently, late assignments will be accepted without penalty in the class after the assignment was due. However, this policy should not be used as a crutch, and if you frequently use it I will deduct from your grade. After the next class session, late work will not be accepted unless there are exceptional circumstances.

- **Extensions** – In a similar vein, I am generous with extensions on work if you approach me *before* the day the assignment is due.

- **Absences** – Your attendance is expected at each class meeting, but I understand that students occasionally get sick, have obligations outside Moravian, and even over sleep. If you do miss class, please send me an email explaining your absence – preferably before the class session. Regardless of your reason for missing class, you are responsible for the contents of reading assignments, handouts, class activities, and class email.

- **Academic Honesty** – Except on tests, you are *encouraged* to discuss the material and work with other students in the course. Specifically, on homework and programming assignments you may discuss any portion of the assignment with your fellow students. This policy does not allow you to copy another student's work verbatim – you must produce your own code or write-up of the material. Work together to learn the concepts, but keep in mind that you are ultimately responsible for the material on the tests.

- **Disabilities** – Students who wish to request accommodations in this class for a disability should contact the Assistant Director of Academic and Disability Support in the Academic Support Center, Monocacy Hall, lower level, or by calling 610-861-1401. Accommodations cannot be provided until authorization is received from the Academic Support Center.

The details of this syllabus are subject to change based on our progress through the material and the intensity of our collaboration with Merck.