

# SYLLABUS

## SYST 510 - Systems Definition and Cost Modeling

Spring 2007

**Professor:** Dr. Peggy Brouse

**Assignment Submission:** WebCT usage is required in the class; instructions are below.

**Work Phone:** (703) 993-1502 (with voice mail)

**FAX:** (703) 993-1706

**E-mail:** pbrouse@gmu.edu

**Office:** GMU: Science and Technology II - Room 317

**Office Hours:** By appointment

**Course Description:** During this course, the Systems Definition phase of the Systems Development Life Cycle will be explored. This phase of the systems engineering effort includes such activities as requirement elicitation, problem analysis, system specification, and system cost estimation. Lectures concerning these topics will be given by the instructor and will be supported by the listed texts. Students will be tested to ensure understanding of material contained within the lectures and the texts. Additionally, students will gain practical knowledge concerning this subject by participating in a group project to create a System Requirement Specification (SRS) and cost model of the system to be developed.

**Course Hours:** Wednesday 7:20 p.m. to 10:00 p.m. Robinson A245

**Text:** System Requirements Analysis, Jeffrey O. Grady; Academic Press (2006); ISBN: 978-0-12-088514-5

**Grades:** 50% - group project:  
5% SOW;  
20% Final Presentation  
25% Final Deliverable  
50% - individual grades:  
15% - exam 1  
15% - exam 2  
20% - cost model exam

**Disabilities Statement:** If you are a student with a disability and you need academic accommodations, please see me and contact the Disability Resource Center (DRC) at 993-2474. All academic accommodations must be arranged through the DRC.

## Group Project

The Group Project is the focal point of student effort within this course. Although groups may be able to meet during class time occasionally, the majority of effort toward the group projects will be expended outside of class. There will be groups of several people self-formed during the first meeting of the class. Each group will have two roles: User Group and Requirement Group.

**Beginning User Group Activities:** As a user, the group will formulate a Statement of Work (SOW) that they will pass to their “mate group”. Mate groups will be assigned after the SOW is completed.

**Beginning Requirement Group Activities:** Each group will exchange their SOW with their assigned mate group. The SOW that they receive from their mate group will form the basis for their role as a Requirement Group. In this role, they will

- study the SOW they have received,
- elicit requirements from the mate group to develop a Systems Requirement Specification (SRS) including problem analysis and system definition models,
- run individual cost models and discuss differences in final presentation
- and document their final SRS.

Each member of the group will be required to run a different cost model (e.g. COCOMO2, CostXpert, etc.). This individual run of the model will constitute the third exam for the course. The final analysis of the cost models will be a comparison of the individual models with a discussion of differences in the final presentation. Their mate group will be doing these same functions with the SOW they receive.

**Ending User Group Activities:** After completion of the SRS and cost models, the mate groups will again exchange documents: the SRS. In the User Group role, each group will evaluate the SRS of their mate group. A recommended evaluation strategy will be given to you.

**Ending Requirement Group Activities:** At the end of the semester, each group will present their work. Groups will be required to hand in their final package to the professor including:

- original annotated SOW they wrote,
- preliminary annotated SRS,
- final SRS,
- group Cost Model comparison, and
- evaluation of Mate Group SRS

In addition, each person in class will be required to do an evaluation of the other members of their group. The format of this is contained in a separate handout. This evaluation will be private. It should be included in a sealed envelope with student signature across flap **as part of the final package**.

## **Exams**

Three exams: The first will be in-class and will cover parts 1 through 4 of Grady's book. The second will be in-class and will cover parts 5 through 8 of Grady's book. The third will be a take home exam consisting of individual running of cost models.

## How To Access WebCT?

- Go to <http://webct41.gmu.edu>
- Enter WebCT ID and password:  
Students need a WebCT ID and password to login. Their WebCT ID is their Mason mail user name (e.g. the WebCT ID for jdoe@gmu.edu would be jdoe). Logging into WebCT will require the user to enter the same password required to access their Mason email account. Passwords for WebCT can be reset or obtained by clicking on the obtain or reset username/password link.
- If you do not know your Mason mail user name, go to <http://mail.gmu.edu> and click on “Activating My Account” icon, follow the steps.
- All assignments have due dates and submissions after the due date/time will not be possible, since WebCT will automatically block “submit my homework” option.
- From time to time, WebCT works too slowly. Especially from a dial-up internet connection, WebCT access may not be so efficient all the time; students are encouraged to submit their work earlier than the deadline.
- If you experience any problem while accessing/using WebCT, please send an e-mail to Dr. Brouse, [pbrouse@gmu.edu](mailto:pbrouse@gmu.edu)

## CLASS SCHEDULE

Week 1>	24 January	<ul style="list-style-type: none"> <li>◆ Handout syllabus, Honor Code</li> <li>◆ Introduction</li> <li>◆ Review WebCT</li> </ul>
Week 2>	31 January	<ul style="list-style-type: none"> <li>◆ Lecture: System Requirements Analysis [Grady Parts 1, 2]</li> </ul>
Week 3>	7 February	<ul style="list-style-type: none"> <li>◆ Lecture: System Requirements Analysis [Grady Part 3]</li> </ul>
Week 4>	14 February	<ul style="list-style-type: none"> <li>◆ <b>Groups: 10 minute presentation of SOW</b></li> <li>◆ <b>Groups: SOW (via WebCT) due to professor</b></li> <li>◆ Lecture: System Requirements Analysis [Grady Part 3 continued, Part 4]</li> </ul>
Week 5>	21 February	<ul style="list-style-type: none"> <li>◆ <b>In-class Exam Number 1</b></li> <li>◆ SOW returned; Mate Group assignments given</li> <li>◆ <b>Bring copy of SOW to class to give to your Mate Group</b></li> </ul>
Week 6>	28 February	<ul style="list-style-type: none"> <li>◆ Return Exam 1</li> <li>◆ Lecture: System Requirements Analysis [Grady Part 5]</li> </ul>
Week 7>	7 March	<ul style="list-style-type: none"> <li>◆ <b>Spring Break</b></li> </ul>
Week 8>	14 March	<ul style="list-style-type: none"> <li>◆ <b>Groups: Preliminary SRS due to professor (via WebCT)</b></li> <li>◆ Lecture: System Requirements Analysis [Grady Part 6]</li> </ul>
Week 9>	21 March	<ul style="list-style-type: none"> <li>◆ Return preliminary SRS</li> <li>◆ Lecture: System Requirements Analysis [Grady Part 7, 8]</li> <li>◆ Lecture: Cost models</li> </ul>
Week 10>	28 March	<ul style="list-style-type: none"> <li>◆ Lecture: Cost models (continued)</li> <li>◆ Guest Lecture: Mayuresh Patankar demonstration of cost models to be used in the class assignment</li> <li>◆ Final Test Sheet for Take-home Exam Number 3 (covers Cost Modeling) handed to students</li> </ul>
Week 11>	4 April	<ul style="list-style-type: none"> <li>◆ <b>In class Exam Number 2</b></li> </ul>
Week 12>	11 April	<ul style="list-style-type: none"> <li>◆ Return exam 2</li> <li>◆ Lecture: Configuration Management</li> <li>◆ <b>Groups: Exchange SRS with Mate Group</b></li> </ul>
Week 13>	18 April	<ul style="list-style-type: none"> <li>◆ <b>Take-home Exam 3: Individual Cost Models</b></li> </ul>

Week 14>	25 April	<ul style="list-style-type: none"> <li>◆ <b>Take-home Exam 3: Individual Cost Models due (hard copy only)</b></li> <li>◆ <b>Student group presentations of final SRS and individual cost model results</b></li> </ul>
Week 15>	2 May	<ul style="list-style-type: none"> <li>◆ <b>Student group presentations of final SRS and individual cost model results</b></li> <li>◆ <b>Group Deliverables Due:</b> to include SOW and Evaluation for each project from Users Group as well as SRS, Cost Model Comparison, and Final SRS for each project from Requirements Group</li> </ul>