Fall 2011 Syllabus for
URI CSC 305 & 505
Software Engineering

Serial 20110912-RevA

Date 12 Sep 2011

Instructor: Lewis Collier
Office: 252 Tyler Hall
Office Hours: Monday 3pm-5pm and by appointment.

Meeting Time and Place: Class for CSC-305 is Monday 5:00 p.m. – 6:15 p.m. and Weds 4:00pm-5:15pm in Tyler 049. CSC-305 lab time is Weds 5:15 p.m. to 7:00 p.m. in Tyler 049. Some of the lab time will be used as class/lecture time for the first couple of weeks. After that, groups are expected to use this time to meet if no other time is available.

Synopsis: This course provides an introduction to the theory and application of software engineering. The unified process (UP) will be studied via commonly used standards such as ISO-12207, MIL-STD-498, MIL-STD-961, and DOD-STD-2167A. The core of this course will provide cross-functional team practice using the unified process with structured analysis performed using the Yourdon Structured Method (YSM) and the Unified Modeling Language (UML).

Goals: Successful completion of this course will result in the student possessing an understanding of and the necessary practical experience to carry out the analysis and engineering of large and complex software systems. By studying various development models and the artifacts associated with the development model activities, students will gain an appreciation for the artifacts to be produced during the system analysis process. This knowledge of the system analysis process will also be useful when applied to the selection of computer aided design tools and in the planning and management of systems.

A major intent of this course is to foster teamwork in the study of software engineering, as is required "in the real world". All students will participate in end-of-semester presentations of their projects design.

Resources

- "Software Engineering: A Practitioner's Approach", Sixth Edition, Roger S. Pressman, ISBN 0-07-285318-2, McGraw-Hill (*Newer editions are OK.*)
- "UML 2.0 in a Nutshell" [Paperback Jun 1, 2005] by Dan Pilone and Neil Pitman,
  ISBN 0-596-00795-7, O'Reilly
- "Just Enough Structured Analysis", Ed Yourdon, available on line for free at http://www.yourdon.com/jesa/jesa.php

[The following are optional references, but they are highly recommended since they can be found cheaply on line.]

- "The Unified Process Explained" [Paperback] by Scott Kendall
- "UML Explained" [Paperback] by Scott Kendall
- "Mythical Man Month" [Paperback] by Frederick P. Brooks
- "The Soul of A New Machine" [Paperback] by Tracy Kidder
- "House" [Paperback] by Tracy Kidder

The following software tools will be used:

- Open Office 3.3
- Open Project 1.4

Deliverables:

ALL deliverables shall be emailed to me as documents named in the form LastName,FirstName_AssignmentName

Use Cases – list of actors and system functions
Project Plan 1 – First draft of project plan with all Unified Process phases and inception details
Paper 1 – Operational Concept Description
Paper 2 – Performance Requirements Specification and System Usage Specification
Project Plan 2 – Second draft of project plan with all Unified Process phases and inception & elaboration details
Prototype User's Guide – A short write-up describing how to install and use the prototype software.
Paper 3 – System Segmentation Specification
Project Plan 3 – Third draft of project plan with all Unified Process phases and inception, elaboration, & construction details
Paper 4 – System Test and Integration Plan
Project Plan 4 – Forth draft of project plan with all Unified Process phases and inception, elaboration, construction, & transition details

Midterm – Covers presented material
Final – Covers all material

Late Submission: The schedule below is intended to allow for students to complete the assignments with plenty of time (and with advance warning of due dates) so that the follow-on assignments may build on prior efforts. If assignments are not handed in on time then the next assignments cannot build on the prior efforts and the instructor does not have sufficient time to review and comment on the assignments. Therefore, a late-penalty shall be enforced for ALL assignments unless a valid reason exists and is presented to the instructor.

The late-penalty shall be 1/3 a letter grade (0.33 out of a possible top score of 4.0) for ***EACH DAY*** the assignment is late. In addition, assignments that are submitted late may not be re-graded as noted below.

Schedule: See MeetingSchedule_CSC305,505_Fall2011.pdf

Grading:

Deliverable	Weight	Notes
Paper 1	10.00%	**INDEPENDENT, Can discuss with others**
Paper 2	10.00%	**Group Effort**
Paper 3	10.00%	**Group Effort**
Paper 4	10.00%	**Group Effort**
Mid-term	15.00%	**INDEPENDENT**
Final	15.00%	**INDEPENDENT**
Prototype	10.00%	**Group Effort**
Presentation	10.00%	**Group Effort**
Participation	10.00%	**Group Effort**

More on Grading:

Since there is no absolute right or wrong answer for the design papers (1-4), they will be graded mainly on effort, adherence to the specification content descriptions, completeness, and clarity. Since this subject matter is best learned from exposure, cooperation between students and teams is encouraged. In addition, each student will read and comment on randomly chosen papers from each assignment. These comments can be factored into the paper grade as appropriate and the attentiveness to review detail will be factored into the reviewer's participation grade.

The exams are meant to be learning experiences. Therefore, the midterm and final exams will consist of approximately four (4) take home essay or design questions. ***Students are to work on these independently.*** These questions will be graded with equal weighting.

All papers may be graded twice, except as noted above for late submissions. The initial draft will be reviewed and comments provided. A second draft will also be reviewed for changes.

Presentation:

Since the goal of this class is to immerse students in the design process, presentation of design issues is expected. Each group will present their portion of the overall design in a final presentation on the last day of class.

Participation:

As noted above, one of the goals of this class is to immerse students in a cross-functional team environment. Therefore, active participation in team meetings is required.

Participation also includes class attendance, the project planning exercises, and review of papers from other members of the design team (the class).