

CMSC 735
Spring '06

Tentative Class Schedule (Subject to change)

Date	Topic
Jan 26	Motivation, Empirical Software Engineering
Jan 31	Models and Measures Background
Feb 2	Models and Measures (Resources)
Feb 7	Models and Measures (Resources)
Feb 9	Models and Measures (Changes and Defects)
Feb 14	Models and Measures (Product)
Feb 16	Models and Measures (Product)
Feb 21	Models and Measures (Product)
Feb 23	Models and Measures (Process)
Feb 28	Measurement Frameworks (Goal/Question/Metric Approach)
Mar 2	Measurement Frameworks (Goal/Question/Metric Approach)
Mar 7	Measurement Frameworks (Goal/Question/Metric Approach)
Mar 9	Quality Improvement Paradigms, Experience Factory
Mar 14	Organizational Framework (QIP, EF, PDCA, CMM, ...)
Mar 16	Building Knowledge (about Defects)
Spring Break	
Mar 28	Experimentation in Software Engineering
Mar 30	Experimental Design and Methods and Threats to Validity
Apr 4	Lecture on Non-functional Requirements Elicitation (Class Experiment)
Apr 6	Experimental Goals and Design for Class Experiment
Apr 11	Example Experimental Designs (Requirements Reading)
Apr 13	Results on Assignment on Compiling Empirical Evidence (DC)
Apr 18	Class Experiment on Requirements Elicitation (SA + FS)
Apr 20	Class Experiment on Requirements Elicitation (SA + FS)
Apr 25	Example Studies/Building domain knowledge (HPCS)
Apr 27	Example Studies /
May 2	Example Studies /Evaluating Technology
May 4	Analyzing the Class Experiment
May 9	Building an Experimental Experience Base
May 11	Analyzing the Class Experiment

Instructor: Professor Victor R. Basili

Meeting Times: TTh 11:00AM - 12:15PM

Office: A.V. Williams 4111

Email: basili@cs.umd.edu

Office Hours: TTh 10:00 - 11:00PM, and by appointment

Homework: There will be 6 graded homework assignments applying the concepts learned and searching, reading, analyzing the literature

Experiments: You will participate as subjects in an experiment and analyze the results to help you better understand what is involved in data collection, measurement, and empirical study.

Exams: There will be a final exam. The assignments will cover most of the material that will be covered on the final exam.

Grading: The assignments will count 50% of the grade and the final exam will count 50%.

Texts: Experimental and Quasi-Experimental Designs for Research by Donald Campbell and Julian Stanley (1966)

The Goal/Question/Metric Method by Rini van Solingen and Egon Berghout (1999)

Experimentation in Software Engineering: An Introduction, Wohlin, C., Runeson, P., Höst, M., Ohlsson, M.C., Regnell, B., Wesslén, Springer Series: International Series in Software Engineering, Vol. 6 , 2000

Copies of slides and notes will be made available on a web site.
www.cs.umd.edu/class/spring2006/cmsc735/index.html

Class Rules

Excused Absences: Students claiming a excused absence must apply in writing and furnish documentary support (such as from a health care professional who treated the student) for any assertion that the absence qualifies as an excused absence. The support should explicitly indicate the dates or times the student was incapacitated due to illness. Self-documentation of illness is not itself sufficient support to excuse the absence. An instructor is not under obligation to offer a substitute assignment or to give a student a make-up assessment unless the failure to perform was due to an excused absence. An excused absence for an individual typically does not translate into an extension for team deliverables on a project.

Any student eligible for and requesting reasonable academic accommodations due to a disability is requested to provide, to the instructor in office hours, a letter of accommodation from the Office of Disability Support Services (DSS) within the first two weeks of the semester.

Academic Integrity: It is assumed that you will work alone, unless otherwise specified, e.g., in the class experiment.

"The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic

Integrity or the Student Honor Council, please visit
<http://www.studenthonorcouncil.umd.edu/whatis.html>."

Important Dates: Classes start Wednesday, January 25, and go through Thursday, May 11. Spring break is the week of March 20. The following dates are recognized by the campus for religious observance. During these dates we will not administer exams or require submission of graded material, if anyone registers an objection by the first 2 weeks: Good Friday, April 14, 2006 and Passover, Sunset, Wednesday, Apr. 12 through Sunset, Friday, Apr. 14, 2006

Supplementary Outside Reading for CMSC 735

- Basili, A Quantitative Approach to Software Management and Engineering, Draft Notes, 1994. (will be made available on the web)
- Basili, Models and Metrics for Software Management and Engineering, IEEE Computer Society Press, 1980.
- Boehm, Software Engineering Economics, Prentice Hall, 1981
- Boehm, et. al., COCOMO II, Prentice Hall, 2001.
- Conte, Dunsmore, & Shen, Software Engineering Metrics and Models, Benjamin/Cummings, 1986.
- DeMarco, Why Does Software Cost So Much, and other puzzles about the Software Age, Dorset House Publishing, 1995.
- Fenton & Pfleeger, Software Metrics: A Rigorous and Practical Approach, PWS Publishing Company, 1997
- Grady & Caswell, Software Metrics: Establishing a Company-Wide Program, Prentice-Hall, 1987.
- Grady, Practical Software Measurement for Project Management and Process Improvement, Prentice Hall, 1992
- Hetzel, Making Software Measurement Work: Building an Effective Measurement Program, QED Publishing Group, 1993.
- Humphrey, Introduction to the Personal Software Process, SEI Series in Software Engineering, 1997.
- Juristo, Natalia and Moreno, Ana, Lecture Notes on Empirical Software Engineering, World Scientific, Singapore, 2003.
- Paulk, et. al. The Capability Maturity Model, Guidelines for Improving the Software Process, SEI Series in Software Engineering, 1995.
- Putnam & Myers, Measures for Excellence, Yourdan Press, 1992.
- van Solingen & Berghout, The Goal/Question/Metric Method, McGraw Hill, 1999.
- Wohlin, C., Runeson, P., Höst, M., Ohlsson, M.C., Regnell, B., Wesslén, Experimentation in Software Engineering: An Introduction, Series: International Series in Software Engineering, Vol. 6 , 2000