CS 305-101: Software Engineering I (CRN: 2103)
Marshall University
Fall 2007

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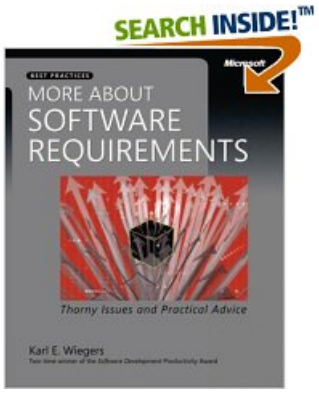
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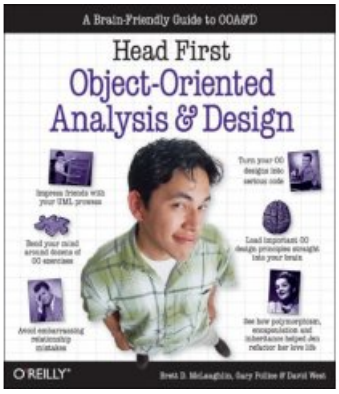
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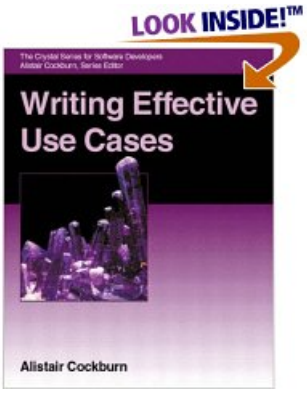
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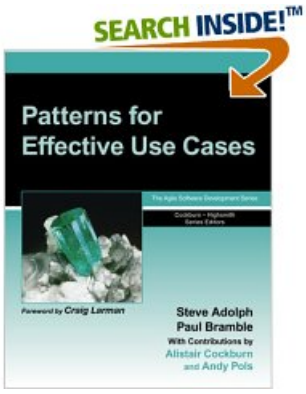
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With Contributions by
Alistair Cockburn
and Andy Pols

1 Course description

Software engineering is an *engineering discipline* which encompasses all aspects of software production from requirements elicitation, system specification, design, implementation, testing, deployment, and maintenance. This is the first of a two-course sequence in Software Engineering. In this course, you will learn and apply theory, methods, tools, and best practices for the following aspects of software engineering: requirements elicitation, analysis, and documentation; software process models; object-oriented analysis and design; and software project management.

2 Course schedule

This course meets on MWF 11.00 AM - 11.50 AM in GH 211.

3 Instructor information

- Dr. V.N. Gudivada, Gullickson Hall Room 205A, Phone: 304-696-5452, Email: gudivada@marshall.edu. Please use this email only if you cannot access WebCT Vista email.
- Office hours: 12.00 Noon - 2.00 PM on MWF and 4.00 PM - 5.00 PM on MW. Other times by appointment.

4 Course topics at a glance

a. Overview of software engineering as an engineering discipline.

b. Requirements engineering — requirements elicitation, analysis, and specification.

c. Software process models.

d. Software design — system models, architectural design, application architecture, object-oriented design, and user interface design.

e. Software project management — team building and nurturing, software cost estimation, quality management, process management, and configuration management.

5 Student learning outcomes

a. The student will define general terminology of software engineering principles and practices.

b. The student will discriminate various software engineering process models and identify an appropriate software process model for a given context.

c. The student demonstrates working knowledge of Eclipse software development environment.

d. The student constructs system models in UML notation.

e. The student has mastered the methodologies and tools for requirements engineering and demonstrates the application of this knowledge in a practical domain.

f. The student has mastered the methodologies and tools for object-oriented analysis and design and demonstrates the application of this knowledge in a practical domain.

g. The student has mastered the methodologies and tools for software project management and demonstrates the application of this knowledge to a software project.

h. The student knows how to apply various attributes for measuring the quality of a software product and demonstrates the application of this knowledge to assess the quality of a software product.

6 Instructional materials

Required Textbook Brett McLaughlin, Gary Pollice, and David West. *Head First Object-Oriented Analysis and Design*. ISBN-10: 0596008678. ISBN-13: 978-0596008673. O'Reilly Media, Inc. November, 2006.

Reference Book. No need to buy Karl E. Wiegers. *Software Requirements*, 2^{nd} edition, ISBN-10: 0735618798, ISBN-13: 978-0735618794. Microsoft Press, February, 2003.

Reference Book. No need to buy Karl E. Wiegers. *More About Software Requirements: Thorny Issues and Practical Advice* , ISBN-10: 0735622671, ISBN-13: 978-0735622678. Microsoft Press, December, 2005.

Reference Book. No need to buy Alistair Cockburn. *Writing Effective Use Cases*, ISBN-10: 0201702258, ISBN-13: 978-0201702255, Addison-Wesley Professional, January, 2000.

Reference Book. No need to buy Paul Bramble, Alistair Cockburn, Andy Pols, and Steve Adolph. *Patterns for Effective Use Cases*, ISBN-10: 0201721848, ISBN-13: 978-0201721843, Addison-Wesley Professional, August, 2002.

Additional Resources Course notes and other handouts will be available on WebCT Vista. URLs for additional resources will also be listed on the Vista.

7 Course assessment and grading criteria

The course assessment is based on the following components:

- Four written assignments: 40%
- Midterm exam: 30%
- Final exam: 30%

8 Assignment of letter grade

Score	*Letter Grade*	*Remarks*
$>= 90$	A	Achievement of distinction
$>= 80$ & < 90	B	Competent and professional work
$>= 70$ & < 80	C	Below average performance
$>= 60$ & < 70	D	Patently substandard work
< 60	F	Unsatisfactory work

Note that *A* grades are awarded only to those students who have demonstrated distinctive performance in the course.

9 WebCT Vista

It is important to visit WebCT Vista for up-to-date information about the course. It hosts all the course materials including assignments, handouts, lecture notes, and reading materials. Also, you will use the Vista for submitting your team project.