

Using Metrics and Models to Support Quantitative Decision-Making

OMSE 521 Summer 2007 Syllabus

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Office Hours: TBD

Course Materials: <http://www.cs.pdx.edu/~grimjack/>

About This Course

This course provides the knowledge and skills needed to apply quantitative tools based on metrics and models of the software product and development process to make decisions under uncertainty. Topics covered will include measurement concepts, decision-making under uncertainty, and model and metric development for the software development enterprise

Prerequisites

For this class, the student must either show evidence of having completed foundation computing and software topics at the undergrad level or have completed the OMSE 510 Computing Foundations and OMSE 510 Software Foundations courses.

Topics Covered

This course will cover how metrics can be combined with formalized decision models to support decision-making by software project leaders and managers. It provides the knowledge and skills needed to apply quantitative tools to make decisions in situations where a great deal of uncertainty exists. You will learn to recognize decision-making opportunities in the software development process, and be equipped to address them in a scientific, organized manner using all appropriate information sources.

Grading

For each of the two sections of the course there will be two assignments and a midterm. The break down for the final grade is as follows:

Type of assignment	Percentage
Participation in Online Discussions	13%
4 Homework Assignments	42%
Midterm Exam	20%
Final Exam	25%
Total	100%

The homework assignments will consist of mainly questions from the Software Measurement and Estimation text. The midterm and final will be take home exams.

Text Books

Cliffs Quick Review – Statistics
Cliffs Notes
ISBN 0-8220-5349-7

Software Measurement and Estimation: A Practical Approach
Laird & Brennan
ISBN 0-4716-7622-5

General Policies

Class Participation:

Participation in online class discussions is required.

Cheating:

Cheating of any kind will not be tolerated. While it is encouraged for students to study together, the student must ensure that the work they turn in is entirely their own.

Late assignments:

Late assignments will not be accepted without getting the instructor's approval before the due date of the assignment.

Course Outline (based on 10 week term)

This outline may be subject to change.

Week	Topics Covered	Assignments
Week 1	Models, What to Measure	
Week 2	The Basics of Measurement Theory, Variation, Error	<ul style="list-style-type: none">• Assignment #1 handed out
Week 3	Measuring Size – Length and Functionality (LOC and FPs)	
Week 4	Complexity	<ul style="list-style-type: none">• Assignment #1 due• Assignment #2 handed out
Week 5	Measuring OO Projects	
Week 6	Estimation	<ul style="list-style-type: none">• Assignment #2 due• Midterm Exam handed out
Week 7	Defects	<ul style="list-style-type: none">• Midterm Exam Due• Assignment #3 handed out
Week 8	Reliability	
Week 9	Availability & Other Subjects	<ul style="list-style-type: none">• Assignment #3 due• Assignment #4 handed out
Week 10	Review	<ul style="list-style-type: none">• Assignment #4 due• Final Exam handed out
Week 11	No Topic	<ul style="list-style-type: none">• Final Exam due