

# Software Engineering Program

## EE 382C - Intro to Software Engineering

### Syllabi

#### **Instructor:**

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#### **Course Title and Description:**

*EE 382C – Introduction to Software Engineering*

This course is an introduction to software engineering with an emphasis on the methods, techniques and technology to build and evolve software systems. The emphasis is on software engineering principles.

#### **Textbook:**

Brooks, The Mythical Man-Month, Anniversary Edition  
By Midterm Exam, read Chapters 1-11  
By Final Exam, read Chapters 12-19

#### **Course Outline:**

##### Weekend One

Introduction - Systems and Complexity - Overview  
read: Brooks, No Silver Bullet [in Brooks]

Elements of engineered software systems  
read: Perry, Dimensions of Software Evolution  
Lehman & Belady, Chapter 19, sections 1-2

Requirements - Elicitation and prototyping  
read: Potts et al, Inquiry based requirements analysis  
Luqi & Royce, Status report: computer-aided prototyping

Requirements - Problem Domain, Obstacles  
read: Jackson, The World and the Machine

Architecture - overview  
read: Perry & Wolf, Foundations for the study of Software Architecture

Architecture - Example of Linux, Arch problems  
read: Bowman et al, Linux as a case study ...  
Garlan et al, Architectural mismatch ...

##### Weekend Two

Design - Design methods  
read: Parnas & Clements, A Rational Design Process ...  
Bergland, A Guided Tour of Program Design Methodologies

Design - Design Principles  
read: Parnas, Designing SW for ease of extension and contraction

Design - Modularity; Design Experience  
read: Lampson, Hints for System Design

Construction - Building and Composition

read: Wolf/Rosenblum, A Study in SW Process Data Capture/Analysis

Deployment and Maintenance

read: Hall et al, The Software Dock

Maintenance and Evolution

read: Perry/Stieg, Software Faults in Evolving a Large ...

### Weekend Three

Evolution

read: Lehman/Belady, Chapter 19, sections 3-end

Artifacts and their Management - Configuration Mgmt

Mid-Term Exam (23 Mar 01)

Measurement & Evaluation - Reviews

read: Porter et al, An experiment to assess the costs-benefits  
of code inspections in large scale developments

Measurement & Evaluation - Testing and Analysis

read: Kaiser et al, Infuse: fusing integration test mgmt ...

Measurement & Evaluation - Empirical studies

read: \*Perry/Stieg, Software Faults

### Weekend Four

Measurement & Evaluation - Empirical studies

read: Bradac et al, Prototyping a Process Monitoring Experiment  
Perry et al, People Organizations and Process Improvement

Team Work

read: Perry/Kaiser, Models of SW Development Environments  
Grinter et al, The Geography of Coordination

Process - Introduction

read: Osterweil, SW Processes are SW Too, Revisited;

Process - Process Capture

read: \*Wolf/Rosenblum, A Study in SW Process Data Capture/Analysis

Process - Architecture, Design

read: Dandekar/Perry, Barriers to Effective Process Architecture

Process - Measurement & Evaluation

read: Carr et al, Experiments in Process Interface Visualizations ...

### Weekend Five

Process - Measurement & Evaluation

read: \*Perry etal, People Organizations and Process Improvement

Process - Improvement

read: Dandekar etal, Studies in Process Simplification

Project Management

read: relevant PM chapters in Brooks MMM

Final Exam