

COM1012 (CS183) Systems Analysis & Design

Spring Semester 2009

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Course Textbook: Alan Dennis, Barbara Haley Wixom and David Tegarden (2005, **SECOND EDITION**), *Systems Analysis and Design: An Object-Oriented Approach with UML Version 2.0*, John Wiley and Sons, USA. ISBN 0471659207 or 978-0471659204. This is the **course textbook** for this Level 1 module, and you are recommended to purchase this book, e.g. from the university bookshop.

SESSION

DATE

1. Introduction

Friday 23rd Jan

Lecture

11.00-12.00 Room LTE

- introduction to module and course structure and overview
- the Systems Development Life Cycle (SDLC)
- Systems Development Methodologies
- Structured Design
- Rapid Application Development (RAD) and prototyping

Reading: Dennis, Wixom & Tegarden, chapter 1

2. Introduction to Object Oriented Analysis and Design

Friday 30th Jan

Lecture

11.00-12.00 Room LTE

- OOD fundamentals, concepts, examples
- Introduction to Unified Modelling Language (UML)

Reading: Dennis, Wixom and Tegarden, Chapter 2

3. Analysis:

Requirements Determination / Information Gathering

Friday 6th Feb

Lecture

11.00-12.00 Room LTE

- interviews
- Joint Application Design (JAD)
- questionnaires
- document analysis
- observation

Reading: Dennis, Wixom & Tegarden, Chapter 5

4. Analysis:

Functional Modelling: Use Case Modelling

Friday 13th Feb

Lecture

11.00-12.00

Room LTE

- use cases /use case descriptions
- use case diagrams

Reading: Dennis, Wixom & Tegarden, chapter 6

Lab Practical

14.00-16.00

APlab2

- creating use case diagrams

5. Analysis:

Structural Modelling

Friday 20th Feb

Lecture

11.00-12.00

Room LTE

- class diagrams

Reading: Dennis, Wixom and Tegarden, Chapter 7

Lab Practical

14.00-16.00

APlab2

- creating a class diagram

6. Analysis:

Behavioural Modelling

Friday 27th Feb

Lecture

11.00-12.00

Room LTE

- Interaction Diagrams
 - sequence diagrams
 - behavioural state machines (statechart diagrams)

Reading: Dennis, Wixom and Tegarden, Chapter 8

Lab Practical

14.00-16.00

APlab2

- creating sequence diagrams and behavioural state machine diagrams

7. Design: Main issues, Data Management Layer **Friday 6th March**
Lecture 11.00-12.00 **Room LTE**

- design strategies
- object persistence (data storage) formats

Reading: Dennis, Wixom and Tegarden, Chapter 9 and Chapter 11

Lab Practical 14.00-16.00 **APlab2**
- creating sequence diagrams and behavioural state machine diagrams

8. Design: Systems Architecture Design **Friday 13th March**
Lecture 11.00-12.00 **Room LTE**

- computing architectures (server-based, client-based, client-server etc.)
- global issues and security

Reading: Dennis, Wixom and Tegarden, Chapter 13

9. Implementation: Construction, Installation & Operations **Friday 20th Mar**
Lecture 11.00-12.00 **Room LTE**

- managing programmers
- testing
- documentation
- support and maintenance

Reading: Dennis, Wixom and Tegarden, Chapter 14 + Chapter 15

10. Revision and Questions **Friday 27th March**
Lecture 11.00-12.00 **Room LTE**

- module summary
- past papers
- questions and answers

Reading

- Dennis, Wixom and Tegarden: All Chapters mentioned above.