United States International University

APP 4030 Information Systems Engineering Course Outline

Course Description

Concepts of a systems development methodology. Need for systems development methodology tools and techniques. Systems development life cycle. Tool and techniques for data modeling, and behavior modeling. Use of case tools. The information Engineering methodology: philosophy, tools and techniques; centrality of case tools in IE. Prototyping techniques. User participation in systems development: Rapid Application Development (RAD) (e.g. DSDM) and joint Application Development (JAD) methods. Object oriented systems analysis and design (OOAD): object modeling using UML; Use case scenarios; properties of objects and classes; relationship diagrams; Object states and behavior using state transition diagrams and event diagrams; CASE tools in OOAD. Soft Systems Methodology. Project management tools and techniques.

Prerequisite IST 4020, IST 4030

Course Text

Ian Sommerville- Software Engineering-8th Edition, Pearson Education Limited 2007

Course Outline

WEEK	CONTENT TO BE COVERED	ASSIGNMENTS AND EXAMS
1	Introduction to information and software engineering ▪ Definition of software Engineering ▪ FAQ about Software Engineering ▪ Introduction Software processes	

	▪ Introduction to CASE tools	
2	Software processes ▪ Process models Process iteration	Hand out assignment 1
3	Software processes ▪ Process activities ▪ Computer Aided Software Engineering	
4	Software requirements ▪ Functional and non functional requirements ▪ User requirements and system requirements	Hand in assignment 1
6	▪ Requirements acquisition techniques ▪ System specifications writing ▪ The software requirements document	Hand out assignment 2
5	Object oriented analysis and design ▪ Introduction to Object oriented concepts and UML ▪ Requirements analysis (Use Cases)	
6	▪ Class Diagrams ▪ Sequence and Collaboration Diagrams	
7	▪ State and Activity Diagrams ▪ MID QUARTER EXAM	Hand in assignment 2
8	Systems Architecture design ▪ Client server architectures ▪ Distributed object architectures Application architectures	Hand out assignment 3
9	Software Testing ▪ System testing ▪ Component Testing	
11	▪ Integration Testing ▪ Test case design	

12	Software project management ▪ Software project activities ▪ Software project planning	
13	Software project management ▪ Software project scheduling	
14	Managing people ▪ Selecting staff ▪ Motivating people ▪ Managing groups	Hand in assignment 3
15 and 16	END OF TERM EXAM	

Course Evaluation

Students will be evaluated using assignments, term papers, oral presentations, and laboratory exercises, mid and final exams.

Marks distribution

Laboratory exercises, assignments and project	60%
Midterm exam	20%
Final Exam	20%

GRADING

90-100	A
87-89	A-
84-86	B+
80-83	B
77-79	B-
74-76	C+
70-73	C
67-69	C-
64-66	D+
62-63	D
60-61	D-
59-0	F