ALLAMA IQBAL OPEN UNIVERSITY, ISLAMABAD
(Department of Computer Science)

WARNING

1. **PLAGIARISM OR HIRING OF GHOST WRITER(S) FOR SOLVING THE ASSIGNMENT(S) WILL DEBAR THE STUDENT FROM AWARD OF DEGREE/CERTIFICATE, IF FOUND AT ANY STAGE.**
2. **SUBMITTING ASSIGNMENTS BORROWED OR STOLEN FROM OTHER(S) AS ONE'S OWN WILL BE PENALIZED AS DEFINED IN "AIOU PLAGIARISM POLICY".**

Course: Software Engineering (3420) **Semester: Autumn, 2013**
Level: MBA (IT) **Total Marks: 100**

ASSIGNMENT No. 1
(1–4)

Note: All questions carry equal marks.

Q. 1 (a) Define Software with the help of three suitable examples. What are the attributes of good software?
(b) Why we need software, explain in detail?

Q. 2 (a) Define Software process. Also explain Software Develop Life Cycle.
(b) What process adaptations are required if the prototype will evolve into a deliverable system or product?

Q. 3 What is meant by System? Also explain different types of System.

Q. 4 You have been appointed a project manager within an information systems organization. Your job is to build an application that is quite similar to others your team has built, although this one is larger and more complex. Requirements have been thoroughly documents by the customer. What team structure would you choose and why? What software process model(s) would you choose and why?

Q. 5 Explain requirement elicitation for software in detail with the help of suitable example.

ASSIGNMENT No. 2

(Units: 5–8) **Total Marks: 100**

Note: All question are compulsory and carry equal marks.

Q. 1 (a) Elaborate functional modelling with the help of suitable examples.
(b) Write a comparison between Control Specification and process Specification.

Q. 2 Draw first level DFD (Data Flow Diagram) and ERD (Entity Relationship Diagram)diagrams for a network based course registration system for any university.

Q. 3 (a) Explain Design Process in detail with the help of suitable examples if possible.
(b) Define coupling with the help of examples. Also elaborate different types of coupling.

Q. 4 What are the mapping requirement into a software architecture? Explain in detail.

Q. 5 (a) Explain Testing Principles in detail.
(b) Write a comparison between white Box and Black Box testing.

3420 Software Engineering

Recommended Book: Software Engineering 5th edition by Roger Pressman

COURSE OUTLINES

Unit No. 1 Introduction

a) Introduction to Software, role of Software.
b) Characteristics of Software, Need for Software
c) Introduction to Software Engineering

Unit No. 2 Software Engineering Models

a) Software Process.
b) Software Process Models (Linear Sequential Model, Prototyping Model, RAD Model, Evolutionary Software Process Models).

Unit No. 3 Project Management

a) System, Types of System, Elements of System.
b) Project Management Concept
c) Software Management Team
d) Common Software Management Problems
e) Basic Management Techniques

Unit No. 4 Analysis Concepts and Principles

a) Requirements Analysis, Communication Techniques, Analysis Principles
b) Software Prototyping, Specification, Specification Review

Unit No. 5 Analysis Modeling

a) Introduction to Analysis Modeling, Data Modeling
b) Functional Modeling and Information Flow (DFD).
c) Behavioral Modeling (STD)
d) Entity Relationship Diagram (ERD)
e) Data Flow Model and Control Flow Model (Structured)
f) Control Specification and Process Specification
g) The Data Dictionary

Unit No.6 Design Concepts and Principles

a) Design Concepts, Design Process.
b) Effective Modular Design
c) Design Principles for Effective Modularity
d) Introduction to Design Model

Unit No. 7 Design Methods

a) Data Design, Architectural Design
b) Analyzing Alternative Architectural Designs
c) Mapping Requirements into a Software Architecture
d) Refining the Architectural Design

Unit No. 8 Software Testing Methods

a) Software Testing Fundamentals
b) Testing objectives, Testing Principles.
c) Test Case Design.
d) White-Box Testing, Basis Path Testing, Control Structure Testing, Black-Box Testing.

Unit No. 9 Case Study (Small Project)

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