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

Course: Software Engineering-I (3414)　　　　**Semester: Spring, 2014**
Level: BS (CS)　　　　　　　　　　　　　　**Total Marks: 100**

ASSIGNMENT No. 1
(Units: 1 – 4)

Note: All questions are compulsory. Each question carries equal marks.

Q. 1　Why we need Software, explain in detail? Also explain the types of Software with the help of suitable examples.

Q. 2　a)　The concurrent process model defines a set of "states." Describe what these states represent in your own words, and then indicate how they come into play within the concurrent process model?
　　　b)　What are the advantages and disadvantages of developing software in which quality is "good enough"? That is, what happens when we emphasize development speed over product quality?

Q. 3　a)　Write a Comparison between Spiral model and Concurrent Development model.
　　　b)　Write the advantages and Disadvantages of RAD and Water Fall models.
　　　c)　What are the major difficulties in the spiral model led to the introduction of the Win Win spiral model?

Q. 4　You have been appointed a project manager for a major software products company. Your job is to manage the development of the next-generation version of its widely used word-processing software. Because competition is intense, tight deadlines have been established and announced. What team structure would you choose and why? What software process model(s) would you choose and why?

Q. 5　Explain the important characteristic of system and also explain the different types of system with the help of suitable examples.

ASSIGNMENT No. 2
(Units: 5 – 8)

Total Marks: 100

Note: All questions are compulsory. Question 1 & 2 have 20 marks each and Question 3 has 60 marks

Q. 1   Explain requirement elicitation process in detail with the help of suitable examples.   **(20)**

Q. 2   Explain the Structure of Analysis model in detail with the help of suitable examples.   **(20)**

Q. 3   You have been appointed as a senior software engineer for a major software products company. Your job is to analysis and design of software's. Derive a set of requirements and create a top level design for the University Information System.   **(60)**

3414 Software Engineering-I   Credit Hours: 4 (4+0)

Recommended Book:
Software Engineering 5th Edition by Roger Pressman

Course Outlines:
Unit No. 1 Introduction
> Introduction to Software, role of Software, Characteristics of Software, Need for Software, Introduction to Software Engineering

Unit No. 2 Software Engineering Models
> Software Process, Software Process Models (Linear Sequential Model, Prototyping Model, RAD Model, Evolutionary Software Process Models)

Unit No. 3 Project Management
> Project Management Concept, Software Management Team, Common Software Management Problems, and Basic Management Techniques

Unit No. 4 System Engineering
> System, Types of system, elements of system, Approaches to Software Engineering (Structured approach, Object-Oriented approach)

Unit No. 5 Analysis Concepts and Principles
> Requirements Analysis, Communication Techniques, Analysis Principles, Software Prototyping, Specification, Specification Review

Unit No. 6 Analysis Modeling-I

Elements of the Analysis Model, Data Modeling, Functional Modeling (DFD), Behavioral Modeling (STD)

Unit No.7 Analysis Modeling-II

Entity Relationship Diagram (ERD), Control Flow Model, Control Specification and Process Specification, the Data Dictionary

Unit No. 8 Design Concepts and Principles

Design concepts, Design Process, Effective Modular Design, Design Principles for Effective Modularity, Introduction to Design Model

Unit No. 9 Software Testing Methods

Software Testing Fundamentals, Testing objectives, Testing Principles, Test Case Design, white Box Testing, Basis Path Testing, Control Structure Testing, Control Structure Testing, Black Box Testing

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