

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-I (3414)

Level: BS (CS)

Semester: Spring, 2013

Total Marks: 100

ASSIGNMENT No. 1

Note: All questions carry equal marks.

- Q.1 What are the differences between generic software product development and custom software development?
- Q.2 Consider development of the following system. Suggest most appropriate software process model with arguments:
a) Online admission system b) Social networking system
- Q.3 Explain how both the water fall model and prototype can be accumulated in the spiral process model? Give example!
- Q.4 Who should be involved in a requirement review? Draw a process model showing how a requirement review might be organize?
- Q.5 Explain why the process of project planning is interactive and why a plan must be continually reviewed during a software project.

ASSIGNMENT No. 2

Total Marks: 100

Note: Question 1 & 2 have 20 marks each and Question 3 has 60 marks

- Q.1 Suggest how an engineer responsible for drawing up a system requirement specification might keep track of relationship between functional and non functional requirement.
- Q.2 Explain the four P's that are important in effective software project management.
- Q.3 You are responsible for the development of an electronic mail system to be implemented on a PC network. The e-mail system will enable users to create letters to be mailed to another user, general distribution, or a specific address list. Letters can be read, copied, stored and the like. Using these distributions as a starting point, derive a set of requirements and create a top level design for the e-mail system.

3414 Software Engineering-I

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) Project Management Concept
- b) Software Management Team
- c) Common Software Management Problems.
- d) Basic Management Techniques

Unit No.4 System Engineering

- a) System, Types of System, Elements of System
- b) Approaches to Software Engineering
 - a) Structured approach
 - b) Object-Oriented approach)

Unit No.5 Analysis Concepts and Principles

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

Unit No.6 Analysis Modeling -I

- a) Elements of the Analysis Model
- b) Data Modeling
- c) Functional Modeling (DFD).
- d) Behavioral Modeling (STD)

Unit No.7 Analysis Modeling-II

- a) Entity Relationship Diagram (ERD)
- b) Control Flow Model
- c) Control Specification and Process Specification
- d) The Data Dictionary

Unit No.8 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.9 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