

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 ASSIGNMENT(S) BORROWED OR STOLEN FROM OTHER(S) AS ONE'S OWN WILL BE PENALIZED AS DEFINED IN "AIOU PLAGIARISM POLICY".**

Course: Software Engineering (3575/3420)
Level: Post Graduate

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 systems. 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 iterative and why a play 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 the relationships between functional and non functional requirements.

- 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.
-

3575 (Old 3420) Software Engineering

Recommended Book: Software Engineering 5th Edition by Roger Pressman

Course Outlines:

Unit # 1 Introduction

- a) Introduction to Software, Role of Software
- b) Characteristics of Software, Need for Software
- c) Introduction to Software Engineering

Unit # 2 Software Engineering Models

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

Unit # 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 # 4 Analysis Concepts and Principles

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

Unit # 5 Analysis Modelling

- a) Introduction to Analysis Modelling, Data Modelling
- b) Functional Modelling and Information Flow (DFD).
- c) Behavioural Modelling 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 # 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 # 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 # 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 # 9 Case Study (Small Project)

=====