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 “AI OU 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 waterfall 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**  
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)**  

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