



Basic Information:

Course Title:	Software Engineering	Code	IT-361
Program:	BBIT	Credit Hours:	Three (03)
Total Sessions:	30 Classes + Mid Term + Final Term	Pre-Requisite:	Object Oriented Programming

Course Description:

This course very important from the point of view of Software Development. It will take students through the whole process of getting customer’s requirements and then transforming these into workable usable quality software.

Learning Outcomes:

After the completion of this course, it is expected that students who will involve themselves in the knowledge base working of the course will be capable to

- ✓ *To impart comprehensive knowledge regarding software development lifecycle*
- ✓ *Teach fundamental principles and techniques used in the development of large software systems.*
- ✓ *Provide an opportunity to work in a 2-semester industrially sponsored project in a team-environment.*
- ✓ *To introduce the basic project management concepts for the development of a high-quality product*
- ✓ *To demonstrate an appropriate set of tools to support the development of a range of software projects*

Teaching Learning Methodology:

The formal teaching component of this course consists of active student participation in and contribution to all forms of teaching and learning i.e. lectures, discussions, research assignments and projects. Lectures will be twice a week of 90 min each.

Group Configurations:

Students will form a team of 4 to 6 members. Students will have to work on the software problem and must perform all steps from requirements collection till deployment preparations. Each phase is taken as a task or assignment and will be submitted on specified dates throughout the semester. All templates will be provided by the instructor well before start of project.

Weekly Course Plan

Wk	Lecture Topic
01	<i>Introduction and Importance of SE... the miracle</i>
02	<i>Requirement Gathering + Use Case Writing</i>
03	<i>Use Cases to Design (UML)</i>
04	<i>System Sequence Diagram to Sequence Interaction Diagram</i>
05	<i>Class Diagram to Other supporting diagrams</i>
06	<i>Design to code and Deployment preparation</i>
07	<i>Overall review and final closure of project</i>
08	Mid Term Examination
09	<i>Software Cost Estimation</i>
10	<i>Software Development Life Cycle Intro and Importance</i>
11	<i>Water fall + Incremental + etc.</i>
12	<i>Agile Development</i>
13	<i>Data flow approach to software Development</i>
14	<i>Data flow approach to Software Development</i>
15	<i>Revision + Emerging trends</i>
16	Final Term Examination



Topics in Detail

No	Title	BK	Ch	Pages
01	<i>Introduction and Importance Of SE... The Miracle</i>			
02	<i>Requirement Gathering</i>			
03	<i>Use Case Writing and Case Study</i>			
04	<i>Use Cases to Design (UML)</i>			
05	<i>System Sequence Diagram to Sequence Interaction Diagram</i>			
06	<i>Class Diagram to Other Supporting Diagrams</i>			
07	<i>Design to Code and Deployment Preparation</i>			
08	<i>Overall Review and Final Closure of Project</i>			
09	<i>Software Cost Estimation</i>			
10	<i>Delphi Process, Other Cost Estimation</i>			
11	<i>Why SDLC Is Important... Case Study</i>			
12	<i>Waterfall, Incremental</i>			
13	<i>Prototyping, Spiral,</i>			
14	<i>Agile XP And Scrum</i>			
15	<i>Agile Development Phases</i>			
16	<i>Data Flow Context and Level 1</i>			
17	<i>Data Flow Level 2</i>			
18	<i>New Approaches to Software Engineering</i>			
19	<i>Revision</i>			
20	<i>Final Term Examination</i>			

Text & Recommended Readings

- A. *Software Engineering A Practitioner's Approach 7/E*
Roger S. Pressman
- B. *Software Engineering 9/E*
Sommerville
- C. *Applying UML and Patterns 2/E*
Larman

Term Research Assignment Specification

1. C# Dot Net (Design Tool)
2. Argo UML/Rational Rose
3. Microsoft Word for Documentation
 - Headings Arial 11pt Bold
 - Normal Text Times New Roman 10pt
 - Header Footer Times New Roman 8pt
 - Paragraph Single Line Spacing
 - First Line Indent 1.0 cm
 - Page Margins 2 cm from each side

Assignments:

No	Title	Due Date
A-01	<i>Term Project Allocation</i>	
A-02	<i>Software Requirement Specifications</i>	<i>2nd Class of Week 4</i>
A-03	<i>Software Design Specifications</i>	<i>2nd Class of Week 6</i>
A-04	<i>Comparison of SDLCs</i>	<i>2nd Class of Week 10</i>
A-05		



Grading Policy:

Final Grade for this course will be the cumulated result of the following term work with relevant participation according to the quoted percentage.

Sessional	25%		Mid Term	35%		Final Term	40%
Assignments	10 %		Mid Term Exam	25%		Final Exam	30%
Quizzes	10%		Lab Work/ Lab Mid Exam	10%		Case Study/ Project/ Term Paper	10%
Presentations	05%						

Remember subdivision of Mid Term and Final Term Examination should be done only in case of very essential and major Grading Instruments.

Dishonest Practices & Plagiarism

A student found responsible for dishonest practice/cheating (copying the work of others, use of unauthorized material in Grading Instruments etc.) in relation to any piece of Grading Instrument will face penalties like deduction of marks, grade 'F' in the course, or in extreme cases, suspension and rustication from IBIT.

For details consult Plagiarism Policy of the PU at <http://pu.edu.pk/dpcc/downloads/Plagiarism-Policy.pdf>

Grading System:

Letter Grade	Grade Point	Num Equivalence
A	4.00	85 – 100 %
A-	3.70	80 – 84 %
B+	3.30	75 – 79%
B	3.00	70 – 74 %
B-	2.70	65 – 69 %
C+	2.30	61 – 64 %
C	2.00	58 – 60 %
C-	1.70	55 – 57 %
D	1.00	50 – 54 %
F	0.00	Below 50 %
I	Incomplete	*
W	Withdraw	*

Norms to Course:

- ✓ *Submission Date and Time for the term instruments is always **Un-Extendable**.*
- ✓ *7 Absentees in class will be result in forced withdrawal. (PU Policy)*
- ✓ *Re-sit in Mid and Final Term will cause you a loss of 2 and 3 grade marks respectively. (PU Policy)*
- ✓ *This is your responsibility to keep track of your position in class evaluation units.*
- ✓ *After the submission date, NO excuse will be entertained.*
- ✓ *Keep a copy of all submitted Grading Instruments.*
- ✓ *Assignment is acceptable only in its Entirety.*
- ✓ *No make up for any assignment and quiz.*
- ✓ *Copied & Shared work will score Zero.*
- ✓ *Assignments are Individual.*

Good Luck