

UG Detailed Syllabus Template
Software Testing and Project Management

Course Code	21CS61	Course type	BSC	Credits L-T-P	3 – 0 - 0
Hours/week: L - T- P	3 – 0 – 0			Total credits	3
Total Contact Hours	L = 40 Hrs; T = 0 Hrs; P = 0 Hrs Total = 40 Hrs			CIE Marks	100
Flipped Classes content	10 Hours			SEE Marks	100

Course learning objectives	
1.	To introduce the terminology, testing, test-case, pseudo-codes algorithms /flowcharts of Triangle, Next Date & Commission programs.
2.	To develop the skill of analyzing the Triangle, Next Date & Commission programs, with the perspective of Boundary Value Analysis, Equivalence Class Testing paradigms.
3.	Prepare test cards to measure project performance accomplishing specified requirements.
4.	Evaluate software quality based on industry perspectives and relevant versions.

Pre-requisites : Software Engineering, Graph Theory, C Programming

Unit – I	Contact Hours = 8 Hours
A perspective on Testing Basic definitions, Test cases, Insights from Venn diagram, Identifying Test Cases, Error and fault taxonomy, Levels of Testing. Examples: Generalized pseudocode, The Triangle problem, The Next Date function, The Commission Problem, The SATM (Simple Automatic Teller Machine) system, The currency convertor, Saturn Windshield Wiper Controller.	

Unit – II	Contact Hours = 8 Hours
Boundary Value Testing Boundary Value Analysis, Robustness Testing, Worst Case Testing, Special Value Testing, Examples, Random Testing, Guidelines for Boundary Value Testing. Case Study: Analysis of Banking application using Boundary Value Analysis	

Unit – III	Contact Hours = 8 Hours
Equivalence Class Testing: Equivalence classes, Equivalence Class Test Cases for the Triangle Problem, Equivalence Class Test Cases for the NextDate Function, Equivalence Class Test Cases for the Commission Problem, Guidelines and Observations. Case Study: Analysis of Amazon E-Commerce application by using Equivalence class testing.	

Unit – IV	Contact Hours = 8 Hours
Project management: Risk management, Managing people, Teamwork Configuration management: Change management, Version management, System building, Release management Case study: GitHub	

Unit – V	Contact Hours = 8 Hours
Project Planning: Software pricing, Plan-driven Development: Project Plans, Planning process, Project scheduling: Schedule Representation, Agile Planning, Estimation techniques: Algorithmic Cost Modeling. The COCOMO II Model. Project Duration and Staffing.	

Flipped Classroom Details

Unit No.	I	II	III	IV	V
No. for Flipped Classroom Sessions	1	2	2	2	1

Books	
	Text Books:
1.	Paul C. Jorgensen: Software Testing, ACraftsman's approach, 3 rd Edition, Auerbach Publications, 2008.
2.	Ian Sommerville: Software Engineering, Pearson Education, 9 th Edition onwards.
	Reference Books:
1.	Aditya P. Mathur: Foundations of Software Testing, Pearson Education, 2008.
2.	Srinivasan Desikan, Gopalaswamy Ramesh, : Software Testing Principles and Practices, 2 nd Edition, Pearson Education, 2007.
	E-resources (NPTEL/SWAYAM.. Any Other)- https://onlinecourses.nptel.ac.in/
1.	https://onlinecourses.nptel.ac.in/
2.	

Course delivery methods		Assessment methods	
1.	Chalk and Talk	1.	IA tests
2.	PPT and Videos	2.	Online Quizzes (Surprise and Scheduled)
3.	Flipped Classes	3.	Open Book Tests (OBT)
4.	Online classes	4.	Course Seminar

		5.	Semester End Examination
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Course Outcome (COs)

At the end of the course, the student will be able to (Highlight the **action verb** representing the learning level.)

Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		Learning Level	PO(s)	PSO(s)
1.	Define the test case, testing and error taxonomy.	Re	1	1
2.	Illustrate Test Cases for Triangle, Next Date and Commission Problem for Boundary Value Analysis.	Un	2	1
3.	Design Test Cases for Triangle, Next Date and Commission Problem for Equivalence Class Testing.	Ap	3	2
4.	Prepare Test cards and Project schedule models for the given scenarios.	Ap	3	2

Scheme of Continuous Internal Evaluation (CIE):

Components	Addition of two IA tests	Online Quiz	Addition of two OAs/ Course project	Course Seminar	Total Marks
Marks	25+25 = 50	4* 5 marks = 20	10+10 =20	10	100

OBA - Open Book Assignment
Minimum score to be eligible for SEE: 40 OUT OF 100

Scheme of Semester End Examination (SEE):

1	It will be conducted for 100 marks of 3 hours duration.
2	Minimum marks required in SEE to pass: Score should be $\geq 35\%$, however overall score of CIE + SEE should be $\geq 40\%$.
3	Question paper contains 3 parts - A,B & C, wherein students have to answer any 5 out of 7 questions in part A, 5 out of 10 questions choosing 1 question from each unit in part B & 1 out of 2 questions in part C.

Rubrics:Levels	Target
1 (Low)	60% of the students score Less than 50 % of the total marks.
2 (Medium)	60% of the students score 50 – 70 % of the total marks.
3 (High)	60% of the students score More than 70 % of the total marks.

[illegible]

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5															
Tick mark the CO, PO and PSO mapping															

Name & Signature of Faculty members
involved in designing the syllabus

Name & Signature of Faculty members
verifying/approving the syllabus

