E.G.S. PILLAY ENGINEERING COLLEGE, NAGAPATTINAM(AUTONOMOUS)
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
SEVENTH SEMESTER B.E. (CSE)
1702CS6702 – SOFTWARE PROJECT AND MANAGEMENT(2021-2022)
COURSE PLAN - IMPLEMENTATION PART

I. GENERAL DETAILS

Subject Code	**:** 1702CS702
Subject Name	**:** Software Project and Management
Programme	: B.E. (CSE)
Course Coordinator	**: Mr.M.Rajakumaran**
Reviewed By Hod	**:** Dr.M.Chinnadurai
Effective from	**: July 2021 – Dec 2021**
Version Number	**:** 01

II Course Context and Overview

Software Project Management is Core subject in 7th semester in B.E. (CSE) R2017 curriculum. In order to take this course, a student should have a prerequisite knowledge of Software Engineering.

This course is aimed at introducing the primary important concepts of project management related to managing software development projects. They will also get familiar with the different activities involved in Software Project Management. Further, they will also come to know how to successfully plan and implement a software project management activity, and to complete a specific project in time with the available budget.

An introduction to the concept and techniques of project management for a broad range of systems, including Web-based application development. Topics include resource management, organizational factors, project manager responsibilities, team building, and risk management. Tools and techniques for project estimating and scheduling will be presented

Course designed by		E.G.S.Pillay Engineering College (Autonomous) Affiliated to AU, Chennai.					
1	Category	Basic Sciences (B)	Engineering Sciences (ES)	Humanities and Social Sciences(HSS)	Professional Core (PC)	Professional Elective (PE)	Employability Enhancement Course (EEC)
					x		
2	Broad area	General	Design	Programming	Networking		
			X				

III. Prerequisite

Software Engineering

IV (a).Course Outcomes (COs):

After successful completion of the course, students will be able to

	Competency	Cognitive level
CO1	Identify and build an appropriate process model for a given project	Understand
CO2	Analyse the principles at various phases of software development.	Analyze
CO3	Translate specifications into design, and identify the components to build the architecture fora given problem, all using an appropriate software engineering methodology.	Understand
CO4	Define a Project Management Plan and tabulate appropriate Testing Plans at different levelsduring the development of the software	Understand
CO5	Understand the software project estimation models and estimate the work to be doneresources required and the schedule for a software project	Understand

(b). Program Outcomes (PO)

After successful completion of the programme, Graduates will be able to

PO1: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change.

(c). Program Specific Outcomes (PSO)
After successful completion of the programme, Graduates will be able to

PSO1: The ability to apply software engineering principles and practices to design and develop software systems that meet the automation needs of societal and industrial problems.

PSO2: The ability to apply the skills & knowledge gained in the fields such as Artificial Intelligence, Data Science, Cloud Computing, Social Network Analysis & Mobile Application development for building a successful career.

d.COs Vs POs/PSOs Matrix

Comp.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P1O	PO11	PO12	PSO 1	PSO 2
CO1	3	2	-	-	-	-	-	-	-	-	-	-	1	1
CO2	2	2	-	-	2	-	-	-	-	-	-	-	2	1
CO3	2	1	2	2	3	-	-	3	3	3	2	3	3	3
CO4	1	1	1	2	2	-	-	2	2	2	3	2	2	2
CO5	1	1	2	2	1	-	-	1	2	1	2	1	2	2

Support provided by COs to Pos/PSOs:-L = lightly(1); M = Moderately(2); S = Substantially(3)

V. Delivery Technologies:

S. No.	Teaching Aids
i.	Classroom with LCD Projector

VI. Syllabus

1702CS702SOFTWARE PROJECT MANAGEMENT **L T P C**
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UNIT I	**PROJECT EVALUATION AND PROJECT LIFE CYCLE**	**09**
Understanding software projects – Project management vs. product management – stages of projectmanagement – Software project life cycle - Managerial issues		
UNIT II	**ACTIVITY PLANNING AND RISK MANAGEMENT**	**09**
Project initiation – Identifying project – Developing project character – Identifying stack holders –Requirement analysis – Gathering requirements – Requirements types – Project scope planning – Resourcebreakdown structure (RBS) – Manpower planning – Quality planning – Time and Cost estimates – Riskmanagement planning – Procurements for the project.		
UNIT III	**COST ESTIMATION TECHNIQUES**	**09**
Software effort estimation techniques: KLOC/SLOC estimation, expert opinion, top-down and bottom-upapproach, use-case point estimates, object point estimates, Delphi technique – Project test plan – Softwarequality assurance (SQA) – Software quality control (SQC) – cost of quality – Software quality Metrics – SEICMMimodel		
UNIT IV	**RISK MANAGEMENT AND CONTROL**	**09**
Understanding Project risk management process – risk management planning – identification of risks – riskanalysis – risk-response planning – Monitoring the risks – Role of project manager – Leadership styles –recruitment process – team development stages – Conflict management in Project environment – Hiring andfiring issues in software project management – Communication process		
UNIT V	**ADVANCED TOPICS**	**09**
Project scheduling – Activity diagrams – Network diagrams – PERT & CPM for Schedule development –Schedule compression technique – Critical chain method – Software project scheduling tools – Program -Project-Program-Portfolio relationships - Project portfolio – Project Management Careers.		
		TOTAL: 45 Hours

Text / Reference Books

Sl. No.	Title of the Book	Author(s)	Publisher
TEXT BOOKS			
T1	Software Project Management	Bob Hughes, Mike Cotterell and Rajib Mall	Fifth Edition, Tata McGraw Hill, New Delhi, 2012
T2	Effective Software Project Management	Robert K. Wysocki	Wiley Publication,2011
REFERENCES			
R1	Software Project Management: A real world guide to success	Joel Henry	Pearson,2011
R2	Software Project Management	Sanjay Mohapatra	Cengage Learning, 2011.
REFERENCE WEBSITES			
1	https://www.wrike.com		
2	www.cs.iit.edu		
3	https://www.projectmanager.com/		
4	http://www.cse.wustl.edu/~jain/cse571-11/		
5	https://onlinecourses.nptel.ac.in/noc19_cs70/preview		

VII. Detailed Course Plan

S.No.	Topic(s)	Hours	Teaching Method
Unit – IPROJECT EVALUATION AND PROJECT LIFE CYCLE			
CO1: Identify and build an appropriate process model for a given project			
1	Understanding software projects	2	Lecture with discussion
2	Project management vs. product management	2	
3	stages of projectmanagement	2	
4	Software project life cycle	2	
5	Managerial issues	1	
Total Number of hours for Unit I: 09(LH-10, TH-0, PH-0)			
Unit II ACTIVITY PLANNING AND RISK MANAGEMENT			
CO2 – Analyse the principles at various phases of software development.			
6	Project initiation – Identifying project – Developing project character – Identifying stack holders	2	Lecture with discussion
7	Requirement analysis – Gathering requirements- Requirements types	2	
8	Project scope planning – Resourcebreakdown structure (RBS)	1	
9	Manpower planning – Quality planning	2	
10	Time and Cost estimates – Riskmanagement planning	1	
11	Procurements for the project	1	
Total No. of hours for Unit II : 09(LH-09, TH-0, PH-0)			
Unit III COST ESTIMATION TECHNIQUES			
CO3 -Translate specifications into design, and identify the components to build the architecture for a given problem, all using an appropriate software engineering methodology.			
12	Software effort estimation techniques: KLOC/SLOC estimation, expert opinion	1	Lecture with discussion
13	top-down and bottom-upapproach	1	
14	use-case point estimates	1	

15	object point estimates, Delphi technique	2	
16	Project test plan	1	
17	Softwarequality assurance (SQA)	1	
18	Software quality control (SQC) – cost of quality – Software quality Metrics	1	
19	SEICMMimodel	1	
Total No. of hours for Unit III: 09(LH-08, TH-0, PH-0)			
Unit IV RISK MANAGEMENT AND CONTROL			
CO4- Define a Project Management Plan and tabulate appropriate Testing Plans at different levels during the development of the software			
20	Understanding Project risk management process – risk management planning	1	Lecture with discussion
21	identification of risks – riskanalysis – risk-response planning	1	
22	Monitoring the risks – Role of project manager – Leadership stylesrecruitment process	2	
23	Team development stages	2	
24	Conflict management in Project environment	1	
25	Hiring andfiring issues in software project management	1	
26	Communication process	1	
Total No. of hours for Unit IV: 09(LH-08, TH-0, PH-0)			
Unit V ADVANCED TOPICS			
CO5- Understand the software project estimation models and estimate the work to be doneresources required and the schedule for a software project			
27	Project scheduling – Activity diagrams – Network diagrams	2	Lecture with discussion
28	PERT & CPM for Schedule development	1	
29	Schedule compression technique	1	
30	Critical chain method	1	
31	Software project scheduling tools	1	
32	Program -Project-Program	1	
33	Portfolio relationships - Project portfolio	1	
34	Project Management Careers.	1	
Total No. of hours for Unit V: 09(LH-08, TH-0, PH-0)			

VIII. a)Course Outcomes – Evaluation Strategy

Comp.	Internal Tests	Assignment
CO1	75%	25 %
CO2	75%	25 %
CO3	100%	-
CO4	100%	-
CO5	100%	-