DHANALAKSHMI SRINIVASAN
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COURSE PLAN

Subject code: MG6088	**Branch/Year/Sem/Section: B.E CSE/IV/VIII**
Subject Name: SOFTWARE PROJECT MANAGEMENT	**Batch:2016-2020**
Staff Name: Dr.T.John peter,	**Academic year:2019-2020**

COURSE OBJECTIVE

1. To outline the need for Software Project Management.
2. To highlight different techniques for software cost estimation and activity planning.
3. To analyze PERT techniques.

TEXT BOOK:

T1. 1. Bob Hughes, Mike Cotterell and Rajib Mall: Software Project Management – Fifth Edition, Tata McGraw Hill, New Delhi, 2012.

REFERENCES:

R1 Robert K. Wysocki "Effective Software Project Management" – Wiley Publication,2011.

R2 Walker Royce: "Software Project Management"- Addison-Wesley, 1998.

R3 Gopalaswamy Ramesh, "Managing Global Software Projects" – McGraw Hill Education (India), Fourteenth Reprint 2013.

WEB RESOURCES
W1: http://www.mobot.org/jwcross/spm/ Information on Scanning probe microscopy RAPID
http://www.idahotech.com/rapid/index.html .
W2 https://www.scribd.com/document/392401530/Mg6088-Spm-Rejinpaul-Iq-April-May-2017
W3: https://www.manaresults.co.in/jntuh/download.php?subcode=117HP

TEACHING METHODOLOGIES:

- ➢ BB   - BLACK BOARD
- ➢ VIDEO   - VIDEO TUTORIAL
- ➢ PPT   - POWER POINT PRESENTATION

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

MG6088-SOFTWARE PROJECT MANAGEMENT

UNIT I PROJECT EVALUATION AND PROJECT PLANNING

Importance of Software Project Management – Activities Methodologies – Categorization of Software Projects – Setting objectives – Management Principles – Management Control – Project portfolio Management – Cost-benefit evaluation technology – Risk evaluation – Strategic program Management – Stepwise Project Planning.

UNIT II PROJECT LIFE CYCLE AND EFFORT ESTIMATION

Software process and Process Models – Choice of Process models - mental delivery – Rapid Application development – Agile methods – Extreme Programming – SCRUM – Managing interactive processes – Basics of Software estimation – Effort and Cost estimation techniques – COSMIC Full function points - COCOMO II A Parametric Productivity Model - Staffing Pattern.

UNIT III ACTIVITY PLANNING AND RISK MANAGEMENT

Objectives of Activity planning – Project schedules – Activities – Sequencing and scheduling – Network Planning models – Forward Pass & Backward Pass techniques – Critical path (CRM) method – Risk identification – Assessment – Monitoring – PERT technique – Monte Carlo simulation – Resource Allocation – Creation of critical patterns – Cost schedules.

UNIT IV PROJECT MANAGEMENT AND CONTROL

Framework for Management and control – Collection of data Project termination – Visualizing progress – Cost monitoring – Earned Value Analysis- Project tracking – Change control- Software Configuration Management – Managing contracts – Contract Management.

UNIT V STAFFING IN SOFTWARE PROJECTS

Managing people – Organizational behavior – Best methods of staff selection – Motivation – The Oldham-Hackman job characteristic model – Ethical and Programmed concerns – Working in teams – Decision making – Team structures – Virtual teams – Communications genres – Communication plans.

1. At the end of the course, the student will be able to:

CO1	Understand the knowledge of stepwise project planning. (K2)
CO2	Analyze Effort and Cost estimation techniques (K4)
CO3	Evaluate Critical path (CRM) method (K5)
CO4	Apply Earned Value Analysis (K3)
CO5	Understand Organizational behavior (K2)

2. Course Outcome (CO) Assessment:

CO	Knowledge Level	Internal Test		
		1	2	3
CO1	K2			
CO2	K4			
CO3	K5			
CO4	K3			
CO5	K2			

Cognitive Domain:
K1- Remember; K2- Understand; K3-Apply; K4- Analyse;K5- Evaluate; K6-Create

3.Programme Outcomes
Students graduating from Electrical and Electronics Engineering should be able to:

PO1	Engineering knowledge	Strong foundation in core Computer Science and Engineering, both theoretical and applied concepts
PO2	Problem analysis	Identify, Formulate, Ability to apply knowledge of mathematics, science and engineering to real-life problem solving and reaching validated conclusions related to computer science.
PO3	Design/development of solutions	Ability to analyze, design, model, and develop complex software and information management systems that meet the specified needs with appropriate consideration for the public health and Safety and the cultural societal and environmental considerations.

PO4	Conduct investigations of complex problems	Ability to use research– based knowledge and study methods including analysis, design , coding implementation, testing and interpretation of data, to provide valid Conclusions
PO5	Modern tool usage	Convention of recent techniques, modern engineering and IT tools with an understanding of the limitations
PO6	The engineer and society	Apply Reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the Computer Science and engineering Practice.
PO7	Environment and sustainability	Understanding the impact of Computer Science and Engineering solutions in the societal and human context.
PO8	Ethics	Understand and apply professional ethical responsibility
PO9	Individual and team work	Ability to function effectively within teams in Software projects.
PO10	Communication	Ability to communicate effectively, both in writing and oral makes effective presentations to provide and obtain clear instructions
PO11	Project management and finance	Demonstrate knowledge and understanding of the engineering management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multi-disciplinary environments.
PO12	Life-long learning	Recognize the need for and have the preparation and ability to engage in independent and life-long learning.

4. Programme Spcific Outcomes

After the successful completion of the U.G. programme in Computer Science and Engineering, Graduates will be able to:

PSO1:	Foundation of mathematical concepts: To use mathematical methodologies to crack problem using suitable mathematical analysis, data structure and suitable algorithm.
PSO2:	Foundation of Computer System: The ability to interpret the fundamental concepts, methodology of computer systems and to understand the functionality of hardware and software aspects.
PSO3:	Foundations of Software development: The ability to grasp the software development lifecycle and methodologies of software systems. Possess competent skills and knowledge of software design process.

5. CO-PO Mapping Table:

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	2	1	3	-	-	-	-	-	3	2	3	-	2	-	-
CO2	2	1	-	-	2	-	-	-	-	2	3	-	3	-	-
CO3	3	2	3	1	-	-	-	-	-2	-	-	-	3	2	2
CO4	3	2	1	1	2	-	-	-	-	-	3	-	3	2	2
CO5	3	2	-	-	2	-	-	-	3	1	-	-	3	2	2
Weighted average	3	2	1	1	-	-	-	-	-	-	-	-	3	2	2

Course plan:

Topic No	Topic Name	Books For reference	Page No	Teaching Methodology	No of periods required	Cumulative periods
UNIT I - PROJECT EVALUATION AND PROJECT PLANNING (9)						
1.	Importance of Software Project Management	T1	1	BB	1	1
2.	Activities Methodologies	T1	3	BB	1	2
3.	Categorization of Software Projects, Setting objectives	T1	6	BB	1	3
4.	Management Principles, Management Control	T1	8-11	BB	1	4
5.	Project portfolio Management	T1	12	BB	1	5
6.	Cost-benefit evaluation technology	T1	40	BB	1	6
7.	Risk evaluation	T1	50	BB	1	7
8.	Strategic program Management	T1	38	BB	1	8
9.	Stepwise Project Planning	T1	19	BB	1	9

LEARNING OUTCOME:
At the end of unit , the students will be able to
- Understand the importance of software project management.
- Understand the concept of Management Principles.
- To analyze step wise project planning.

	UNIT II -PROJECT LIFE CYCLE AND EFFORT ESTIMATION		(9)			
10.	Software process and Process Models	T1	64-67	BB	1	10
11.	Choice of Process models	T1	63	BB	1	11
12.	mental delivery	T1		BB	1	12
13.	Rapid Application development	T1	64	BB	1	13
14.	Agile methods, Extreme Programming ,SCRUM	R1	383	BB	1	14
15.	Managing interactive processes, Basics of Software estimation techniques	T1	84	BB	1	15
16.	Effort and Cost estimation	T1	85	BB	1	16
17.	COSMIC Full function points, COCOMO II A	T1	92-97	BB	1	17
18.	Parametric Productivity Model, Staffing Pattern.	T1	103	BB	1	18

LEARNING OUTCOME:20
At the end of unit , the students will be able to
- Understand the concept of software process models.
- Gain the knowledge about basics of software estimation techniques.

	UNIT III - ACTIVITY PLANNING AND RISK MANAGEMENT(9)					
19.	Objectives of Activity planning , Project schedules	T1		BB	1	19
20.	Activities , Sequencing and scheduling	T1	111-1215	BB	1	20
21.	Network Planning models	T1	117	BB	1	21
22.	Forward Pass & Backward Pass techniques	T1	1241217	BB	1	22
23.	Critical path (CRM) method ,Risk identification	T1	127,137	BB	1	23
24.	Assessment , Monitoring	T1	139	BB	1	24
25.	PERT technique	T1	142	BB	1	25

26.	Monte Carlo simulation ,Resource Allocation	T1	144	BB	1	26
27.	Creation of critical patterns, Cost schedules.	T1	149	BB	1	27

LEARNING OUTCOME:
At the end of unit , the students will be able to
- Understand the objectives of activity planning,project schedules.
- Analyze PERT Techniques.

UNIT IV PROJECT MANAGEMENT AND CONTROL				(9)		
28.	Framework for Management and control	T1	161	BB	1	28
29.	Collection of data Project termination	T1	166	BB	1	29
30	Visualizing progress ,Cost monitoring	T1	175-179	BB	1	30
31	Earned Value Analysis	T1	185	BB	1	31
32	Project tracking	T1	186	BB	1	32
33	Change control	T1	188	BB	1	33
34	Software Configuration Management	T1	192	BB	1	34
35	Managing contracts	T1	206	BB	1	35
36	Contract Management	T1	208	BB	1	36

LEARNING OUTCOME:35
At the end of unit , the students will be able to
- Understand the concept of Cost monitoring.
- Known about Earned Value Analysis
- Get the knowledge about Software Configuration Management

UNIT V STAFFING IN SOFTWARE PROJECTS				(9)		
37	Managing people ,Organizational behavior	R3	249	BB	1	37
38	Best methods of staff selection	R3	253	BB	1	38
39	Motivation	R3	255	BB	1	39
40	The Oldham-Hack man job characteristic model	R3	258	BB	1	40
41	Ethical and Programmed concerns	R3	260	BB	1	41

42	Working in teams, Decision making	R3	264	BB	1	42
43	Team structures	R3	270	BB	1	43
44	Virtual teams	R3	273	BB	1	44
45	Communications genres – Communication plans	R3	282	BB	1	45

LEARNING OUTCOME:
At the end of unit , the students will be able to
- Known about Organizational behavior
- Get the knowledge about Best methods of staff selection

CONTINUES INTERNAL ASSESSMENT DETAILS

ASSESMENT NUMBER	I	II	MODEL
TOPIC NO.(UNIT)	1-18 (1st & 2nd units)	19-36 (3rd & 4th units)	1-45 (units 1-5)

ASSIGNMENT DETAILS

ASSIGNMENT NUMBER	I	II	III
TOPIC NUMBER FOR REFERENCE	1-18 (1st & 2nd units)	19-36 (3rd & 4th units)	1-45 (units 1-5)
DEAD LINE	06-01-2010	10-02-2020	02-03-2020

ASSIGNMENT NUMBER	DESCRIPTIVE QUESTIONS/TOPIC (Minimum of 8 Pages)
I	Step wise project planning, COCOMO II A
II	Critical path (CRM) method , Earned Value Analysis
III	Best methods of staff selection

PREPARED BY   **VERIFIED BY**

Dr.T.John peter, ASP/CSE   **HOD/CSE**

APPROVED BY

PRINCIPAL