



Kadi Sarva Vishwavidyalaya
Faculty of Engineering & Technology
Third Year Bachelor of Engineering (Information Technology)
(In Effect From Academic Year 2019-20)

Subject Code: IT604F-N	Subject Title: Software Project Management
Pre-requisite	Software Engineering

Teaching Scheme (Credits and Hours)

Teaching scheme				Total Credit	Evaluation Scheme					
L	T	P	Total		Theory		Mid Sem Exam	CIA	Pract.	Total
Hrs	Hrs	Hrs	Hrs		Hrs	Marks	Marks	Marks	Marks	Marks
03	00	02	05	04	03	70	30	20	30	150

Course Objective:

- To understand the Software Project Planning and Evaluation techniques.
- To plan and manage projects at each stage of the software development life cycle (SDLC).
- To learn about the activity planning and risk management principles.
- To manage software projects and control software deliverables.
- To develop skills to manage the various phases involved in project management and people management.
- To deliver successful software projects that support organization's strategic goals.

Outline of the Course:

Sr. No.	Title of the Unit	MinimumHours
1	Project Evaluation And Project Planning	10
2	Project Life Cycle And Effort Estimation	10
3	Activity Planning And Risk Management	10
4	Project Management And Control	9
5	Staffing In Software Projects	9

Totalhours (Theory):48

Totalhours(Lab):32

Totalhours:80



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Detailed Syllabus

Sr. No	Topic	Lecture Hours	Weight age(%)
1	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.	11	22
2	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.	10	20
3	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.	10	21
4	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.	9	19
5	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.	8	18
Total		48	100

Instructional Method and Pedagogy:

- At the start of course, the course delivery pattern, prerequisite of the subject will be discussed.
- Lectures will be conducted with the aid of multi-media projector, black board, OHP etc.
- Attendance is compulsory in lecture and laboratory which carries 10 marks in overall evaluation.
- One internal exam will be conducted as a part of internal theory evaluation.
- Assignments based on the course content will be given to the students for each unit and will be evaluated at regular interval evaluation.
- Surprise tests/Quizzes/Seminar/tutorial will be conducted having a share of five marks in the overall internal evaluation.
- The course needs more focus on numerical examples based on exercises at the end of each chapter to aware of algorithm and theorem more precisely.



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Learning Outcome:

- Understand Project Management principles while developing software.
- Gain extensive knowledge about the basic project management concepts, framework and the process models.
- Obtain adequate knowledge about software process models and software effort estimation techniques.
- Estimate the risks involved in various project activities.
- Define the checkpoints, project reporting structure, project progress and tracking mechanisms using project management principles.
- Learn staff selection process and the issues related to people management

e-Resources:

- NPTEL: <https://nptel.ac.in/courses/106101061/29>
https://onlinecourses.nptel.ac.in/noc17_mg01/preview
- VIT: <https://www.youtube.com/watch?v=8IG3-DFiSSs>
- Coursera: <https://www.coursera.org/learn/uva-darden-project-management>

Reference Books:

1. Software Project Management (SIE), (Fifth Edition), Bob Hughes, Mike Cotterell, Rajib Mall, Tata McGraw-Hill
2. Robert K. Wysocki "Effective Software Project Management" – Wiley Publication, 2011.
3. Walker Royce: "Software Project Management"- Addison-Wesley, 1998.
4. Gopaldaswamy Ramesh, "Managing Global Software Projects" – McGraw Hill Education (India), Fourteenth Reprint 2013.

List of experiments

1. Compute function points and complete FP based project estimation.
 2. COCOMO based project estimation i.e. using TinyCalculator and STRS COCOMO calculator.
 3. Implement Halstead's software science using any programming language.
 4. Creating Work Breakdown Structure (WBS) using ProjectLibre tool.
 5. Draw Gantt chart and find critical path using ProjectLibre tool.
 6. Draw Gantt chart and find critical path using GanttProject tool.
 7. Draw Gantt chart using Microsoft Excel.
 8. Perform cost-benefit analysis using Microsoft Excel.
 9. Track different versions of a software using Git tool.
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- ❖ Case study based approach, which covers various aspects of Software Project Management or one project with documentation which covers most of the aspects of SPM.
 - ❖ Study and use of at least SPM tools.
 - ❖ Study and use of Software testing tools.