

Kadi Sarva Vishwavidyalaya

Master of Computer Application (MCA)

Year – II (Semester – IV) (W.E.F. January 2015)

Subject Name: Software Project Management (SPM) – MCA403

Sub Total Credit	Teaching scheme		Examination scheme				
	(per week)		MID	CEC	External		Total Marks
	Th	Pr	Th	Th	Th.	Pr.	
3	3	0	25	25	50	0	100

Course Description: This subject is mainly designed to prepare IT project managers, novice or experienced, with project management skills needed to better manage IT projects. Built along the IT project management lifecycle, this course covers detailed topics of the basic concepts of IT project management, including initiating, planning, controlling, executing, and closing projects. The course also shows how IT projects should be managed, from inception to post implementation review. The students who take this subject will likely improve their management skills and abilities to define the project scope, create a workable project plan, and manage within the budget and schedule.

The subject covers a lot of material yet is run in a relaxed manner and teaches how to manage projects rather than how to administer a methodology.

There are no prerequisites - no prior project management training is necessary.

Course Objectives: The objective of this course is to provide a foundation to prepare students, as future IT project managers, IT engineers, or system architects, to play leading roles in the application and management of e-business system construction.

Upon successful completion of the course, students will be able to:

Understand the job roles of an IT project manager; Recognize the key issues during the IT project management procedures; Describe the best practices in IT project management processes; Build a performing organization and project team; Develop Work Breakdown Structures (WBS); Establish project estimates and project schedules; Create project plans; Manage overall change control; Control project execution processes; Terminate a project with a close-out strategy; Build up the baseline knowledge for further career in IT project management fields.

Pre-requisites:

Information System, System Analysis, System Design, Management Information System

Content:

UNIT – I

Introduction to Software Project Management:

[05 Lectures]

Introduction, Why is Software Project Management Important?, What is a Project? Software Projects versus Other Types of Project, Contract Management and Technical Project Management, Activities Covered by Software Project Management, Plans, Methods and Methodologies, Some Ways of Categorizing Software Projects, Stakeholders, Setting Objectives, The Business Case, Project Success and Failure, What is Management?, Management Control, Traditional versus Modern Project Management Practices

Project Evaluation and Programme Management:

[05 Lectures]

Introduction, A Business Case, Project Portfolio Management, Evaluation of Individual Projects, Cost-benefit Evaluation Techniques, Risk Evaluation, Programme Management, Managing the Allocation of Resources within Programmes, Strategic Programme Management, Creating a Programme, Aids to Programme Management, Some Reservations about Programme Management, Benefits Management

UNIT – II

An Overview of Project Planning

[04 Lectures]

Introduction to Step Wise Project Planning, Step 0: Select Project, Step 1: Identify Project Scope and Objectives, Step 2: Identify Project Infrastructure, Step 3: Analyse Project Characteristics, Step 4: Identify Project Products and Activities, Step 5: Estimate Effort for Each Activity, Step 6: Identify Activity Risks, Step 7: Allocate Resources, Step 8: Review/Publicize Plan, Steps 9 and 10: Execute Plan/Lower Levels of Planning

Selection of an Appropriate Project Approach

[05 Lectures]

Introduction, Build or Buy?, Choosing Methodologies and Technologies, Software Processes and Process Models, Choice of Process Models, Structure versus Speed of Delivery, The Waterfall Model, The Spiral Model, Software Prototyping, Other Ways of Categorizing Prototypes, Incremental Delivery, Atern/Dynamic Systems Development Method, Rapid Application Development, Agile Methods, Extreme Programming (XP), Scrum, Managing Iterative Processes, Selecting the Most Appropriate Process Model

UNIT – III

Software Effort Estimation

[05 Lectures]

Introduction, Where are Estimates Done? Problems with Over- and Under-Estimates, The Basis for Software Estimating, Software Effort Estimation Techniques, Bottom-up Estimating, The Top-down Approach and Parametric Models, Expert Judgement, Estimating by Analogy, Albrecht Function Point Analysis, Function Points Mark II, COSMIC Full Function Points, COCOMO II: A Parametric Productivity Model, Cost Estimation, Staffing Pattern, Effect of Schedule Compression, Capers Jones Estimating Rules of Thumb

Activity Planning

[04 Lectures]

Introduction, The Objectives of Activity Planning, When to Plan, Project Schedules, Projects and Activities, Sequencing and Scheduling Activities, Network Planning Models, Formulating a Network Model, Adding the Time Dimension, The Forward Pass, The Backward Pass, Identifying the Critical Path, Activity Float, Shortening the Project Duration, Identifying Critical Activities, Activity-on-Arrow Networks

UNIT – IV

Risk Management

[03 Lectures]

Introduction, Risk, Categories of Risk, A Framework for Dealing with Risk, Risk Identification, Risk Assessment, Risk Planning, Risk Management, Evaluating Risks to the Schedule, Applying the PERT Technique, Monte Carlo Simulation, Critical Chain Concepts

Resource Allocation

[03 Lectures]

Introduction, The Nature of Resources, Identifying Resource Requirements, Scheduling Resources, Creating Critical Paths, Counting the Cost, Being Specific, Publishing the Resource Schedule, Cost Schedules, The Scheduling Sequence

Monitoring and Control

[03 Lectures]

Introduction, Creating the Framework, Collecting the Data, Review, Project Termination Review, Visualizing, Progress, Cost Monitoring, Earned Value Analysis, Prioritizing Monitoring, Getting the Project Back to Target, Change Control, Software Configuration Management (SCM)

Managing Contracts

[02 Lectures]

Introduction, Types of Contract, Stages in Contract Placement, Typical Terms of a Contract, Contract Management, Acceptance

UNIT – V

Managing People in Software Environments

[03 Lectures]

Introduction, Understanding Behaviour, Organizational Behaviour: A Background, Selecting the Right Person for the Job, Instruction in the Best Methods, Motivation, The Oldham–Hackman Job Characteristics Model, Stress, Health and Safety, Some Ethical and Professional Concerns

Working in Teams

[03 Lectures]

Introduction, Becoming a Team, Decision Making, Organization and Team Structures, Coordination Dependencies, Dispersed and Virtual Teams, Communication Genres, Communication Plans, Leadership

Software Quality

[05 Lectures]

Introduction, The Place of Software Quality in Project Planning, The Importance of Software Quality, Defining Software Quality, ISO 9126, Product and Process Metrics, Product versus Process Quality Management, Quality Management Systems, Process Capability Models, Techniques to Help Enhance Software Quality, Testing, Software Reliability, Quality Plans

Study References:

Appendix A Prince2—An Overview

Appendix B Project Management Tools

Appendix C Answer Pointers

Total: 50 Lectures

Text Book:

1. Bob Hughes, Mike Cotterell, Rajib Mall "Software Project Management", Fifth Edition, Special Indian Edition (SIE), Tata McGraw Hill, 2012.

References:

1. S A Kelkar "Software Project Management A Concise Study", Third Edition, PHI Learning, 2013.
2. Kathy Schwalbe "Project Management in IT", Indian Edition, Cengage Learning, 2009.
3. Teresa Luckey, Joseph Phillips "Software Project Management for DUMMIES", Wiley Publishing, Inc., 2006