

Name of the Subject: SOFTWARE PROJECT MANAGEMENT
Course Code and Subject Code: IS 443, SPM
Course Credit: FULL (50 SESSIONS OF 60 MINUTES EACH)

Course Description:

This course examines the defining characteristics of IT projects, especially involving the development of software intensive systems, and introduces the student to a variety of project management techniques that can be applied in an IT project context. While IT projects are similar in some ways to other types of projects, they pose unique challenges for the managers and organizations that undertake them. IT project management is particularly challenging because of several factors including: (1) the rapid pace of technological changes occurring in the IT field, (2) the invisible nature of software, (3) the ever-present pressure to add new features and functionality to systems, and (4) the difficulty of managing the organizational changes that accompany most IT implementations. In spite of the advanced technology that surrounds computer-based information systems, IT project management in most organizations is not very disciplined.

Evaluation pattern:

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| Class participation and Attendance | 10% |
| Quizzes, presentation and Assignments | 20% |
| Mid Term Examination | 30% |
| End Term (University) Examination | 40% |

Pedagogy:

- Lectures
- Case study
- Minor projects

| Session | Course Content | Percentile weightage |
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| 1 - 4 | Introduction to Software Project Management Importance, Project, Software Projects Vs Other Projects, Contract Management, and technical project management, Activities, Plan, Methods, and methodologies, some ways to categorizing software projects, management | 5% |
| 5 - 9 | Step wise – an overview of project planning Introduction to stepwise project planning, select project, identify project scope and objectives, identify project infrastructure, analyze project characteristics, identify project products and activities | 10% |
| 10 - 14 | Programme management and project evaluation Programme management, managing the allocation of resources within programmes, strategic programme management , evaluation of individual projects, technical assessment, cost benefit analysis, cash flow forecasting, | 10% |

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| | cost benefit evaluation techniques, risk evaluation | |
| 15 - 19 | Selection of an appropriate project approach Choosing technologies, technical plan contents list, choice of process models, structure versus speed of delivery, the waterfall model, V-process model, the spiral model, prototypes, incremental delivery | 10% |
| 20 - 22 | Software efforts estimation Where Estimate done? Problems with over and under estimates, the basis for software estimating, software effort estimation techniques, Expert judgment, estimating by analogy, Albrecht function point analysis, function points mark II, COSMIC full function points, COCOMO : a parametric model, | 5% |
| 23 - 27 | Activity Planning The objectives of activity planning, When to plan, Project schedules, Project 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. | 10% |
| 28 - 32 | Risk management Risk, Categories of risk, A framework for dealing with risk, Risk identification, Risk assessment, Risk planning, Risk management, Evaluating risks to the schedule | 10% |
| 33 - 35 | Resource allocation The nature of resources, Identifying resource requirements, Scheduling resources, Creating critical paths, Counting the cost | 5% |
| 36 - 38 | Monitoring and control Creating the framework, Collecting the data, Visualizing progress, Cost monitoring, Earned value, analysis, Prioritizing monitoring, Getting the project back to target, Change control | 10% |
| 39 - 41 | Managing contracts The ISO 12207 approach to the acquisition and supply of software, The supply process, Types of contract, Stages in contract placement, Typical terms of a contract, Contract management, Acceptance. | 5% |
| 42 - 45 | Managing people and organizing teams Understanding behavior, Organizational behavior: a background, selecting the right person for the job, Instruction in the best methods, Motivation, The Oldham-Hackman job characteristics model Working in groups | 10% |
| 46 - 50 | Software quality The place of software quality in project planning, The importance of software quality, Defining software quality, ISO 9126, Practical software quality measures | 10% |

Text Book:

1. Software Project Management, Bob Hughes & Mike Cotterell, 4th Edition, Tata McGraw Hill

Reference Books:

1. Software Project Management, Pankaj Jalote
2. Effective Software Project Management, Robert K. Wysocki, Wiley