**Annexure ‘CD – 01’**





U T T A R P R A D E S H

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| --- | --- | --- | --- | --- | --- |
| **L** | **T** | **P/S** | **SW/FW** | **No. of**  **PSDA** | **TOTAL**  **CREDIT**  **UNITS** |
| 3 | - | 2 | 2 | 3 | 5 |

**Course Title:** Software Project Management **Credit Units: 5**

**Course Level: UG Course Code: CSE432**

**Course Objectives:** After finishing this course student will be able to:

* Deliver successful software projects that support organization's strategic goals
* Match organizational needs to the most effective software development model
* Plan and manage projects at each stage of the software development life cycle (SDLC)
* Create project plans that address real-world management challenges and develop the skills for tracking and controlling software deliverables.

**Pre-requisites: Software Engineering**

**Course Contents/Syllabus:**

|  |  |  |
| --- | --- | --- |
|  |  | **Weightage (%)** |
| **Module I** | **20%** |  |
| **Descriptors/Topics – Project Management Essentials**  Introduction to Software Project Management, & its Key Terminologies, Stakeholder Management, Scope Management, The nature of software production; Key objectives of effective management: role of the software project manager, Organizational Behaviour & People Management: Selecting the Right Person for the Job, Instruction in the Best Methods, Motivation, Behavioural Models, Stress Management, Health and Safety, Some Ethical and Professional Concerns, Team organizations & structure, Leadership styles |
| **Module II** | **20%** |  |
| **Descriptors/Topics -Project Planning and Evaluation**  Step wise Planning, PRINCE2, PMBOK, Project Evaluation-Cost benefit analysis, cash flow forecasting, cost-benefit evaluation techniques, Selection of appropriate Life cycle model, Effort Estimation, Contract Management |
| **Module III** | **20%** |  |
| **Descriptors/Topics –Activity Scheduling & Risk Management**  Activity Planning, CPM and PERT technique, Sequencing & Scheduling Activities, Network Diagrams(Activity-on-arrow, Activity-on-node), Risk Management-Risk Identification & prioritization, Risk Handling, Risk Monitoring & Control, Resource Allocation- nature of resources, identifying resource requirements, publishing the resource schedule, cost schedules, resource levelling |
| **Module IV** | **20%** |  |
| **Descriptors/Topics- Monitoring & Control**  Creating the Framework, Collecting the Data, Review, feedback and reporting mechanisms, Visualizing Progress, Cost Management, Earned Value Analysis, Prioritizing Monitoring, Getting the Project Back to Target, Change Control, Software Configuration Management (SCM). |  | |
| **Module V** | **20%** | |
| **Descriptors/Topics – Project Closure & Quality Management**  Project Closure: Reasons for Project Closure, Project Closure Process, Performing a Financial Closure, Project Closure Report.  Software Quality, Software Quality Models, Product and Process Metrics, Product versus Process Quality Management, Quality Management Systems, Process Capability Models, Techniques to Help Enhance Software Quality, Software Quality Control and Quality Assurance, Quality Standards |

Course Learning Outcomes:

* Ability to apply knowledge of engineering and computing appropriate to the discipline.
* Ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.
* Ability to design, implement, and evaluate software project.
* Ability to use current techniques, skills, and tools necessary for computing practice.
* Determine an appropriate project management approach through an evaluation of the business context and scope of the project.

Pedagogy for **Course Delivery:**

As of current covid-19 situation, Courses will be taught in flipped mode using MS team, e-content is developed using four quadrant approach and will be

uploaded on LMS. The course instructor will also spend considerable time in transforming theoretical concepts in practical oriented approach using virtual

labs.

**List of Professional Skill Development Activities (PSDA):**

* 1. **Case Study**
  2. **Quiz**
  3. **Minor Experiment**

**Lab/ Practicals details, if applicable:**

**List of Experiments:**

* + 1. Create a MS Project application, set the file properties, and set the Project Calender.
    2. Using project planning activities, draw the PERT for the project.
    3. Draw the Gantt charts for the software project.
    4. Using the SPM – manage, plan and organize the project.
    5. Using MS project, plan and organize the software and split the task.
    6. Using MS Project Link, Move and copy tasks in Software Project
    7. Draw the checkpoints and milestones of a project
    8. Using MS Project do the time estimation of tasks and Set task dependencies & constraints.
    9. Using MS Project assign the resources and set the notes for resources.
    10. Using MS Project workspace base line the project and review the critical path

**Assessment/ Examination Scheme:**

|  |  |
| --- | --- |
| **Theory L/T (%)** | **Lab/Practical/Studio (%)** |
| **80** | **20** |

**Theory Assessment (L&T):**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Continuous Assessment/Internal Assessment**  **(40%)** | | |  |  |  | **End Term**  **Examination**  **(60%)** |
| **Components (Drop down)** | **Attendance** | **Class Test** | **Assignment** | Viva | Group  Presentation | **Quiz** |  |  |
| **Linkage of PSDA with Internal**  **Assessment**  **Component, if any** |  |  |  | 3 | 3 | 10 |  |  |
| **Weightage (%)** | 5 | 15 | 4 |  |  |  |  | 60 |

**Lab/ Practical/ Studio Assessment:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Continuous Assessment/Internal Assessment**  **(40%)** | |  | **End Term Examination**  **(60 %)** | | |
| **Components (Drop down** | Attendanc e | Lab Record | Performanc  e | **Viva** | **Practical** | **Viva** | **Total** |
| **Weightage (%)** | 5 | 10 | 15 | 10 | 30 | 30 | 60 |

**Text Reading:**

* Tom Demarco, Controlling Software Project Management, Measurement, Prentice Hall, New Jersey.

**References:**

* Tom Glib, Finzi Susannah, Principles of Software Engineering Management, Addison Wesley, England.
* Bob Hughes and Mike Cotterell; Software Project Management, third edition, Tata McGraw Hill Publishing Company Ltd., New Delhi.
* PankajJalote; Software Project Management in Practice, Pearson Education Asia.
* Watts S. Humphrey; Winning with Software? An Executive Strategy, Pearson Education Asia.
* Philip Metzger, Managing a Programming Project, Prentice Hall, New Jersey.