1. Subject Name: **Software Project Management** Subject Code- **BCA622**
2. Year**: 3rd Year BCA** Semester: **6th**

**Pre-requisite:** Basic knowledge of Software Engineering and Software Project Management.

**Introduction**: This course is strongly suggested for any student planning to take an internship in Computer Science. After an overview of the phases of the software lifecycle, current methodologies, tools, and techniques being applied to each phase will be discussed in depth with localized exercises given to reinforce learning of concepts.

**Course Outcomes (CO):** This course will serve to broaden the student's understanding of the issues and latest developments in the area of software development and maintenance. To reach this goal, the following objectives need to be met:

**CO1**: Describe software process maturity framework and Explain conventional software management and software economics.

**CO2**: Discuss software projects and project planning and Analyze project tracking and control.

**CO3**: Assess the role of project closure analysis, Successful Projects, Teams and risk management.

**CO4**: Plan-Driven process and methodologies, including classic and agile methodologies

**CO5**: Estimation and Scheduling - How to get it right, and what can happen if you don't

**Mapping of Course Outcomes (CO) and Program Outcomes (PO):**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | **PSO1** | **PSO2** |
| CO1 |  |  | 2 |  |  |  |  |  | 2 | 3 | 2 |
| CO2 |  |  |  |  | 2 |  | 2 | 2 | 1 |  |  |
| CO3 | 2 | 3 |  | 2 |  |  | 2 |  |  | 2 |  |
| CO4 | 1 |  |  |  |  | 1 |  | 2 | 2 |  | 3 |
| CO5 |  |  | 2 | 1 |  |  | 2 |  | 2 | 2 | 1 |

* + - 1. **3 – High; 2 – Medium; 1 – Low**

|  |  |  |  |
| --- | --- | --- | --- |
| **Module Number** | **Topics** | **No. of Lectures** | **Course Outcome (CO)** |
| 1. | **Project Evaluation And Project Planning** | **7** |  |
| 1. Importance of Software Project Management – Activities Methodologies – Categorization of Software Projects.
 | 2 | CO1 |
| 1. Setting objectives –Management Principles – Management Control – Project portfolio Management – Cost-benefit evaluation technology
 | 3 | CO1,CO2 |
| 1. Risk evaluation – Strategic program Management – Stepwise Project Planning.
 | 2 | CO2,CO3 |
| 2. | **Project Life Cycle and Effort Estimation** | **7** |  |
| 1. Software process and Process Models, Choice of Process models, mental delivery, Rapid Application development.
 | 2 | CO3,CO4 |
| 1. Agile methods, Extreme Programming, SCRUM, Managing interactive processes, Basics of Software estimation.
 | 2 | CO3,CO4 |
| 1. Effort and Cost estimation techniques, COSMIC Full function points, COCOMO II A Parametric Productivity Model, Staffing Pattern.
 | 3 | CO2,CO3 |
| 3. | **Activity Planning And Risk Management** | **8** |  |
| 1. Objectives of Activity planning, Project schedules, Activities, Sequencing and scheduling.
 | 2 | CO4,CO5 |
| 1. Network Planning models, Forward Pass & Backward Pass techniques, Critical path (CRM) method, Risk identification.
 | 3 | CO3,CO4 |
| 1. ssessment, Monitoring, PERT technique, Monte Carlo simulation – Resource Allocation, Creation of critical patterns, Cost schedules.
 | 3 | CO4,CO5 |
| 4. | **Project Management And Control** | **7** |  |
| 1. Framework for Management and control, Collection of data Project termination, visualizing progress.
 | 3 | CO3,CO4 |
| 1. Cost monitoring, Earned Value Analysis-Project tracking, Change control-
 | 2 | CO3,CO4 |
| 1. Software Configuration Management – Managing contracts –Contract Management.
 | 2 | CO4,CO5 |
| 5. | **Staffing in Software Projects** | **6** |  |
| 1. Managing people – Organizational behavior – Best methods of staff selection – Motivation.
 | 2 | CO1,CO2, CO3 |
| 1. The Oldham-Hackman job characteristic model –Ethical and Programmed concerns – Working in teams.
 | 2 | CO2,CO3 |
| 1. Decision making – Team structures – Virtual teams – Communications genres – Communication plans.
 | 2 | CO4,CO5 |
| **Total Lecture Hours: 35 Hours** |

Faculty In-Charge HOD,

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