

**Software Metrics & Project Management**

Semester III	Subject Code: MS31901	Lectures: 60
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**Objectives:**

The syllabus aims in equipping students with,

- skills that are required to ensure successful medium and large scale software projects
- examining Requirements Elicitation, Project Management, Verification and Validation and Management of Large Software Engineering Projects
- applications of project management techniques for process modeling, planning, estimation, process metrics and risk management; perform software verification and validation using inspections, design and execution of system test cases.

<b>Unit 1: Introduction</b>	<b>10</b>
<b>Chapter 1 : Introduction to Project Management</b> <ul style="list-style-type: none"> <li>• What is a Project?</li> <li>• What is Project management?</li> <li>• Project phases and project life cycle</li> <li>• Organizational structure</li> <li>• Qualities of Project Manager</li> </ul>	4
<b>Chapter 2 : Project Management Components</b> <ul style="list-style-type: none"> <li>• Project Integration Management-Project plan development and execution</li> <li>• Change controls</li> <li>• Configuration management</li> </ul>	6

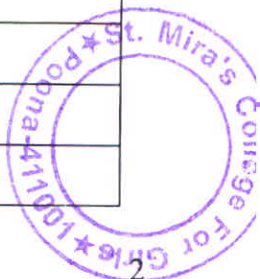
Sr. No.	BOS member		Sign
1	Dr. Razak Sayyed	Subject Expert	
2	Prof. Abhijit Sathe	Subject Expert	
3	Prof. Sonali Deshmukh	Subject Expert	
4	Mr. Sumeet Kakroo	Industry Expert	
5	Ms. Jyoti Sharma	Alumni	
6	Prof. Ashwini Kulkarni	Chairman and Internal Faculty	
7	Prof. Smita Borkar	Internal Faculty	



<b>Unit 2: Project Management Components</b>	<b>18</b>
<b>Chapter 3 : Scope Management</b> <ul style="list-style-type: none"> <li>• Strategic planning</li> <li>• Scope planning, definition</li> <li>• Verification and control</li> </ul>	4
<b>Chapter 4 : Time management</b> <ul style="list-style-type: none"> <li>• Activity planning</li> <li>• Schedule development and control</li> </ul>	2
<b>Chapter 5 : Cost Management</b> <ul style="list-style-type: none"> <li>• Cost estimation and Control</li> </ul>	2
<b>Chapter 6 : Quality Management</b> <ul style="list-style-type: none"> <li>• Quality planning and assurance</li> </ul>	2
<b>Chapter 7 : Human Resource Management</b> <ul style="list-style-type: none"> <li>• Organizational planning</li> <li>• Staff acquisition</li> </ul>	2
<b>Chapter 8 : Communication Management</b> <ul style="list-style-type: none"> <li>• Information distribution</li> <li>• Reporting</li> </ul>	2
<b>Chapter 9 : Risk Management</b> <ul style="list-style-type: none"> <li>• Risk identification</li> <li>• Quantification and control</li> </ul>	2
<b>Chapter 10 : Procurement Management</b> <ul style="list-style-type: none"> <li>• Solicitation</li> <li>• Contract administration</li> </ul>	2

<b>Unit 3: Software Metrics</b>	<b>12</b>
<b>Chapter 11 : Software Metrics</b> <ul style="list-style-type: none"> <li>• The scope of software metrics</li> <li>• Software metrics data collection</li> <li>• Analyzing software data</li> <li>• Measuring size, structure, external attributes</li> </ul>	6
<b>Chapter 12 : Software Reliability</b> <ul style="list-style-type: none"> <li>• Measurement and prediction</li> <li>• Resource measurement</li> <li>• Productivity, teams and tools</li> </ul>	6

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<b>Unit 4: Measurement program and Quality Standards</b>	<b>10</b>
<b>Chapter 13 : Planning a measurement program</b>	<b>6</b>
<ul style="list-style-type: none"> <li>• What is metrics plan?</li> <li>• Developing goals, questions and metrics</li> <li>• Where and When: Mapping measures to activities</li> <li>• How: Measurement tools</li> <li>• Who: Measurers , analyst, tools revision plans</li> </ul>	<b>4</b>
<b>Chapter 14 : Quality Standards</b>	
<ul style="list-style-type: none"> <li>• CMM</li> <li>• PSP/TSP</li> </ul>	

**\*Contact Hours : 10 Hours.**

References books
1. Cenage Learning, Kathy Schwalbe , 6th Edition , <i>Information Technology Project Management</i> , ISBN-13 :9781111221751
2. International Thomson Computer Press ,Norman E. Fenton and Shari Lawrence Pfleeger, <i>Software Metrics: A rigorous and Practical Approach</i>
3. McGraw-Hill ,Roger S. Pressman <i>Software Engineering: A Practioner's Approach</i> ISBN: 9780071267823
4. Prentice hall, Robert B. Grady , <i>Practical Software Metrics for Project Management and Process Improvement</i> ISBN : 9780137203840

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