

Software Metrics & Project Management

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| Semester II | Subject Code: MS21903 | 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.

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| Unit 1: Introduction | 10 |
| Chapter 1 : Introduction to Project Management <ul style="list-style-type: none"> • What is a Project? • What is Project management? • Project phases and project life cycle • Organizational structure • Qualities of Project Manager | 4 |
| Chapter 2 : Project Management Components <ul style="list-style-type: none"> • Project Integration Management-Project plan development and execution • Change control • Configuration management | 6 |
| Unit 2: | 14 |
| Chapter 3 : Scope Management <ul style="list-style-type: none"> • Strategic planning • Scope planning, definition • Verification and control | 4 |
| Chapter 4 : Time management | 2 |

BOS Members:

Dr. Reena Bharathi (Subject Expert)

Dr. Manisha Bharambe (Subject Expert)

Dr. Jyoti Yadav (Subject Expert)

Mr Vishal Salke (Industry Expert)

Ms Amruta Nambiar (Alumni)

Prof. Ashwini Kulkarni (Chairman and Internal faculty)

Prof. Smita Borkar (Internal Faculty)



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| <ul style="list-style-type: none"> • Activity planning • Schedule development and control • GANTT Chart | |
| Chapter 5 : Cost Management <ul style="list-style-type: none"> • Cost estimation and Control • COCOMO Model • Basic COCOMO numerical | 2 |
| Chapter 6 : Quality Management <ul style="list-style-type: none"> • Quality planning and assurance | 2 |
| Chapter 7 : Human Resource Management <ul style="list-style-type: none"> • Organizational planning • Staff acquisition | 2 |
| Chapter 8 : Communication Management <ul style="list-style-type: none"> • Information distribution • Reporting | 2 |

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| Unit 3: | 10 |
| Chapter 9 : Risk Management <ul style="list-style-type: none"> • Risk identification • Quantification and control | 2 |
| Chapter 10 : Procurement Management <ul style="list-style-type: none"> • Solicitation management and control • Contract administration | 2 |
| Chapter 11 : Software Metrics <ul style="list-style-type: none"> • The scope of software metrics • Size- oriented metrics • Function oriented • Software metrics data collection • Analyzing software data | 6 |

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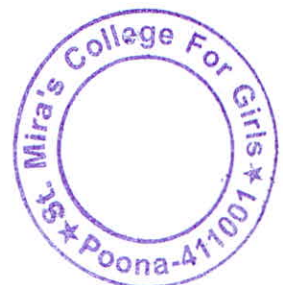
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 Bharambe
 Yadav
 Salke
 Nambiar

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| Unit 4: | 14 |
| Chapter 12 : Software Reliability <ul style="list-style-type: none"> • Measurement and prediction • Resource measurement • Productivity, teams and tools | 6 |
| Chapter 13 : Planning a measurement program <ul style="list-style-type: none"> • What is metrics plan? • Developing goals, questions and metrics • Where and When: Mapping measures to activities • How: Measurement tools • Who: Measurers , analyst, tools revision plans | 4 |
| Chapter 14 : Quality Standards <ul style="list-style-type: none"> • CMM • KPA's • PSP/TSP | 4 |

Contact Hours: 12 hours

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| References books |
| <ol style="list-style-type: none"> 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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