

<b>Devi Ahilya University, Indore, India Institute of Engineering &amp; Technology</b>				<b>III Year B.E. (Computer Engg.) (Full Time)</b>			
<b>Subject Code &amp; Name</b>	<b>Instructions Hours per Week</b>			<b>Credits</b>			
<b>SER5C2 SOFTWARE ENGINEERING</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Total</b>
<b>Duration of Theory Paper: 3 Hours</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>5</b>

**Objective:** To familiarize with the process of software development life cycle using the concepts of software engineering.

**Prerequisite:** Knowledge of a programming language, preferably object oriented and a mid-size project work.

## COURSE CONTENTS

### UNIT I

Software Engineering process- Basic concepts of System Design, System :Technical and Socio Technical System, Legacy System, Layered Technology, Software Process Model: Water Fall Model, Prototype Model, Incremental Model, Spiral Model, Agile Model, Role of Software Engineer, Software Qualities and nature requirements and Measurement, Technique; other Software Engineering issues like formality, modality, abstraction, reuse, generality etc.

### UNIT II

Critical System, UML, Software Process: Rational Unified Process, Software Requirements, Requirements Analysis and Principles, Requirement Engineering Process, SRS, SDS, End-user requirements, Design Modularity Design, object-orientation

### UNIT III

Software Design Process: Design principles, Design Concept: Analysis Model, Design Model, Modularity, Design Methods: Data Design, Architecture Design, Interface Design, Verification goods and Requirement – Testing, Debugging Analysis, Analysis software.

### UNIT IV

Software Testing Fundamentals, Black Box Testing, White Box Testing, Other Testing Methods ,Cohesion and Coupling, Verification and Validation ,Case Studies Software Engineering, Management planning control, Organization and Risk Management.

### UNIT V

Software Engineering Tools – System programs, Role of Programming languages; CASE Tools; Objected Oriented software Engineering; format Methods; Reengineering process ,Client Server Software Engineering.

**BOOKS RECOMMENDED:**

- [1] C.Gezzi, M. Jazayeri and D. Mandriohi *Fundament of software Engineering*, PHI 1996.
  - [2] R.S. Pressman, *software Engineering A Practitioner Approach*, 4/e McGraw-Hill International Edition 1997.
  - [3] P.Jalote, *An Integrated Approach to Software Engineering*, Naresa Publishing, Latest Edition.
  - [4] Ian Sommerville, *Software Engineering*, Pearson education, 7<sup>th</sup> edition
-