SOFTWARE ENGINERRING
[CORE COURSE]

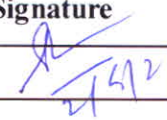| Semester: III	Credits: 3	Subject Code: BC32103	Lectures: 48

Course Outcomes:

At the end of this course ,the learner will be able to,

- Relate the concepts of System and types of system
- Analyze the Software Engineering concepts.
- Apply the applications of Software Engineering concepts and Design in Software development

Unit 1: Introduction to System Concepts and Software Engineering	10

- Definition
- Basic Components
- Elements of the System
- Types of System
- System Characteristics
- Definition of Software
- Characteristics of Software
- Types of Software
- Introduction to Software Engineering
- Definition of Software Engineering
- Need for Software Engineering
- Mc Call's Quality factors
- The Software Process
- Software Product and Process
- V& V Model

Unit 2: Software Development Life Cycle	08

- Introduction
- Activities of SDLC
- A Generic Process Model
- SDLC
- Waterfall Model
- Incremental Process Models
- Prototyping Model
- Spiral Model
- Agile Model
- Case Study on SDLC

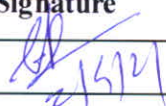| Board Of Studies	Name	Signature
Head of the Department	Asst. Prof. Smita Borkar	

Unit 3: Requirement Engineering with analysis and design tools	20

- Introduction of requirement engineering
    - Requirement Elicitation
    - Requirement Elaboration
    - Requirement Gathering
    - Feasibility study
    - Fact Finding Techniques
    - SRS Format
- Analysis and Design
    - Decision Tree and Decision Table
    - Data Flow Diagrams (DFD) (Up to 2nd level)
    - Data Dictionary
    - Elements of DD
    - Advantages and Disadvantages of DD
    - Input and Output Design
    - Structured Design Concepts
    - Structure Chart
    - Coupling and Cohesion
    - Compulsory Mini Project

Unit4: Software Testing, Maintenance and Software Re-Engineering	10

- Definition
- Software testing Process
- Unit Testing
- Integration Testing
- System Testing
- Maintenance definition and types
- Perfective maintenance
- Adaptive maintenance
- Corrective maintenance
- Software reengineering
- Reverse Engineering
- Restructuring and forward Engineering.

#12 hours for Library work, assignments practical or field work

Recommended Text Books:

- Pankaj Jalote's ,*Software Engineering*:, Wiley India, 2010
- S.Parthasarathy ,*System Analysis, Design and Introduction to Software Engineering*:, Master Academy,2009

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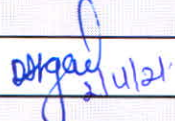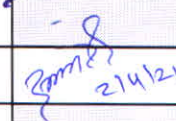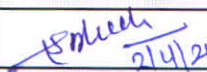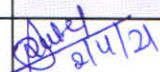
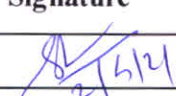## Reference Books:

- *System Analysis and Design*, Elias Awad, Galgotia Publication, Second Edition
- James A. Senn, *Analysis and Design of Information Systems(Second Edition)* - McGraw Hill
- Roger S. Pressman, *Software Engineering: A Practitioner's Approach*, McGraw hill International Editions 2010(Seventh Edition)

Websites:

https://www.tutorialspoint.com/
www.w3schools.com

Board Of Studies	Name	Signature	
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Faculty*	Prof Monika Rajguru	2/4/21	
Faculty*	Prof. Deepali Gupta		2/4/21
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Subject Expert (Outside SPPU)	Prof Sachin Bohite		2/4/21
VC Nominee	Prof Anjum Patel	2/4/21	
Industry Expert	Ms Shrutika Wayal		Shrutika 2/4/21
One Alumni***	Ms. Vidhi Thakkar		

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