B. Sc. IT (HONS.) 2020: 4th Semester				
Course	Credits-06		Total Marks- 90	
	Theory	Practical	Theory	Practical
BIT420C3: SOFTWARE ENGINEERING	04	02	60	30

THEORY: 4 CREDITS;   **MAX. MARKS: 60**   **MIN. MARKS: 24**

UNIT-I

Software process, SW Product, Characteristics of good SW Product, SW process models: waterfall, prototyping, RAD, incremental and generic spiral model, 4G Techniques.
SW requirements analysis, types of requirements and steps involved in SRA, SW requirements Specifications, guidelines and prototypes for good SRS.

UNIT-II

Structured analysis and design, representation techniques used data modeling (ER Diagrams)
Process Modeling (DFD), Behavioral modeling (State-transition Diagram)
Software design concepts and principals, procedural and data abstraction, top-down design, call-return architecture, structural partitioning, characterization of effective modular design (functional independence, Cohesion, Coupling), SW architecture styles (data-centered, data-flow and layered architectures).

UNIT-III

Software Testing: Need for SW Testing, testing principle, approaches to the design test cases, black-box And white-box testing, Phases in testing activity: unit, integration, validation and system tests, concepts of verification and validation.

UNIT-IV

Software project management concepts, project planning and resource estimation techniques, simple Boehm model, risk analysis and management, project scheduling and tracking, software quality assurance,SW configuration management concepts: baseline, version Id, Introduction to CASE tools, categories of commonly used CASE Tools.

PRACTICAL: 2 CREDITS;   **MAX. MARKS: 30**   **MIN. MARKS: 12**

Note: *The Practical Component shall be based on the Unit-I to Unit-IV*

BOOKS RECOMMENDED:

1. Software Engineering—Roger Pressman
2. Fundamentals of Software Engineering—Ghezzi , Jazayeri
3. Software Engineering—Ian Summerville