

GANPAT UNIVERSITY									
FACULTY OF ENGINEERING & TECHNOLOGY									
Programme	Diploma Engineering				Branch	INFORMATION TECHNOLOGY			
Semester	IV				Version	1.0.0.0			
Effective from Academic Year		2018-19			Effective for the batch Admitted in		June 2018		
Subject code	1CE2403		Subject Name		Fundamental of Software Design				
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total	CE	SEE	Total	
	L	TU	P	TW					
Credit	3	0	1	4		Theory	40	60	100
Hours	3	0	2	5		Practical	30	20	50

Pre-requisites:
Basic knowledge of Computer Software

Course Learning Outcomes:
<p>The course content should be taught and implemented with an aim to develop different skills leading to the achievement of the following competencies and course learning outcomes:</p> <ul style="list-style-type: none"> • Understand Software development approach to manage software. • Understand SDLC to develop Software. • Understand how to plan software. • Understand the SRS. • Understand how should be design. <p>Understand software testing.</p> <p>The practical should be carried out in such a manner that students are able to acquire different learning outcomes in cognitive, psychomotor and affective domain to demonstrate course learning outcomes.</p>

Course Content				
Name of UNIT	Unit Content	Unit Learning Outcomes	Marks	Hrs
UNIT – 1 Software Development Approaches	1.1. Introduction 1.2. Evolving Role of Software; 1.3. Software Characteristics; 1.4. Software Applications. 1.5. What is meant by Software Engineering?; Definitions of Software Engineering; Generic Framework activity and umbrella activity.	1.1. Introduction to Software engineering. 1.2. Describe the evolution of the software. 1.3. Describe the characteristic of the software. 1.4. State the software applications. 1.5. Describe the term software engineering.	5	4
UNIT – 2 Software Life Cycle Models	2.1. Software Development Life-cycle; 2.2. Software development Models 2.2.1.The Serial or Linear Sequential Development Model;	2.1. Describe the SDLC. 2.2. Describe different model in Software development. 2.3. State the difference between different model,	10	10

	<p>2.2.2.Iterative Development Model;</p> <p>2.2.3.The incremental Development Model;</p> <p>2.2.4.RAD model</p> <p>2.2.5.Spiral Model</p> <p>2.2.6.Prototype model</p> <p>2.3. Comparison of different Life Cycle Models</p>			
UNIT – 3 Requirement Analysis and Specification	<p>3.1. Requirement gathering and Analysis</p> <p>3.2. Software Requirement Specifications(SRS), Formal Specification Technique, Characteristics of good SRS</p>	<p>3.1. Describe requirement gathering and analysis.</p> <p>3.2. Describe SRS, formal specification technique and characteristic of good software.</p>	10	6
UNIT – 4 Software Planning	<p>4.1. Responsibilities of Software Project Manager:</p> <p>4.1.1.Metrics for Project Size Estimation - LOC(Lines of Code), Function Point Metric</p> <p>4.2. Project estimation Techniques-Using COCOMO Model, Halstead’s Software science (Token count)</p>	<p>4.1. Describe the responsibility of Software Project manager.</p> <p>4.2. Describe the project estimation using different methods.</p>	10	8
UNIT – 5 Software Design and Implementation	<p>5.1. Characteristics and features of good Software Design</p> <p>5.2. Cohesion and Coupling</p> <p>5.3. Software design Approaches-Function Oriented Design, Object Oriented Design</p> <p>5.4. DFD, ER Diagram, Activity Diagram and Use Case diagram, Gantt Chart</p> <p>5.5. Structured Coding Techniques, Coding Styles,</p> <p>5.6. documentation</p>	<p>5.1. Describe the characteristic of good software.</p> <p>5.2. Describe cohesion and coupling.</p> <p>5.3. Describe software design approach.</p> <p>5.4. Describe and state DFD,ER diagram, activity diagram and use case diagram.</p> <p>5.5. Describe the different types of coding methods.</p> <p>5.6. Describe the term documentation</p>	15	10
UNIT – 6 Software Testing	<p>6.1. Concept of Testing,</p> <p>6.2. Verification v/s Validations,</p> <p>6.3. Unit Testing, Black Box Testing, White Box Testing, Integration testing, System testing</p>	<p>6.1. Describe the concept of testing.</p> <p>6.2. State the difference between Verification and Validation.</p> <p>6.3. Describe the different software testing.</p>	10	7

List of Practical		
No.	Unit	Name of Practical
1	Unit -2	To build development model for software with proper explanation
2	Unit- 3	To construct the requirement for making the software.

3	Unit -3	To build SRS Documents for software.
4	Unit-5	To Design DFD diagram for software.
5	Unit -5	Design ER diagram for Software.
6	Unit-5	Design activity diagram for software.
7	Uni-5t	Design use case diagram for software.
8	Unit-5	Design Gantt chart for Software.
9	Unit-6	Construct the Suitable test case for system

List of Instruments / Equipment / Trainer Board	
1	Microsoft Project

List of Reference Books			
No	Title of Reference Books	Authors	Publication
1	Software Engineering: A Practitioner's Approach	Roger S Pressman	McGrawHills
2	Software Engineering	Ian Sommerville	Pearson
3	Fundamental of Software Engineering	Rajib Mall	BPH publication

Link of Learning Web Resource	
1	https://www.tutorialspoint.com/software_engineering/
2	https://www.javatpoint.com/software-engineering-tutorial