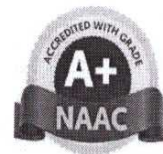


SHRI GNANAMBICA DEGREE COLLEGE: MADANAPALLE



(AUTONOMOUS)
Course 8: Software Engineering (MAJOR)
SEMESTER III
(W.E.F.2024-25)
Program: BCA (G)



Hours per week: 4

Credits: 3

Course Objectives:

The Objective of the course is to assist the student in understanding the basic theory of software engineering, and to apply these basic theoretical principles to a group software development project.

Course Outcomes:

1. Ability to gather and specify requirements of the software projects.
2. Ability to analyze software requirements with existing tools
3. Able to differentiate different testing methodologies
4. Able to understand and apply the basic project management practices in real life projects
5. Ability to working a team as well as independently on software projects

UNIT-I

Introduction to Software Engineering: Definitions Size Factors-Quality and Productivity Factors-Manual Issues. **Planning a software project:** Defining the problem-Developing a Solution Strategy-Planning the Development Process- Planning an Organization structure SDLC Models.

UNIT-II

Software Cost Estimation: Software cost factors, Software Cost. Estimation Techniques, Staffing level Estimation, Estimating Software Maintenance Costs, The Software Requirements, Specification Formal Specification Techniques-Languages and Processors for Requirements Specification.

UNIT-III

Software design: Fundamental Design Concepts-Modules and Modularization Criteria-Design Notations - Design Techniques-Detailed Design Considerations, Real-Time and Distributed System Design-Test Plans-Milestones, walk-throughs, and Inspections.

UNIT-IV

User interface design and real time systems: User interface design -Human factors - Human computer interaction- Human -Computer Interface design-Interface design- Interface standards.



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UNIT-V

Software quality and testing: Software Quality Assurance, Quality metrics, Software Reliability, Software testing, Path testing, Control Structures testing-Black Box testing, Integration, Validation and system testing-Reverse Engineering and Reengineering.

REFERENCEBOOKS:

1. R.Fairley, Software Engineering Concepts, Tata McGraw-Hill, 1997.
2. R.S.Pressman, Software Engineering, Fourth Ed., McGraw Hill, 1997.
3. Software Engineering, H.Sommerville Ian, Addison Wesley Pub. Co.
4. Software Engineering: An object Oriented Perspective by Braude, E.J., Willey, 2001



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SHRI GNANAMBICA DEGREE COLLEGE: MADANAPALLE



(AUTONOMOUS)
Course 8: Software Engineering (MAJOR)- Practicals
SEMESTER III
(W.E.F.2024-25)
Program: BCA (G)



Hours per week: 2

Credits: 1

List of Experiments

Case Studies:

1. Student Marks Analysis System
2. E-Commerce Management System
3. Inventory Control System
4. Food Delivery Management system
5. Logistics Management System

Choose any two of above case studies and do the following exercises for that Case Study

1. Write the complete problem statement
2. Write the software requirements specification document
3. Draw the entity relationship diagram
4. Draw the data flow diagrams
5. Draw use case diagrams
6. Draw activity diagrams for all use cases
7. Draw sequence diagrams for all use cases
8. Draw collaboration diagram
9. Assign objects in sequence diagrams to classes and make class diagram.

Note: 1. To draw data flow diagrams using Microsoft Visio Software, Smart Draw, etc...
2. To draw UML diagrams using Rational Rose Software, Star UML, etc.



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SHRI GNANAMBICA DEGREE COLLEGE: MADANAPALLE

(AUTONOMOUS)

Course 8: Software Engineering (MAJOR)

SEMESTER III

(W.E.F.2024-25)

Program: BCA (All Groups)

Question Paper – Blue Print

Time : 3 Hrs

Marks : 70

PART-A

Answer any 4 of the 8. Each Question Carries 5 marks.

(4 x 5 =20)

1. Question
2. Question
3. Question
4. Question
5. Question
6. Question
7. Question
8. Question

PART-B

Answer one from each unit. Each Question Carries 10 marks.

(5X10=50)

UNIT 1

9. Question

OR

10. Question

UNIT 2

11. Question

OR

12. Question

UNIT 3

13. Question

OR

14. Question

UNIT 4

15. Question

OR

16. Question

UNIT 5

17. Question

OR

18. Question



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