Discipline:

Science ☑   Arts, Humanities & Social Science ☐

Commerce ☐   BBA ☐   BCA ☐

Subject Name: Computer Science

Subject Code: MDC002   (Will be provided by the University)

Semester:

Semester I ☐   Semester II ☑   Semester III ☐   Semester IV ☐

Semester V ☐   Semester VI ☐   Semester VII ☐   Semester VIII ☐

Course Name: Software Development

Course Code: MDC002   (Will be provided by the University)

Course Credit: Theoretical 3   Practical/Tutorial 0

Marks Allotted: Theoretical 60   Practical/Tutorial 0

Continuing Evaluation 10   Attendance 05

Course Type (tick the correct alternatives):

Major Core ☐   AEC ☐

Interdisciplinary/ DSE ☑   SEC ☐

Minor / Generic Elective ☐   VAC ☐

Research Project/Dissertation ☐   Vocational ☐

Is the course focused on employability / entrepreneurship?   YES ☑ NO ☐

Is the course focused on imparting life skill?   YES ☐ NO ☑

Is the course based on Activity ?   YES ☑ NO ☐

Remarks by Chairman, UG BOS, if any

The syllabus may be modified from time to time on the basis of the requirements in future.

UG BOS Meeting Reference Number: 582/UG-24   Date: 24/01/2024

Prepared by CIRM

Course Code: MDC002

Course Name: Software Development

Brief Course Description:

Software Development, enable students to demonstrate their competence to analyze, design, develop, and test software systems. Student(s) will create, implement, and present a software project plan that includes the following work products: software requirements specification, design specification document, code, unit tests and project system test plan to create an operational system.

Prerequisite(s) and/or Note(s):

(1) No prerequisites for this course.
(2) Note(s): Syllabus changes yearly and may be modified during the term itself, depending on the circumstances. However, students will be evaluated only on the basis of topics covered in the course.

Course Objectives:

Knowledge acquired:

1. Defining the project purpose and the scope of work to be conducted.
2. Planning the project deliverable items and the respective timeline with milestones.

Skills gained:

1. Generating a software development specification document that includes all the specified requirements correctly written using the specified template, and the requirements are consistent across all functional areas

Competency Developed:

1. Developing a software design specification that includes high level architecture diagram of the system and appropriate component breakdown.
2. Providing detailed function descriptions and indications of all function interactions.

Course Syllabus Overview:

MDC002: Software Development	[Credits:3 Lectures: 45]

Unit 1: Software Basics (10 Lectures)

Software Engineering definition, Software Characteristics, Types of software: system software, application software, utility software, difference between a software and a program, Goals of software engineering, Software crisis.

Unit 2: Software Requirements (10 Lectures)

Software requirements, requirement gathering techniques, requirement analysis, Need for SRS, Characteristics and Components of SRS.

Unit 3: Software Development Life Cycle models (15 Lectures)

Generic SDLC model, Waterfall model, Iterative waterfall model, Prototype model, Spiral model, RAD model, comparison of software models.

Unit 4: Software Design (05 Lectures)

Basic principles of software design, modularity, cohesion and coupling, DFD model, verification and validation.

Unit 5: Software Testing (05 Lectures)

Software Testing Fundamentals, Black-Box Testing, White-Box Testing and their type.

Suggested Readings:

1. R.S. Pressman, Software Engineering: A Practitioner's Approach (7th Edition), McGraw-Hill, 2009.

2. P. Jalote, An Integrated Approach to Software Engineering (2nd Edition), Narosa Publishing House, 2003.

3. K.K. Aggarwal and Y. Singh, Software Engineering (2nd Edition), New Age International Publishers, 2008.

4. I. Sommerville, Software Engineering (8th edition), Addison Wesley, 2006.

5. D. Bell, Software Engineering for Students (4th Edition), Addison-Wesley, 2005.

6. R. Mall, Fundamentals of Software Engineering (2nd Edition), Prentice-Hall of India, 2004.