UNIVERSITY OF MADRAS

B.Sc. DEGREE COURSE IN COMPUTER SCIENCE
SYLLABUS WITH EFFECT FROM 2020-2021

BCE-CSC14

CORE-XIV: SOFTWARE ENGINEERING

(Common paper to B.Sc.Software Applications-V Sem. & B.C.A.-V Sem.)

III YEAR / VI SEM

OBJECTIVES:

- To introduce the software development life cycles
- To introduce concepts related to structured and objected oriented analysis & design co
- To provide an insight into UML and software testing techniques

OUTCOMES:

- The students should be able to specify software requirements, design the software using tools
- To write test cases using different testing techniques.

UNIT- I

Introduction – Evolution – Software Development projects – Emergence of Software Engineering. Software Life cycle models – Waterfall model – Rapid Application Development – Agile Model – Spiral Model

UNIT- II

Requirement Analysis and Specification – Gathering and Analysis – SRS – Formal System Specification

UNIT- III

Software Design – Overview – Characteristics – Cohesion & Coupling – Layered design – Approaches Function Oriented Design – Structured Analysis – DFD – Structured Design – Detailed design

UNIT- IV

Object Modeling using UML – OO concepts – UML – Diagrams – Use case, Class, Interaction, Activity, State Chart – Postscript

UNIT- V

Coding & Testing – coding – Review – Documentation – Testing – Black-box, White-box, Integration, OO Testing, Smoke testing.

TEXT BOOK:

1. Rajib Mall, "*Fundamentals of Software Engineering*", PHI 2018, 5th Edition.

REFERENCE BOOKS:

1. Roger S. Pressman, "*Software Engineering - A Practitioner's Approach*", McGraw Hill 2010, 7th Edition.
2. Pankaj Jalote, "*An Integrated Approach to Software Engineering*", Narosa Publishing House 2011, 3rd Edition.

WEB REFERENCES:

- NPTEL online course – Software Engineering - https://nptel.ac.in/courses/106105182/