MAHENDRA ENGINEERING COLLEGE (Autonomous)-Syllabus					R 2015
DEPARTMENT	INFORMATION TECHNOLOGY		Programme Code & Name		IT

SEMESTER-IV

COURSE CODE	COURSE NAME	PERIODS /WEEK			CREDIT	MAXIMUM MARKS
		L	T	P	C	
15IT14403	SOFTWARE ENGINEERING	3	0	0	3	100

Objectives

- To gain knowledge of fundamental concepts of software engineering and design process.
- To understand different notion of complexity at both the module and system level.
- To be aware of some widely known design methods, quality assurance and standards.
- To understand the role and contents of testing activities in different life cycle phases.

UNIT-I INTRODUCTION — 9

S/W Engineering Paradigm - Life cycle models - Water fall - Incremental - Spiral - Evolutionary - Prototyping - Object Oriented System Engineering - Computer Based system - Verification - Validation - Life Cycle Process - Development process - System Engineering Hierarchy - Introduction to CMM - Levels of CMM.

UNIT-II SOFTWARE ENGINEERING PROCESS — 9

Functional And Non-Functional - User - System - Requirement Engineering Process - Feasibility Studies - Requirements - Elicitation - Validation and management - Fundamental of requirement analysis - Analysis principles- Software prototyping - Prototyping in the Software Process - Rapid Prototyping Techniques - User Interface Prototyping - Software Document Analysis and Modeling - Data - Functional and Behavioral Models – Structured Analysis and Data Dictionary.

UNIT-III DESIGN PROCESS — 9

Design process - Modular design - Design heuristic - Design model and Document - Architectural Design - Software architecture - Data design - Architecture data - Transform and Transaction Mapping - User Interface Design - User interface - Design principles.

UNIT-IV LEVELS OF TESTING — 9

Levels - Software Testing Fundamentals - Types of s/w test - White box testing- Basis Path Testing - Black Box Testing - Control Structure Testing - Regression Testing - Testing in the large- S/W Testing Strategies – Strategic Approach and Issues - UNIT Testing - Integration Testing – Validation Testing - System Testing and Debugging. Case Studies - Writing Black Box and White Box Testing

UNIT-V QUALITY ASSURANCE — 9

Process and product quality – Quality assurance and Standards – Quality Planning and Control – Software Metrics – Process Improvement – Software Configuration Management- SQA Trustees and Committees.

TOTAL PERIODS — 45

TEXT BOOKS :

1. Roger S. Pressman, "Software Engineering – A Practitioner's Approach", Sixth Edition, McGraw-Hill International Edition, 2005.

REFERENCE BOOKS:

1. Watts S.Humphrey,"A Discipline for Software Engineering", Pearson Education, 2007.
2. James F Peters and Witold Pedrycz,"Software Engineering, An Engineering Approach", Wiley-India, 2007.
3. Stephen R.Schach, "Software Engineering", Tata McGraw-Hill Publishing Company Limited, 2007.
4. S.A.Kelkar,"Software Engineering", Prentice Hall of India Pvt, 2007.