VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT
M.Sc. (I.T.) [Five Years Integrated Course]
M.Sc. (Information Technology)
1st Semester Syllabus

Effective From July-2003

Paper No : 703
Paper Title : Software Engineering.

[L : 4, P : 0 Hrs]

1. Software Matrix & Project Planning
- 1.1. Software Measurements.
- 1.2. Metrics for Software Quality.
- 1.3. Project Planning Objectives.
- 1.4. Software Scope, Resources.
- 1.5. Decomposition Techniques.
- 1.6. Empirical Estimation Model.
- 1.7. Make-Buy Decision.

2. Risk Management
- 2.1. Software Risk & Risk Identification
- 2.2. Risk Identification, Projection, Migration, Monitoring, Management.

3. Project Scheduling & Tracking
- 3.1. Relationship between People & Effort.
- 3.2. Defining a Task set for the Software Project.
- 3.3. Selecting & Refining Software Engineering Tasks.
- 3.4. Scheduling.

4. Software Quality Assurance
- 4.1. Software Quality & Assurance.
- 4.2. Software Review.
- 4.3. Formal Technical Review.
- 4.4. Software Quality Metrics.
- 4.5. Formal Approaches to SQA.
- 4.6. Software Reliability.
- 4.7. ISO 9000 Quality Standards
  - 4.7.1. ISO Approach to Quality Assurance systems
  - 4.7.2. The ISO 9001 Standards.

5. Object Oriented Concepts & Principles
- 5.1. Object Oriented Paradigm & Concepts
- 5.2. Identifying the elements of an Object Model
- 5.3. Management of Object Oriented Software Projects

6. Object Oriented Analysis & Design
- 6.1. Domain Analysis
- 6.2. Generic Components of the OO Analysis & OOA Process.
- 6.3. Object Relationship Model, Object Behavior Model.
- 6.4. Generic Components of the OO Design & System Design Process.
- 6.5. Object Design Process & Design Pattern.

Main Readings :

1. Software Engineering A practitioner's approach - Roger S Pressman - McGraw Hill
2. Object Oriented Modeling Design – James Rumbaugh, Michael Blaha – PHI
3. An Integrated Approach to Software Engineering - Pankaj Jalote - Narosa Pub.

Supplementary Readings :

1. Software Engineering Concepts - Fairley R E - Mc-Graw Hill
2. Software Engineering - Lewis T G - Mc-Graw Hill
3. Fundamentals of Software Engineering – Carlo Ghezzi
4. IEEE standard for software user documentation, std 1063-1987
5. Software Engineering- A programming approach, D. Bell, I. Morrey, PHI