STANLEY
COLLEGE OF ENGINEERING & TECHNOLOGY FOR WOMEN
(Approved by AICTE , New Delhi | Affiliated to Osmania University ,Hyderabad)
Address : Chapel Road, Abids ,Hyderabad

SE-565

SOFTWARE RELIABILITY AND METRICS

UNIT-I

Overview of Software Reliability Engineering: Software Reliability Engineering, The Software Reliability Engineering Process, Fome Follower, Types of Test, Systems to Test.

Defining Necessary Reliability: Concepts, Procedure, Special Situations.

Developing Operational Profile: Concepts, Procedure, Special Situations.

UNIT-II

Preparing for Test: Concepts, Procedure, Test Efficiency, Increasing Test Efficiency by Run categories, A Graphical View of Test Selection.

Executing Test: Allocating Test Time, Invoking Test, Identifying System Failures, Special Situations.

Applying Failure Data to Guide Decisions: Certification Test, Reliability Growth Test, Special Situations.

UNIT-III

Deploying Software Reliability Engineering: Persuasion, Executing the Deployment.

Software Reliability Models: General Characteristics, Classification, Comparison, Recommended Models. The SRE Process – Step By Step, Using CASRE Software, User Experiences with SRE.

UNIT-IV

Fundamentals of Measurement: Measurements in Software Engineering – Scope of Software metrics – Measurements theory – Goal based Framework – Software Measurement Validation.

UNIT-V

Product Metrics: Measurement of Internet Product Attributes – Size and Structure – External Product Attributes – Measurement of Quality –Reliability Growth Model – Model Evaluation.

Suggested Reading:

1. John D. Musa, "*Software Reliability Engineering*", 1st Edition, Tata McGraw Hill, 1999.

2. John D. Musa, "*Software Reliability Engineering*", 2nd Edition, Tata McGraw Hill, 2005.

3. John D. Musa, Anthony Iannino, Kazuhira Okumoto, "*Software Reliability – Measurement, Prediction, Application, Series in Software Engineering and Technology*", McGraw Hill, 1987

4. Norman E . Fenton, Shari Lawrence Pfleeger, "*Software Metrics*", Second