SOFTWARE METRICS

Course Code: 13IT2102 **L P C**
4 0 3

Pre requisites: Software Engineering.

Course Educational Objectives:

The main objective of the course is to expose the students to different software metrics used in projects and their Management. Upon completion of this course, the student should be able to:

1. Analyze basics of Measurement.
2. Learn about different Methods of Data Collection.
3. Learn about measuring Internal and External Product Attributes.
4. Analyze software quality measurements and metrics.
5. Plan measurement programs.

Course Outcomes:

At the end of the course the student will be able to:

1. Analyze measurement in software engineering.
2. Classify software measures and data collection.
3. Analyze internal and external product attributes.
4. Learn about measurement and management techniques.
5. Analyze about customer satisfaction.

UNIT-I

Measurement: Measurement in Everyday Life, Measurement in Software Engineering, Scope of Software Metrics.

Frame Basics of Measurement: Representational Theory of Measurement, Measurement and Models, Measurement Scales and Scale Types.

UNIT-II

Work For Software Measurement: Classifying Software Measures, Applying Frame Work, Software Measurement Validation.

Software Methods in Data Collection: Good Data, Definition of Data, Collecting, Storing and Extracting Data.

UNIT-III

Measuring Internal Product Attributes: Measuring Size and Structure.

Measuring External Product Attributes: Modeling Software Quality, Measuring Aspects of Quality.

UNIT-IV

Measurement and Management: Planning a Measurement Program, Measurement in Practice.

UNIT-V

Customer Satisfaction: Empirical Research in Software Engineering, Measuring and Analyzing Customer Satisfaction: Customer Satisfaction Surveys, Analyzing Satisfaction Data, Satisfaction with Company.

Text Books:

1. Fenton, Pfleeger, *Software Metrics, A Rigorous and Practical Approach*, 2nd Edition, Thomson, 1998.
2. Stephen H. Kan, *Metrics & Models in Software Quality Engineering*, 2nd Edition, Addision-weseley Pearson Education, 2002.

References:

1. Sheppard, *Software Engineering Metrics*, 1st Edition, Mc GrawHill Publications, 1994.
2. Pertis et al, *Software Metrics, An Analysis and Evaluation,* 1st Edition, MIT Press, 1981.

Web references:

www.softwaremetrics.com/fpclass.html