SCHEME OF COURSE WORK

Course Details:

Course Title	**:SOFTWARE METRICS**		
Course Code	**:13IT2102**	**L T P C**	**:4 1 0 4**
Program:	**: M.Tech**		
Specialization:	**: Software Engineering**		
Semester	**:I**		
Prerequisites	**:Software Engineering**		
Courses to which it is a prerequisite	**:Software Quality Assurance and Testing**		

Course Outcomes (COs):

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

Program Outcomes (POs):

A graduate of mechanical engineering will be able to

1	Ability to plan and execute software project modules, testing and delivery mechanisms.
2	Ability to use industry ready modern technologies through advanced data structures, expertise in web technologies.
3	Ability to think critically on the software related issues to provide viable solutions.
4	Ability to solve software related problems effectively and efficiently.
5	Ability to conduct research on up-coming fields of software development and to innovate into new directions
6	Ability to manage a software team and to maintain financial records as per standards
7	Ability to effectively communicate with clients, peers and society at large.
8	Ability to take up lifelong learning to be in tune with the new software related technologies.
9	Ability to follow ethical practices in the software industry and accept social responsibility.
10	Ability to learn independently from mistakes and surge forwards with positive attitude

Course Outcome Versus **Program Outcomes:**

COs	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO-1	S	S		M		M						
CO-2	M	S	M	S		M			M			M
CO-3	S	M		M		M		M				
CO-4	M	S									M	
CO-5	M	M	S									

S - Strongly correlated, *M* - *Moderately* correlated, *Blank* - *No correlation*

Assessment Methods:	Assignment / Quiz / Seminar / Case Study / Mid-Test / End Exam

Teaching-Learning and Evaluation

Week	TOPIC / CONTENTS	Course Outcomes	Sample questions	TEACHING-LEARNING STRATEGY	Assessment Method & Schedule
1	Measurement in Everyday Life	CO-1	What is Measurement? How Measurement is used in daily life	▫ Lecture ▫ Demonstration	Assignment (Week 1 - 8) Mid-Test 1 (Week 9)
2	Measurement in Software Engineering	CO-1	Define Measurement with respect to software Engineering	▫ Lecture / Discussion ▫ Problem solving	Mid-Test 1 (Week 9)
3	Scope of Software Metrics.	CO-1	Describe the properties of software metrics	▫ Lecture ▫ Problem solving	Assignment (Week 1 - 8) Mid-Test 1 (Week 9)
4	Representational Theory of Measurement	CO-2	Elaborate theory of Measurement	▫ Lecture	Assignment (Week 1 - 8) Mid-Test 1 (Week 9)
5	Measurement and Models, Measurement Scales and Scale Types	CO-3	List Different types of Models and its Measurements	▫ Lecture ▫ Problem solving	Assignment (Week 1 - 8) Mid-Test 1 (Week 9)
6	Classifying Software Measures	CO-3	Write down the Classification of Software Measures	▫ Lecture / Discussion ▫ Problem solving	Assignment (Week 1 - 8) Mid-Test 1 (Week 9)
7	Applying Frame Work	CO-2	Explain the Framework	▫ Lecture ▫ Problem solving	QUIZ(Week 1-5) Mid-Test 1 (Week 9)
8	Software Measurement Validation	CO-3	Different Techinques for software Measurement Validation	▫ Lecture / Discussion ▫ Problem solving	Assignment (Week 1 - 8) Mid-Test 1 (Week 9)
9	**Mid-Test 1**				
10	Good Data, Definition of Data, Collecting Data	CO-2	How to Collect Data for a Project	▫ Lecture ▫ Discussion ▫ Problem solving	Mid-Test 2 (Week 18)
11	Storing and Extracting Data	CO-2	How to store and Extract data from a Database	▫ Lecture ▫ Discussion	Mid-Test 2 (Week 18)
12	Measuring Size and Structure	CO-3	What are the methods for measuring size	▫ Lecture ▫ Problem solving	Mid-Test 2 (Week 18) Assignment (Week 10-16)
13	Modeling Software Quality, Measuring Aspects of Quality	CO-4	List different aspects of quality	▫ Lecture ▫ Discussion	Assignment (Week 10- 16)
14	Planning a Measurement Program, Measurement in Practice.	CO-5	How to use Measurement in projects	▫ Lecture	Seminar Mid-Test 2 (Week 18)
15	Empirical Research in Software Engineering	CO-5	Write about properties of empirical research	▫ Lecture ▫ Discussion Problem solving	Seminar (Week 10-16) Mid-Test 2 (Week 18)
16	Measuring and Analyzing Customer Satisfaction	CO-4	How to Analyze customer satisfaction	▫ Lecture ▫ Discussion	Seminar

17	Analyzing Satisfaction Data, Satisfaction with Company	CO-5	Write different Methods for Analysing Data	▫ Lecture	Assignment (Week 10- 16) Mid-Test 2 (Week 18)
18	**Mid-Test 2**				
19/20	**END EXAM**				