Syllabus for Diploma Engineering

All Branches

Semester – I

Subject Name: Mathematics-I

Subject Code: 09MA1101

Objective: Students are intended to know about the basic concepts and principles of Mathematics as a tool to analyze the Engineering problems. Mathematics being language of Science and Engineering its basic knowledge would empower student to solve Engineering problems by its application.

Course Outcomes: After completion of this course, student will be able to

- learn units and apply them in Engineering applications.
- aware percentage and apply it in Engineering applications.
- calculate quantitative problems of Engineering using concepts of Ratio and Proportion.
- evaluate problems using concepts of Fractions.
- solve the algebraic equations using square roots, which is important in algebra and have application in Geometry.

Pre-requisite of course: NA.

Teaching and Examination Scheme

Teaching Scheme (Hours)			Credits	Theory Marks			Tutorial/ Practical Marks		Total Marks
Theory	Tutorial	Practical		ESE	IA	CSE	Viva	Term work	
2	4	0	4	50	30	20	25	25	150

Contents

Unit	Topics	Lab Hours	Lecture Hours
1	**Unit:** •Mass and time •CGS, MKS/SI unit •Systems of unit- FPS •Conversion of units •Unit of length •Related problems	8	4
2	**Fractions:** •Decimal fraction •L.C.M., H.C.F. •Multiplication and Division of Fractions and Decimals •Conversion of Fraction to Decimal and vice versa •Application of Scientific Calculator.	8	6
3	**Square Root** •Square and square roots •Method of square roots •Application of Scientific Calculator. •Indices	6	4
4	**Ratio & Proportion:** •Concepts •Simple calculation on related problems.	8	4
5	**Percentage:** •Introduction •Methods of calculation. •Changing percentage to Decimal and fraction and vice versa	8	4
Total		**38**	**22**

List of Tutorials:

	LAB HOURS
UNIT-1	
•Mass and time •CGS, MKS/SI unit	2
•Systems of unit- FPS	2
•Conversion of units	2
•Unit of length	2
UNIT-2	
•Decimal fraction	2
•Multiplication and Division of Fractions and Decimals	2
•L.C.M., H.C.F.	2
•Conversion of Fraction to Decimal and vice versa •Application of Scientific Calculator.	2

UNIT-3	
•Square and square roots	**2**
•Method of square roots	**2**
•Application of Scientific Calculator.	**2**
UNIT-4	
•Examples of Ratio	**4**
•Examples of Proportion	**4**
UNIT-5	
•Methods of calculation.	**4**
•Changing percentage to Decimal and fraction and vice versa	**4**
TOTAL	**38**

References Links:

1. http://study.com/academi/lession
2. http://mathforum.org/library/drmath/sets/mid_ratio.html
3. http://www.homeschoolmath.net/teaching/proportions.php

Suggested Theory distribution:

The suggested theory distribution as per Bloom's taxonomy is as per follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Remember	Understand	Apply	Analyze
30%	30%	30%	10%

Instructional Method:

a. The course delivery method will depend upon the requirement of content and need of the students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, Quiz, brainstorming.

b. The internal evaluation will be done on the basis of continuous evaluation of students in the class-room.

Supplementary Resources:

Plotting software:

- mathworld.wolfram.com