DIRECTORATE OF TECHNICAL EDUCATION

DIPLOMA IN MECHANICAL ENGINEERING

M SCHEME

2015 -2016 onwards

II YEAR

III SEMESTER

32033 – MACHINE DRAWING

CURRICULUM DEVELOPMENT CENTRE

M-SCHEME

(Implements from the Academic year 2015-2016 onwards)

Course Name : DIPLOMA IN MECHANICAL ENGINEERING

Course Code : 1020

Subject Code : 32033

Semester : III

Subject Title : **MACHINE DRAWING**

TEACHING AND SCHEME OF EXAMINATIONS:

No. of Weeks per Semester: 15 Weeks

Subject	Instructions		Examination			
	Hours /Week	Hours/ Semester	Marks			Duration
Machine Drawing	4	60	Internal Assessment	Board Examination	Total	3 Hrs
			25	75	100	

Topics and Allocation of Hours:

Unit	Topics	Hours
I	Sectional Views	5
II	Limits, Fits and Tolerances	5
III	Surface Texture	5
IV	Keys, Screw threads and Threaded fasteners	5
V	Assemble drawing	33
	TEST AND REVISION	7
	Total	60

RATIONALE:

Manufacturing of various parts start from the basic drawing of components. The assembly of components is also carried out from the drawing. So drawing is an important subject to be studied by the students to carry and complete the production and assembly process successfully.

OBJECTIVES:

- Appreciate the need for sectional view and types of sections.
- Draw sectional views using different types of sections.
- Explain the use of threaded fasteners and the types of threads.
- Compare hole basis system with shaft basis system.
- Select different types of fits and tolerance for various types of mating parts.
- Appreciate the importance of fits and tolerance.

MACHINE DRAWING

DETAILED SYLLABUS

Contents: Theory

Unit	Name of the Topic	Hours
I	**SECTIONAL VIEWS** Review of sectioning – Conventions showing the section – symbolic representation of cutting plane- types of section – full section, half section, offset section, revolved section, broken section, removed section – section lining.	5
II	**LIMITS, FITS AND TOLERANCES** Tolerances – Allowances – Unilateral and Bilateral tolerances. Limits – Methods of tolerances – Indication of tolerances on linear dimension of drawings – Geometrical tolerances – application – Fits – Classifications of fits – Selection of fits – examples	5
III	**SURFACE TEXTURE** Surface texture – importance – controlled and uncontrolled surfaces – Roughness – Waviness – lay – Machining symbols	5
IV	**KEYS, SCREW THREADS AND THREADED FASTENERS** Types of fasteners – temporary fasteners – keys – classification of keys – Heavy duty keys – light duty keys. Screw thread – Nomenclature – different types of thread profiles – threads in sections – threaded fasteners – bolts – nuts – through bolt – tap bolt, stud bolt – set screw – cap screws – machine screws – foundation bolts	5

V MANUAL DRAWING PRACTICE **33**

Detailed drawings of following machine parts are given to students to assemble and draw the Elevations / Sectional elevations / Plan / and Side views with dimensioning and bill of materials

1. Sleeve & Cotter joint
2. Knuckle joint
3. Screw Jack
4. Foot step bearing
5. Plummer Block
6. Universal Coupling
7. Simple Eccentric
8. Machine Vice
9. Protected type flanged coupling
10. Swivel bearing.

Books:

1) Machine Drawing, P.S. Gill, Katsan Publishing House, Ludiana
2) A Text book of Engineering Drawing, R.B. Gupta, Satya Prakasan, Technical India Publications, New Delhi
3) Mechanical Draughtsmanship, G.L. Tamta, Dhanpat Rai & Sons, Delhi
4) Geometrical and Machine Drawing, N.D. Bhatt, Cheroter book stalls, Anand, West Railway
5) Engineering Drawing, D.N. Ghose, Dhanpat Rai & Sons, Delhi

BOARD EXAMINATIONS
Question Pattern

Time: 3 Hrs **Max Marks : 75**

Note: All the questions will be answered in drawing sheet only

PART A: (7 x 5 = 35)

Theory questions: (1 TO 8)

Two questions from each unit (I to IV) will be asked.

Answer any seven questions from the given eight questions.

PART B: 40 Marks (Either A or B.)

Answer any one question by selecting either A or B.

9. A. Assemble and Draw any two views and bill of materials.

(OR)

B. Assemble and Draw any two views and bill of material