COURSE TITLE : PRODUCTION DRAWING
COURSE CODE : 4026
COURSE CATEGORY : A
PERIODS/ WEEK : 4
PERIODS/ SEMESTER : 60
CREDIT : 3

TIME SCHEDULE

MODULE	TOPIC	PERIODS
1	Limits, Fits and tolerances.	14
2	Surface texture and roughness.	13
3	Geometrical tolerance and operation chart.	12
4	Shop floor drawing and interpretation of drawing.	21
TOTAL		60

COURSE OUTCOME :

Sl.No.	Sub	Student Will Be Able To
1	1	Understand the limits, Fits and tolerances.
	2	Know the surface texture and roughness.
	3	Comprehend the geometrical tolerances.
	4	Know the preparation of operation chart.
	5	Interpret and prepare of shop floor drawings.

SPECIFIC OUTCOME

MODULE I

1.1 Need of preparing a production drawing - components of a production drawing.
1.2 Limits, Fits and Tolerances
1.3 Definition of limits, fits and tolerances. Geometrical tolerance - Characteristics of geometrical tolerance – Dimensional tolerance – Systems of fits-problems relating Hole basis and Shaft basis system and schematic diagrams- Select dimensions from B. I. S. Tables to obtain clearance, transition and interference fit for a given set of mating parts. Selection of fits and tolerances form B. I. S. tables.

MODULE II

2.1 Surface Roughness

2.2 Surface roughness terminology- surface roughness values, Grades and symbols. Symbols indicating surface texture – Relation between surface finish and manufacturing processes- Symbols representing direction of lay.

MODULE III

3.1 Interpretation of Drawings

3.2 Exercises in identifying the type of production, extracting important functional dimensions, checking the number of parts in an assembly. Checking and listing missing dimensions. Identifying the sectional views.

3.3 Shop floor drawing

The main objective of this subject is to enable the student to prepare drawing suitable or relevant to the production of the component (s) as represented by these drawings. Another objective is to develop the ability among students to read and interpret a given production drawing for the purpose of specifying the materials, the particular process of production, the type of tools needed to obtain the accuracy and surface finish specified by the designer and to identify those parts that are standard components that could be purchased from the market and to specify them as per commercial/ B. I. S. standards for purchase. In order to develop these abilities among students, the use of actual production drawing from the local industries is of vital importance. Traditional or academic exercises from books may not help to achieve these objectives.

Note:- It is suggested that the exercises can be given to the students for the development of the abilities and skills mentioned below:

Prepare the relevant views of the parts of a given assembly drawing needed for the purpose of production

Dimension the views obtained in 1, with relevant notes and indications as to the limits/tolerances, surface finish needed. Details of specific processes and the conventional / symbolic representation (like heat treatment, welding, counter boring etc) with reference to the function of the part in the whole assembly .

Indicate the process of production, specification of relevant tools to obtain the accuracy, finish and specification of materials as per commercial/ B. I. S. standard, given the production drawing of actual parts Identify those parts that are standard components that can be procured directly from the market, from a given production drawing and specify the part as per commercial/ B. I. S. standards for procurements

Specify the type of measuring instrument (s) to be used to check the prescribed accuracy

Exercises in -preparation of detailed production drawings as per BIS standard of simple machine parts such as Slip Bush, Socket and Spigot Joint, Sleeve And Cotter Joint, Over Hung Crank, Oldham's Coupling, screw jack, c clamp, 3. Connecting rod - I.C. Engine (type-1and 2)

MODULE IV

4.1 Process charts

4.2 Different types-Understand various machining processes-Calculation of weight per piece-Preparation of Operation Chart.

Exercises in preparation of Operation charts for

Locating pin,
Cylindrical Pin,
Stud bolt.

GENERAL INFORMATION :

Note – Guidance for setting question paper.
MODULE I – 20 marks
MODULE II – 10 marks
MODULE III – 50 marks
MODULE IV – 20 marks

100 marks

Use of BIS tables and charts are permitted for Examination.

TEXT BOOKS

1. Machine drawing - P.I. Vargheese
2. Machine drawing - K.C. John.

REFERENCE

1.Machine Drawing - P.S.Gill
2.A test book of Machine Drawing - V. Lakshmi Narayan.
3.Engineering Drawing - M.B Shah & B.C Rana.
4.Fundamentals of Machine Drawing, 2nd ed - Singh & Sah