

Course Number	Course Name	L-T-P-Credits	Year of Introduction
MP231	Production Engineering Drawing	0-0-3-1	2016
Prerequisite : Nil			
Course Objective <ul style="list-style-type: none"> To understand the principles and requirements of machine & production drawings. To enable preparation of individual and assembled parts of the machine as per the standards. 			
Syllabus Introduction to production drawing, IS standards, representation of machine components as per IS code: SP-46, Limits, fits and tolerance, Standard Fasteners & Rivets Introduction to CAD, part and assembly drawing in CAD, preparation of manufacturing Drawings.			
Expected Outcome Upon successful completion of the course the student will be able to prepare the detailed drawing of the assembled machine parts as per the standards individually.			
References <ol style="list-style-type: none"> Narayana K. L., Kannaiah P., VenkatataReaddy K., “Machine Drawing”, 2nd Edition, New age international Publishers, Delhi, 2008, ISBN 81-224-1917-8. Bhat N. D., Panchal , “Machine Drawing”, Charotar Pub. House, 2000. ISBN: 9380358466. Gill P. S., “A Text book of Machine Drawing”, Revised Edition K. Kataria and Sons, New Delhi, 2008, ISBN: 81-85749-79-5. PI Varghese & K C John 			
Course Plan			
Module	Contents	Hours	Sem. exam marks
I	Conventions in Machine Drawing Dimensioning technique for machine components, Conventional representation of machine components as per IS code: SP-46 such as screw threads, springs, gears, bearing, tapped holes, knurling parts, splined shafts, tapers, chamfers, countersunk and counter bores, keys, & welded joints, Surface Roughness. Introduction, terminology, machining symbols with all parameters, roughness values (Ra) and roughness grade numbers, indicating surface roughness on drawing. Limits Fits and Tolerances Definitions, types of tolerance, Systems of dimensional tolerances and fits, types of fits, fit system. Geometrical tolerances – Nomenclature, tolerance frame, types of geometrical	6	40%

	tolerances & their symbols, indicating geometric tolerances on drawing, calculation of fundamental deviations and tolerances		
II	Using CAD: Introduction to part and assembly drawing. Exercise on preparation of assembly drawings of cotter joint, knuckle joint, flange joint and flexible coupling.	12	Internal
First Internal Exam			
III	Joints: Threaded Fasteners : Thread terminology, thread forms, thread designations, single and multi-start threads, right and left hand threads, types of screws , bolts and nuts, nut locking arrangements using pins, washers & screws. Riveted joints: types of riveted joints, symbolic representation Foundation bolts	12	60%
Second Internal Exam			
IV	Exercise on preparation of assembly drawings of revolving centers, machine vice, screw jack and lathe tailstock using CAD	12	Internal
End semester Exam (Internal)			

Evaluation scheme

The evaluation of the course shall be,

1. Internal evaluation for 100 marks, first internal exam is for 25 marks from module- I, second internal exam for 25 marks from Module III and 50 marks for the CAD practical exam.
2. The first and second internal quiz shall be of one hour duration. CAD practical exam shall be of 2 hours duration.

The end semester examination is of 2 hour duration for 50 marks and includes only the first and third modules.

Question Paper Pattern (End semester exam)

Total marks: 50 Time: 2 hrs

The question paper should consist of two parts

Part A

There should be 3 questions from module I

Each question carries 10 marks. Students have to answer any two questions out of 3

(2 x 10 marks =20 marks)

Part B

There should be 3 questions from module III

Each question carries 15 marks. Students have to answer any two questions out of 3

(2 x 15 marks =30 marks)