ME151- ENGINEERING DRAWINGS AND PROJECTION

CREDIT HOURS

3 Hours

CONTACT HOURS (Hours/week)

Lecture: 2 Hrs; Tutorial: 2 Hrs .

TEXT BOOK

Engineering Drawing Book prepared and edited from several related books.

- S. Bogolyulov a. Voinor "Engineering Drawing", Mir publishers, Latest edition.
- Thomas E. French "Eng. Drawing & Graphics Techniques", McGraw – Hill Co., Latest edition.
- Sham Tickoo, "AutoCAD 2008: A problem solving approach", Autodesk Press 2007

COURSE DESCRIPTION

Drawing practices and techniques –Geometrical constructions - Dimensioning and free hand sketching – Methods of projection – Orthogonal projection — Sectioning and conventions – Intersection of geometrical surfaces and development – Standard metal sections and metal structures – Pictorial projection (Isometric) – Surface intersections – Perspective projection – An introduction to Computer Aided Drafting using AutoCAD.

PREREQUISITE:

None

RELATION OF COURSE TO PROGRAM

Required

COURSE INSTRUCTION OUTCOMES

The student will be able to:

Provide the basic information for engineering drawing and to present the different types of drawings in generic and basic forms with enough depth , communicate by means of engineering drawing and to relate the applications of drawing techniques to mechanical engineering practice.

TOPICS COVERED

- Drawing practices and techniques (Exercises on geometrical construction)
- Methods of object projection (Exercises on geometrical construction – Exercises on object projection)
- Orthogonal projection (Exercises on orthogonal projection)
- Missing views, dimensioning and free hand sketching (Exercises on projection and free hand sketching)
- Sectioning and conventions (Exercises on sectional views)
- Intersection of geometrical surfaces and development (Exercises in intersection of geometrical surfaces and development)

- Standard metal sections and metal structures (Exercises on metal structures)-Quiz
- Compound metal sections and welds (Exercises on metal structures)
- Isometric projection (Exercises on Isometric)
- Isometric projection & Surface intersections (Exercises on Isometric and surface intersections)
- Perspective projection (Exercises on Perspective projection)
- Perspective projection (Cont.) (Exercises on interior and exterior perspective projection) – Quiz
- Computer Aided drafting using AutoCAD (General Introduction)
- Drawing and editing commands in AutoCAD
- Writing texts, Dimensioning and viewing commands

CONTRIBUTION OF COURSE TO MEET THE REQUIREMENTS OF CRITERION 5:

Professional component Content			
Math and Basic Sciences	**Engineering Topics**	**General Education**	**Other**
		✓	

RELATIONSHIP OF COURSE TO STUDENT OUTCOMES:

Student Outcomes		Course aspects
A	An ability to apply knowledge of mathematics, science, and engineering	
B	An ability to design and conduct experiments, analyze and interpret data.	
C	An ability to design a system, component, or process to meet desired needs within realistic constraints such as economics, environmental, social, political, ethical, health, and safety, manufacturability, and sustainability	
D	An ability to function on multi-disciplinary teams.	
E	An ability to identify, formulate, and solve engineering problems	
F	An understanding of professional and ethical responsibility	
G	An ability to communicate effectively	g_1 g_2 g_3
H	The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and social content	
I	A recognition of the need for, and an ability to engage in life-long learning.	
J	A knowledge of contemporary issues within and outside the electrical engineering profession.	
k	An ability to use the techniques, skills, and modern engineering tools necessary for electrical engineering practice.	k