



National Institute of Technology Meghalaya
An Institute of National Importance

CURRICULUM

Programme	Bachelor of Technology in Mechanical Engineering	Year of Regulation	2018
Department	Mechanical Engineering	Semester	V

Course Code	Course Name	Credit Structure				Marks Distribution	
		L	T	P	C	Continuous Evaluation	Total
ME 355	Machine Design and Drawing	0	1	2	2	100	100

Course Objectives	To introduce limit, tolerance, fit, machining and surface finish symbols.	Course Outcomes	CO1	Able to interpret limit, tolerance, fit, machining and surfacefinish symbols while designing machine elements(Understanding)
	To develop an ability to draw and interpret projection and section view.		CO2	Able to draw different machine components using projection and section views (Applying)
	To develop an ability to develop CAD model of machine components.		CO3	Able to utilize CAD modelling software to develop 3D models of machine components (Applying)
	To develop an ability to recreate a machine component in CAD software using reverse engineering.		CO4	Able to build up assembly drawing making use of different component drawings (Applying)
			CO5	Able to develop 3D model of a machine component using reverse engineering (Analyzing)

No.	COs	Mapping with Program Outcomes (POs)												Mapping with PSOs		
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	CO1	0	0	3	0	0	3	0	3	0	3	1	2	1	0	0
2	CO2	0	0	3	0	3	3	0	3	0	3	1	2	1	0	0
3	CO3	0	0	3	0	3	3	0	3	0	3	1	2	1	0	0
4	CO4	0	0	3	0	3	3	0	3	0	3	1	2	1	0	0
5	CO5	0	0	3	0	3	3	0	3	2	3	1	2	1	0	0
6	CO6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SYLLABUS

No.	Content	Hours	COs
I	Limits, Tolerances and Fits, Surface Finish Fundamental deviations for holes and shafts. Types of fits, IS/ISO codes for limit and tolerances, Limits, tolerances and fits, Surface finish.	06	CO1
II	Orthographic Projection and Sectional View of Different types of Composite Bodies Bolts and nuts, Keys, Pins, Set screws, Riveted joints, Welded joints, Pipe joints, Flanged coupling, Flat and V-belt pulleys, Threads(internal and external), Plain journal bearing.	14	CO2 CO3
III	Symbols Symbols for surface roughness, Weldments, process flow, electrical and instrumentation units.	02	CO1
IV	Assembly and Part Drawings Couplings, bearings, I.C. Engine componentsetc.	15	CO3 CO4
V	Solid Modelling Introduction to solid modellers, solid modelling of various machine parts	12	CO2 CO3 CO4
VI	Project A drawing project on reverse engineering	09	CO5
Total Hours		58	

Essential Readings

1. N. D. Bhatt, "Machine Drawing", Forty-ninth Edition, Charotar Publishing House, 2014.
2. N. Sidheswar, P. Kanniah and V.V.S. Sastry, "Machine Drawing", First Edition, Tata McGraw Hill, 2001.

Supplementary Readings

1. A. Singh, "Machine Drawing", Second Edition, Tata McGraw Hill Publishing, 2012.
2. K. L. Narayana, P. Kanniah & K. V. Reddy, "Production Drawing", Third Edition, New Age International Publisher, 2010.
3. R.K. Dhawan, "A Text Book of Machine Drawing", Fifth Revised Edition, S. Chand & Company Publishing House, 2006.