

Course Number and Name												
BCM2L1 - BASIC CIVIL & MECHANICAL ENGINEERING PRACTICES LAB												
Credits and Contact Hours												
1 & 30												
Course Coordinator's Name												
Mr Karthik												
Course Description												
It provides exposure to the students with hands on experience on various basic Civil & Mechanical Engineering practices.												
Prerequisites						Co-requisites						
Nil						Basic Civil and Basic Mechanical Engineering						
Required, elective, or Selected elective (as per Table 5-1)												
Required												
Course Outcomes (COs)												
CO1 :Learn Basic concepts												
CO2 :Students will get exposure regarding pipe connection for pumps & turbines and to study the joint used in roofs, doors, windows and furniture.												
CO3 :Students will get exposure regarding smithy, foundry operations and in latest welding operations such as TIG, MIG, CO2, spot welding etc.,												
CO4 :Students will get hands on experience on basic welding techniques, machining and sheet metal works.												
CO5 :Students will get hands on experience on basic machining techniques												
CO6 :Students will get hands on experience on basic sheet metal techniques												
Student Outcomes (SOs) from Criterion 3 covered by this Course												
	cos/sos	A	b	c	D	E	f	g	h	i	j	k
	CO1	H	L									
	CO2				H							
	CO3					H	L	L				
	CO4		H				M		L			H
	CO5		H				M		L			H
	CO6		H				M		L			H
List of Topics Covered												
LIST OF EXPERIMENTS												
I. CIVIL ENGINEERING PRACTICE Buildings:												
Study of plumbing and carpentry components of residential and industrial buildings. Safety aspects.												
Plumbing Works:												
a) Study of pipeline joints, its location and functions: valves, taps, couplings, unions, reducers, elbows in household fittings.												
b) Study of pipe connections requirements for pumps and turbines.												
c) Preparation of plumbing line sketches for water supply and sewage works.												

d) Hands-on-exercise: Basic pipe connection of PVC pipes & G.I. Pipes – Mixed pipe material connection – Pipe connections with different joining components.

e) Demonstration of plumbing requirements of high-rise buildings.

Carpentry using Hand tools and Power tools:

a) Study of the joints in roofs, doors, windows and furniture.

b) Hands-on-exercise: Wood work, joints by sawing, planing and cutting. c) Preparation of half joints, Mortise and Tenon joints.

II. MECHANICAL ENGINEERING PRACTICE

Welding:

Preparation of butt joints, lap joints and tee joints by arc welding.

Basic Machining:

a) Simple Turning and Taper turning

b) Drilling Practice

Sheet Metal Work:

a) Forming & Bending:

b) Model making – Trays, funnels, etc.

c) Different type of joints.

d) Preparation of air-conditioning ducts.

Machine assembly practice:

a) Assembling, dismantling and Study of centrifugal pump

b) Assembling, dismantling and Study of air conditioner

c) Assembling, dismantling and Study of lathe.

Moulding :

a) Moulding Operations like gear and step cone pulley etc

Fitting :

a) Fitting Exercises – Preparation of square fitting and vee-Fitting models.

Demonstration :

a) Smithy Operations, Upsetting, Swaging, Setting down and bending. Example – Exercise- Production of hexagonal headed bolt.