

Course Number and Name												
BCMIL1 - BASIC CIVIL & MECHANICAL ENGINEERING PRACTICES LABORATORY												
Credits and Contact Hours												
1 & 30												
Course Coordinator's Name												
Mr.S.Pradeep Saravanan												
Text Books and References												
REFERENCES:												
1. K. Jeyachandran, S. Nararajan & S. Balasubramanian, "A Primer on Engineering Practices Laboratory", Anuradha Publications, (2007).												
2. T.Jeyapoovan, M. Saravanapandian & S. Pranitha, "Engineering Practices Lab Manual", Vikas Publishing House Pvt. Ltd. (2006)												
3. H. S. Bawa, "Workshop Practice", Tata McGraw-Hill Publishing Company Limited, (2007).												
4. A. Rajendra Prasad & P. M. M. S Sarma, "Workshop Practice", Sree Sai Publication, (2002).												
5. P. Kannaiah & K.L. Narayana, "Manual on Workshop Practice", Sci tech Publication, (1999).												
Course Description												
To provide exposure to the students with hands on experience on various basic Civil & Mechanical Engineering practices.												
Prerequisites						Co-requisites						
+2 Level Maths & Physical Science						NIL						
required, elective, or selected elective (as per Table 5-1)												
Course Outcomes (COs)												
CO1	an ability to apply knowledge of mathematics											
CO2	an ability to apply knowledge of science, and engineering											
CO3	Ability to design and conduct experiments, as well as to analyze and interpret data.											
CO4	an ability to function on multi-disciplinary teams											
CO5	To provide basic Knowledge of basic manufacturing process.											
CO6	ability to identify, formulate, and solve engineering problems											
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:

- a) 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, planning and cutting.
- c) Preparation of half joints, Mortise and Tenon joints.

II MECHANICAL ENGINEERING PRACTICE

Welding:

- a) 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
- e) Preparation of butt joints, lap joints and tee joints by arc welding

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 mould preparation for 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.
- b) Gas welding.