COURSE PREVIEW SUGGESTIONS & TIMELINE

Edit

Course Code	Course Title	L	T	P	J	S	C
XXXXXXXX	Workshop	0	0	4	0	0	2
Course Owner	Mechanical Engineering	Syllabus version				1.0	
Course Pre-requisite(s)		Contact hours				30	
Course Co-requisite(s)	-	Date Approved				-	
Alternate Exposure	-						

This course enables the students to familiarize with the basic fabrication practices and to explore the various devices, tools and equipment used. Hands-on exercise is provided in various trade sections. Essentially student should understand the labor involved, machinery or equipment necessary, time required to fabricate and should be able to estimate the cost of the product or job work which are fundamental tasks for engineering plans.

Course Objectives

1. Explain tools used in carpentry, fitting and sheet metal and practice procedure of doing experiments.
2. Make the students to learn types of basic electric circuit connections and PCBs.
3. Provide training to prepare FRP composites.
4. Train the students on preparing 3D plastics using injection molding.
5. Demonstrate on utilizing 3D printer for printing 3D objects

Topic	Type
3D printing Demonstartion	Experiment
Injection molding-Make any two plastic components using injection molding machine.	Experiment
Composites-Make any two FRP specimens using hand lay-up process	Experiment
Electrical Wiring-PCB (Including Soldering)	Experiment
Electrical Wiring-Wiring of Three phase motor	Experiment
Electrical Wiring- Wiring of lighting systems	Experiment
Electrical Wiring -Two-way switch connection	Experiment
Electrical Wiring -Parallel and series connection	Experiment
Fitting- V fit/Dove Tail fit/Semicircular fit (Any Two)	Experiment
Sheet Metal working - Taper tray/conical funnel/Elbow pipe (Any Two) (including soldering).	Experiment
Wood Working - Cross halving Joint/Dove Tail Joint/End Bridle Joint (Any two)	Experiment

Texbook(s)	Topics		
1. P. Kannaiah, K.L.Narayana,'Work shop Manual ',Second,Scitech Publications ,India,2007,978-81-837-1130-2	2-12-,2,3-3,3-4,7-5,8-6	2. B.L Juneja ,'Workshop Practice ',1,Cengage Learning ,Delhi,2015,978-81-315-2531-9	7-1, 8-3, 9-2, 17-10, 17-11

Additional Reading(s)	Topics
1. P K Mallick,'Fiber-Reinforced Composites: Materials, Manufacturing, and Design',Third,CBC Press,New York,2007,978-0-8493-4205-9	7-10,2-11

Journal(s)	Topics
Website(s)	Topics

	POs												PSOs		
CO	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	2								1	1		1	1		
2	1	1	2		1				1	1			1		
3	1	1	1				1		1	1			1		
4	1				1		1		1	1			1		
5	1	1	1	1	2				1	1			1	1	
Avg	1.2	1.0	1.3333333333333333	1.0	1.3333333333333333		1.0		1.0	1.0		1.0	1.0	1.0	

1-Low, 2- Medium and 3- High Correlation

Course Outcomes(COs)

1 Summarize application of different power tools (L1)
2 Develop different parts with metal sheet/wood working/fits in real time applications. (L3)
3 Demonstrate electrical circuits in various applications. (L2)
4 Prepare models using injection molding m/c and lay FRP composites. (L3)
5 Familiarize with 3D printer operations (L1)

Program Specific Outcomes(PSOs)

1 Competency to diagnosticate, interpret and unravel engineering problems in the domains of structural, thermal and fluid mechanics including those of allied engineering and multi-disciplinary streams.
2 Competency to forge the attitude of evolving state of the art concepts on emanating fields and ensuing progressive education imbibed with research perspective.
3 Competency to build the nation, by imparting technological inputs and managerial skills to become Technocrats and Entrepreneurs to converge and cater to the buoyant needs of the industry and society at a broader outset.

Program Objectives(POs)

1 Domain Knowledge
2 Problem analysis
3 Design/development of solutions
4 Conduct investigations of complex problems
5 Modern tool usage
6 Professionals and society
7 Environment and sustainability
8 Ethics
9 Individual or team work
10 Communication
11 Project management and finance
12 Life-long Learning

Instructional Plan Practical