

ENGINEERING WORKSHOP PRACTICE

I Semester: CSE / CSE (AI&ML) / CSE (DS) / CSE (CS) / CSIT / IT								
II Semester: ECE / EEE								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
AMEC04	Foundation	L	T	P	C	CIA	SEE	Total
		-	-	2	1	30	70	100
Contact Classes: Nil		Tutorial Classes: Nil		Practical Classes: 28		Total Classes: 28		
Prerequisite: There are no prerequisites to take this course.								
I. COURSE OVERVIEW:								
Engineering workshop Practice is intended to enhance the learning experience of the student about Engineering tools for cutting and measuring used in a workshop. Students are expected to gain experience in hands on training as well as knowledge to carry out a particular process for making a product using the basic manufacturing devices used in Workshop.								
II. COURSE OBJECTIVES:								
The students will try to learn:								
I Use of common instruments including measuring, marking and cutting tools in various types of manufacturing processes.								
II Basic manufacturing concepts used in carpentry, fitting, black-smithy and tin-smithy.								
III Demonstrating skills by converting electrical circuit's diagrams into electrical wiring.								
IV Compare experimental results with diagrammatic measurements and to determine the source of any apparent differences.								
III. COURSE OUTCOMES:								
After successful completion of the course, students should be able to:								
CO 1	Identify the conventional representation of materials and machine elements.							Apply
CO 2	Determine the ability to Produce Fitting jobs as per specified dimensions in addition to demonstrating proficiency with hand tools common to fitting.							Evaluate
CO 3	Create works of metal art using fire and furnace to convert given shape into useable elements using basic blacksmith techniques.							Create
CO 4	Organize the moulding techniques for producing casting of different and complex shapes using various patterns.							Apply
CO 5	Develop various engineering and household articles such as tin boxes, cans, funnels, ducts etc., from a flat sheet of metal.							Apply
CO 6	Compare various wiring diagrams using conduit system of wiring and Prepare different types of wiring joints on the given circuit boards using appropriate electrical tools.							Analyze
IV. SYLLABUS:								
Week-1: CARPENTRY-I								
Batch I: Preparation of Tenon joint as per given dimensions.								
Batch II: Preparation of Mortise joint as per given taper angle.								
Week -2: CARPENTRY-II								
Batch I: Preparation of dove tail joint as per given taper angle.								
Batch II: Preparation of lap joint as per given dimensions.								
Week-3: FITTING - I								
Batch I: Make a straight fit for given dimensions.								
Batch II: Make a square fit for given dimensions.								
Week-4: FITTING - II								
Batch I : Make a V fit for given dimensions								

Batch II: Make a semicircular fit for given dimensions.

Week-5: BLACKSMITHY- I

Batch I: Prepare S-bend for given MS rod using open hearth furnace.

Batch II: Prepare J-bend for given MS rod using open hearth furnace.

Week-6: BLACKSMITHY- II

Batch I: Prepare Fan hook for given dimensions.

Batch II: Prepare Round to Square for given dimensions

Week-7: MOULD PREPARATION

Batch I: Prepare a wheel flange mould using a given wooden pattern.

Batch II: Prepare a bearing housing using an aluminum pattern.

Week-8: MOULD PREPARATION

Batch I: Prepare a bearing housing using an aluminum pattern.

Batch II: Prepare a wheel flange mould using a given wooden pattern.

Week-9: TINSMITHY- I

Batch I: Prepare the development of a surface and make a rectangular tray for given dimensions.

Batch II: Prepare the development of a surface and make a round tin for given dimensions.

Week-10: TINSMITHY- II

Batch I: Prepare the development of a surface and make a Square Tin, for given dimensions.

Batch II: Prepare the development of a surface and make a Conical Funnel for given dimensions.

Week-11: ELECTRICAL WIRING-I

Batch I: Make an electrical connection of two bulbs connected in series.

Batch II: Make an electrical connection of two bulbs connected in parallel

Week-12: ELECTRICAL WIRING-II

Batch I: Make an electrical connection of one bulb controlled by two switches connected.

Batch II: Make an electrical connection of tube light.

V. REFERENCE BOOKS:

1. Hajra Choudhury S.K., Hajra Choudhury A.K. and Nirjhar Roy S.K., "Elements of Workshop Technology", Media promoters and publishers private limited, Mumbai, Vol. I 2008 and Vol. II 2010.
2. Kalpakjian S, Steven S. Schmid, "Manufacturing Engineering and Technology", Pearson Education India Edition, 4th Edition, 2002.
3. Gowri P. Hariharan, A. Suresh Babu, "Manufacturing Technology – I", Pearson Education, 2008.
4. Roy A. Lindberg, "Processes and Materials of Manufacture", Prentice Hall India, 4th Edition, 1998.
5. Rao P.N., "Manufacturing Technology", Vol. I and Vol. II, Tata McGraw-Hill House, 2017.

VI. WEB REFERENCES:

<http://www.iare.ac.in>