

BARGAON INSTITUTE OF TECHNOLOGY

LESSON PLAN FOR ACADEMIC SESSION

DISCIPLINE:	All Branches	SEMESTER:	1st / 2nd Semester
SUBJECT:	ENGINEERING WORKSHOP PRACTICE	COURSE CODE:	PR 5
NO. OF PERIODS:	02 / Week (32 Weeks)	TOTAL PERIODS:	64 Hours
PROGRESSIVE ASSMT:	50 Marks	END EXAM MARKS:	50 Marks (2 Hrs Duration)
NAME OF FACULTY:	_____	ACADEMIC PERIOD:	FROM _____ TO _____

COURSE OUTCOMES (COS)

- CO-1:** Acquire skills in basic engineering practice to identify, select and use various marking, measuring, holding, striking and cutting tools & equipment's and machines.
- CO-2:** Understand job drawing and complete jobs as per specifications in allotted time.
- CO-3:** Inspect the job for the desired dimensions and shape.
- CO-4:** Operate, control different machines and equipment's adopting safety practices.

DETAILED WEEKLY LESSON PLAN

SL NO	WEEK	CLASS DATE	CLASSES / DAY	TOPICS PLANNED TO BE COVERED	FACULTY SIGN
MODULE 1: FITTING SHOP					
01	01		1	General introduction to Workshop Safety Rules, Personal Protective Equipment (PPE) & Safety practices.	
			1	Demonstration of different fitting tools: Marking tools (Scribe, Punch, Surface Plate, Try Square).	
02	02		1	Demonstration of Measuring & Holding tools: Vernier Caliper, Micrometer, Bench Vice, V-Block.	
			1	Demonstration of Striking & Cutting tools: Hammers, Chisels, Hacksaws, Files (Types & Grades).	
03	03		1	Demonstration of Drilling Machines (Pillar/Bench Drilling Machine) and Power Tools.	
			1	Demonstration of fitting operations: Chipping, Filing techniques (Straight, Cross, Draw filing).	
04	04		1	Demonstration of Drilling, Tapping (Internal Threading), Sawing, and Cutting operations.	
			1	Fitting Job Preparation: Study of Fitting Job Drawing, Material selection, Raw material inspection.	
05	05		1	Fitting Practice: Layout marking, scribing lines, center punching on raw mild steel flat.	
			1	Fitting Practice: Hacksaw cutting to size and edge filing to achieve perpendicularity/squareness.	
06	06		1	Fitting Practice: Chipping and filing flat surfaces to specified dimensions.	
			1	Fitting Practice: Drilling holes using bench drill machine according to job drawing.	
07	07		1	Fitting Practice: Internal tapping operation using tap sets and tap wrench.	
			1	Fitting Job Completion: Final finishing, deburring, dimensional inspection, and submission.	
MODULE 2: WELDING SHOP					
08	08		1		

SL NO	WEEK	CLASS DATE	CLASSES / DAY	TOPICS PLANNED TO BE COVERED	FACULTY SIGN
				Introduction to Welding Shop: Safety precautions, Welding Shield, Apron, Gloves, Goggles.	
			1	Demonstration of different welding tools, power sources, transformers, and equipment.	
09	09		1	Demonstration on Arc Welding process: Electrodes, Arc striking, Bead formation, Current settings.	
			1	Demonstration on Gas Welding (Oxy-Acetylene welding equipment, Torches, Flame types).	
10	10		1	Demonstration on MIG (Metal Inert Gas) & MAG (Metal Active Gas) welding processes.	
			1	Demonstration on Gas Cutting processes and Rebuilding of broken parts with welding.	
11	11		1	Welding Job Preparation: Study of Job Drawing for Butt Joint & Lap Joint. Edge preparation.	
			1	Welding Job Practice: Tack welding and Arc welding execution on Butt Joint.	
12	12		1	Welding Job Practice: Arc welding execution on Lap Joint (Fillet Weld).	
			1	Welding Job Completion: Slag removal using Chipping Hammer, Wire brushing, and Inspection.	
MODULE 3: SHEET METAL WORKING					
13	13		1	Introduction to Sheet Metal Shop & Safety rules. Demonstration of sheet metal tools & machines.	
			1	Demonstration of Hand Snips, Shears, Mallets, Stakes, Punches, and Bending machines.	
14	14		1	Demonstration of operations: Sheet cutting, Bending, Edging, End Curling, and Lancing.	
			1	Demonstration of Joining operations: Soldering, Brazing, and Riveting processes.	
15	15		1	Sheet Metal Job Preparation: Development of surface pattern, marking layout on GI Sheet.	
			1	Sheet Metal Job Practice: Cutting sheet along layout lines using straight/ curved snips.	
16	16		1	Sheet Metal Job Practice: Bending, Folding edges, and Hemming/Seaming operations.	
			1	Sheet Metal Job Practice: Hole punching, Riveting, and Soldering joint practice.	
17	17		1	Sheet Metal Job Completion: Finishing, Leak/Strength test, Shape inspection, and Submission.	
			1	Mid-Term Evaluation & Workshop Job Inspection for Modules 1–3.	
MODULE 4: CARPENTRY SHOP					
18	18		1	Introduction to Carpentry Shop: Safety practices, Timber types, Structure & Seasoning.	
			1	Demonstration of Wood Working Tools: Steel Rule, Try Square, Marking Gauge, Carpentry Vice.	
19	19		1	Demonstration of Cutting & Planning Tools: Rip saw, Tenon saw, Jack plane, Smoothing plane.	
			1	Demonstration of Chiseling & Striking Tools: Firmer chisel, Mortise chisel, Wooden Mallet.	
20	20		1	Demonstration of Woodworking Machines: Wood turning lathe, Band saw, Circular saw, Planner.	
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				Demonstration of Wood Working processes: Planning, Marking, Chiseling, Grooving, Turning.	
21	21		1	Carpentry Job Preparation: Study of Job Drawing for Wood Joint (Mortise & Tenon / Dovetail / Bridle / Half Lap).	
			1	Carpentry Practice: Planning raw wooden block to true dimensions and squareness.	
22	22		1	Carpentry Practice: Marking layout for joint profile using Marking Gauge and Mortise Gauge.	
			1	Carpentry Practice: Sawing along lines using Tenon Saw to prepare joint elements.	
23	23		1	Carpentry Practice: Chiseling out waste wood to form Mortise / Dovetail / Half Lap slot.	
			1	Carpentry Practice: Trial fitting, trimming, and assembling joint parts.	
24	24		1	Carpentry Job Completion: Final finishing, sanding, inspection of joint alignment and fit.	
			1	Comprehensive Practice: Re-inspection and accuracy check of all prepared workshop jobs.	

MODULE 5: REVIEW, PRACTICAL ASSESSMENT & REVISION

25	25		1	Practical Review: Fitting Shop tool identification, operation techniques, and maintenance.	
			1	Practical Review: Welding equipment setup, safety procedures, and weld quality inspection.	
26	26		1	Practical Review: Sheet Metal operations, developments, soldering, and riveting practices.	
			1	Practical Review: Carpentry tools, joint types, wood turning, and finishing methods.	
27	27		1	Internal Practical Examination / Skill Assessment Session - Set 1 (Fitting & Welding).	
			1	Internal Practical Examination / Skill Assessment Session - Set 2 (Sheet Metal & Carpentry).	
28	28		1	Workshop Job Record / Workshop Diary Verification and Signatures.	
			1	Viva-Voce Practice: Questions on tools, operations, materials, and safety measures.	
29	29		1	Doubt Clearing & Remedial Practice: Fitting and Welding jobs rework.	
			1	Doubt Clearing & Remedial Practice: Sheet Metal and Carpentry jobs rework.	
30	30		1	Previous Year End Practical Exam Task Analysis & Model Question Discussion.	
			1	Compilation of Progressive Assessment Marks (50 Marks) based on job quality & attendance.	
31	31		1	End Practical Exam Guidance: Time management, tool handling precision, and safety compliance.	
			1	Final Inspection of Workshop Tools, Machines, and Equipment maintenance review.	
32	32		1	Final Job Record / Portfolio Assessment Sign-off.	
			1	Course Wrap-up & Final Academic Review for Engineering Workshop Practice.	

REFERENCES & TEXTBOOKS

1. *Engineering Workshop Practice (English)* by Dr. A. K. Sarathe
2. *S.K. Hajara Chaudhary, Workshop Technology*, Media Promoters and Publishers, New Delhi, 2015.
3. *B.S. Raghuwanshi, Workshop Technology*, Dhanpat Rai and sons, New Delhi, 2014.

4. *K. Venkat Reddy, Workshop Practice Manual*, BS Publications, Hyderabad, 2014.
5. *Kents Mechanical Engineering Hand book*, John Wiley and Sons, New York.

Signature of Faculty

Principal