



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Technology and Science
Choice Based Credit System (CBCS) Scheme in light of NEP-2020
Vocational Course for UG
(w.e.f. Batch-2022)

COURSE CODE	CATEG ORY	COURSE NAME	TEACHING & EVALUATION SCHEME									
			THEORY			PRACTICAL			L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*					
VUME301	VC	WORKSHOP SKILLS	0	0	0	30	20	2	0	4	4	

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;

***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:-

The primary objectives of the course is to knowledge and skills of (A) lathe machine's operations and perform operations on job (B) drilling machine's operations and perform operations on job (C) grinding machines, grinding wheel, operations and related terms.

Course Outcomes:-

After completion of this course:

1. Students will be able to understand & describe lathe machines, operations and applications.
2. Students will be able to perform various lathe operations and make jobs.
3. Students will be able to understand & describe drilling machine, operations & applications.
4. Students will be able to perform various drilling operations and make jobs
5. Students will be able to understand working principle of grinding machines and perform grinding operations on job.

Syllabus

Unit-I


Introduction: Need of workshop and types of workshop and layouts, safety measure in workshop.

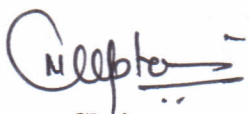
Carpentry Shop: Introduction, types of timbers, defects in timbers, timber prevention, characteristics of good timber, common tools used in carpentry shop (marking and measuring tools; cutting tools and striking tools), and common wood joints (cross-lap, corner-lap, dovetail and bridle joints), making of jobs using carpentry tools.


Unit-II


Fitting Shop: Tools used in fitting shop (measuring tools, holding tools, cutting tools, striking tools and supporting tools), various fitting operations, prepare jobs using fitting operations and tools.

Welding Shop: Introduction, terminological elements of welding process, safety measures, various types of welding, types of welding joints, welding positions, prepare jobs using welding tools and techniques.


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Unit-III

Lathe Machine and its operations: Function and construction of lathe; types and selection of lathe, basic parts of lathe, Lathe operations, lathe cutting tools and materials, applications of lathe machine, safety aspects, prepare jobs on late machine.

Unit-III

Drilling Machines and Drilling Operations:


Construction and types of drilling machines, basic parts of drilling machine, drill speed and feed mechanism, drilling operations, applications of drilling machine, safety aspects, prepare jobs on drilling machine.

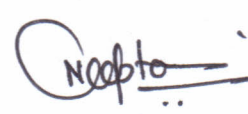
Unit-V


Grinding Machine and Operations: Working principle and types of grinding machines, grinding operations, and basic terms related to grinding wheel, glazing, loading and gumming of grinding wheel; truing, dressing, balancing of grinding wheel; Selection of grinding wheel. Perform various finishing operations on a given job.


Text and Reference Books:

1. "Workshop Technology" by W. A. J. Chapman part I, II & III, 5th ed., 2001.
2. "Manufacturing Technology" by P. N. Rao, Vol. 1 and 2, 2018.
3. "Fundamentals of Machining and Machine Tools" by D.G. Boothroy and W.A. Knight, Marcel Dekker, NY, 2007.
4. "Elements of Workshop Technology" by Hazra Chaudhary Vol I, II, 12th ed., 2007.
5. "Metal Cutting Theory and Practice" by Bhattacharya, New Central Book Agency, 2000.
6. "Principles of Metal Cutting" by G. Kuppaswamy, Universities Press, 1996.
7. "Fundamentals of Metal Cutting and Machine Tools" by B.L. Juneja and G.S. Sekhon, New Age International, 2003.
8. "Mechanical Workshop Practice" by John K.C., 2nd Ed. PHI, 2010.


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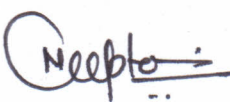
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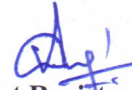
List of Experiments:

1. To make a T- lap joint using carpentry tools.
2. To make L-joint using carpentry tools.
3. To make a Dovetail lap joint using carpentry tools.
4. To make a Mortise and Tenon joint using carpentry tools
5. To prepare a simple stool or table using carpentry tools.
6. To make M.S Plate into required model by T-fitting.
7. To make M.S Plate into required model by V- fitting.
8. To make a Butt joint using the given two M.S pieces by arc welding.
9. To make a Lap joint, using the given two M.S pieces and by arc welding.
10. To make a corner joint, using the given two M.S pieces and by arc welding
11. To perform step turning and taper turning operations on the given work piece (Lathe Machine).
12. To perform thread cutting and knurling operation on the given work piece (Lathe Machine).
13. To perform drilling boring, and reaming operations on given M.S. plate.
14. To drill and tap on a given mild steel work-piece.
15. To perform surface grinding operation on the given work piece.
16. To perform cylindrical grinding operation on the given work piece


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