



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Technology and Science
Choice Based Credit System (CBCS) in Light of NEP-2020
Vocational Course

COURSE CODE	CATE-GORY	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*				
VUME401	VC	Basics of Hand Tool Operations	0	0	0	60	40	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:

1. To introduce students to the fundamentals of hand tools and their applications.
2. To develop hands-on skills for performing basic operations using hand tools.
3. To ensure students understand safety procedures and proper handling techniques.
4. To enable students to carry out minor repairs and assembly work independently.

Course Outcomes:

1. Demonstrate the ability to identify and use common hand tools effectively.
2. Apply safety measures and proper handling techniques during tool operations.
3. Perform basic tasks such as cutting, filing, drilling, and assembling components.

Syllabus:

Unit 1: Introduction to Hand Tools

- Classification and Types of Hand Tools
- Identification and Uses of Tools: Hammers, Screwdrivers, Pliers, Wrenches, etc.
- Materials and Ergonomics of Tools

Unit 2: Measurement and Marking Tools

- Measuring Tools: Tapes, Scales, Calipers
- Marking Tools: Scribes, Punches, Chalk Lines
- Accuracy and Precision in Measurement

Unit 3: Cutting, Filing, and Shaping Tools

- Cutting Tools: Hacksaws, Chisels, Snips
- Filing Tools: Flat, Round, Half-Round Files
- Shaping and Finishing Techniques

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Unit 4: Assembly and Fastening Tools

- Fasteners: Bolts, Nuts, Screws, Washers
- Assembly Tools: Spanners, Allen Keys
- Joining Techniques: Riveting, Adhesive Bonding

Unit 5: Introduction to Power Tools

- Overview of Common Power Tools: Hand Drills, Angle Cutter and Grinder, Power Chap Saw Machine.
- Operational Techniques and Applications
- Safety Measures for Handling Power Tools

Reference Books:

1. "Workshop Technology Part 1" by W.A.J. Chapman
2. "Engineering Fundamentals: An Introduction to Engineering" by Saeed Moaveni
3. "Tools and Their Uses" by U.S. Bureau of Naval Personnel
4. "Basic Workshop Technology" by R.K. Rajput
5. "Industrial Safety and Maintenance" by L.M. Deshmukh

List of Practical's:

- Hands-on practice in identifying and naming tools
- Hands-on practice with measurement and marking
- Cutting and shaping small metal and wooden pieces
- Basic assembly and fastening exercises
- Demonstration and hands-on practice with power tools

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