

## SYLLABUS

### ITI Carpenter Syllabus (One-Year Course)

#### 1st Semester

#### Unit 1: Safety and Introduction to Carpentry

1. **Professional Knowledge (Trade Theory)**
  - **Safety Precautions**
    - Importance of safety in the workshop
    - Personal protective equipment (PPE)
    - Safe handling and storage of tools and materials
    - Fire safety and emergency procedures
  - **Introduction to Timber**
    - Types of timber (hardwood and softwood)
    - Characteristics and properties of different timbers
    - Uses of various types of timber in carpentry
2. **Professional Skills (Trade Practical)**
  - **Familiarization with the Workshop**
    - Layout and organization of a carpentry workshop
    - Identification of different workstations and equipment
  - **Familiarization with Basic Tools**
    - Introduction to basic hand tools and their uses
    - Demonstrations on proper handling and maintenance of tools

#### Unit 2: Tools and Equipment

1. **Professional Knowledge (Trade Theory)**
  - **Saw and the Plane**
    - Different types of saws (hand saw, tenon saw, coping saw, etc.)
    - Maintenance and usage of saws
    - Different types of planes (jack plane, smoothing plane, block plane, etc.)
    - Sharpening and care of planes
  - **Hand Tools**
    - Identification and uses of common hand tools (hammers, chisels, screwdrivers, etc.)
  - **Workshop Appliances**
    - Introduction to common workshop appliances (clamps, vises, etc.)
    - Safe and effective usage

## 2. Professional Skills (Trade Practical)

- **Sawing Practice**
  - Techniques for accurate and efficient sawing
  - Hands-on practice with different types of saws
- **Hand Tools and Portable Power Tools Practice**
  - Usage and maintenance of hand tools and portable power tools
  - Practical exercises with power drills, jigsaws, and sanders
- **Planning Practice**
  - Techniques for planning wood surfaces
  - Hands-on practice with various types of planes
- **Chiselling Practice**
  - Proper chiseling techniques
  - Hands-on practice with different types of chisels

## Unit 3: Joinery Techniques

### 1. Professional Knowledge (Trade Theory)

- **Angle Joint**
  - Types of angle joints (miter joints, bevel joints, etc.)
  - Techniques for creating angle joints
- **Different Types of Scarf Joints**
  - Construction and uses of scarf joints
  - Techniques for making scarf joints

### 2. Professional Skills (Trade Practical)

- **Joint Practice**
  - Creating basic wood joints (butt joints, lap joints, etc.)
  - Hands-on practice with different types of joints
- **Demonstration and Making Dovetail Joints**
  - Techniques for dovetail joints
  - Hands-on practice with dovetail joints
- **A-Frame Using Different Types of Joints**
  - Building an A-frame structure with various joints
  - Practical exercises in constructing an A-frame

## Unit 4: Timber Processing

### 1. Professional Knowledge (Trade Theory)

- **Seasoning of Timber**
  - Methods of seasoning (air seasoning, kiln drying, etc.)
  - Importance of seasoning in carpentry
- **Preservation of Timber**
  - Methods and materials for timber preservation
  - Techniques for protecting timber from pests and decay
- **Boring Tools**
  - Types and uses of boring tools (augers, gimlets, etc.)
- **Conversion of Timber**
  - Methods of converting timber for use (sawing, slicing, etc.)

### 2. Professional Skills (Trade Practical)

- **Application of Boring Tools**
  - Practical use of different types of boring tools

- Hands-on exercises in drilling and boring
- **Preparation of Surface**
  - Techniques for surface preparation (sanding, scraping, etc.)
  - Hands-on practice in preparing surfaces for finishing
- **Furniture Polishing**
  - Methods and materials for polishing furniture
  - Hands-on practice in furniture polishing

## **Unit 5: Finishing Techniques**

### **1. Professional Knowledge (Trade Theory)**

- **Sand Paper**
  - Types and grades of sandpaper
  - Uses of sandpaper in finishing
- **Staining**
  - Techniques and materials for staining wood
  - Importance of staining in finishing

### **2. Professional Skills (Trade Practical)**

- **Surface Preparation Techniques**
  - Practical exercises in surface preparation
  - Hands-on practice in using sandpaper and staining techniques

## **2nd Semester**

## **Unit 6: Wood Working Machinery**

### **1. Professional Knowledge (Trade Theory)**

- **Wood Working Machines**
  - Types of woodworking machines (table saw, band saw, jointer, etc.)
  - Uses and maintenance of woodworking machines
- **Drilling Machine**
  - Types and uses of drilling machines in carpentry
  - Maintenance and safety procedures
- **Grinding Machine**
  - Uses and maintenance of grinding machines
  - Safety procedures for grinding machines
- **Mortiser Machine**
  - Types and applications of mortiser machines
  - Techniques for using a mortiser machine
- **Universal Wood Working Machine**
  - Functions and uses of a universal woodworking machine
  - Maintenance and safety procedures

### **2. Professional Skills (Trade Practical)**

- **Demonstration and Use of Wood Working Machines**
  - Hands-on introduction to advanced tools and machines
  - Practical use of woodworking machines

## **Unit 7: Pattern Making**

### **1. Professional Knowledge (Trade Theory)**

- **Introduction to Pattern Making**
  - Basics of pattern making in carpentry
  - Importance of accurate patterns in woodworking
- **Split Patterns**
  - Construction and uses of split patterns
  - Techniques for making split patterns
- 2. **Professional Skills (Trade Practical)**
  - **Pattern Making Practice**
    - Hands-on practice in creating patterns
    - Practical exercises in making split patterns

## **Unit 8: Advanced Timber Knowledge**

- 1. **Professional Knowledge (Trade Theory)**
  - **Different Types of Timbers**
    - Detailed study of various timbers
    - Characteristics and properties of different timbers
  - **Core and Core Prints**
    - Techniques and applications of core and core prints
    - Importance in pattern making
- 2. **Professional Skills (Trade Practical)**
  - **Identification and Use of Different Timbers**
    - Hands-on practice in identifying different timbers
    - Practical exercises in using various timbers

## **Unit 9: Carpentry Construction**

- 1. **Professional Knowledge (Trade Theory)**
  - **Types of Window Frame**
    - Construction and design of window frames
    - Types of window frames and their uses
  - **Principle of Repairing Work**
    - Methods and materials for repairing work
    - Techniques for effective repairs
  - **Types of Hanging Plates**
    - Uses and installation techniques of hanging plates
    - Different types of hanging plates
- 2. **Professional Skills (Trade Practical)**
  - **Carpentry Building Work**
    - Practical exercises in building structures
    - Techniques for constructing carpentry projects
  - **Exercises in Simple Floor Construction**
    - Techniques for floor construction
    - Hands-on practice in building floors
  - **Exercises in Partition Construction**
    - Building and installing partitions
    - Practical exercises in partition construction

## **Unit 10: Repair and Maintenance**

## 1. Professional Skills (Trade Practical)

- **Repair of Furniture**
  - Techniques for repairing furniture
  - Hands-on practice in furniture repair
- **Repair of Doors**
  - Methods and materials for repairing doors
  - Practical exercises in door repair
- **Repair of Windows**
  - Techniques for repairing windows
  - Hands-on practice in window repair

