CONSTRUCTION SKILLS TRAINING INSTITUTE

BASIC COURSE SYLLABUS

BAR BENDING & STEEL FIXING

CONSTRUCTION GROUP
LARSEN & TOUBRO LIMITED

SYLLABUS FOR BAR BENDING & STEEL FIXING TRADE

CONTENTS

SYLLABUS FOR BAR BENDING & STEEL FIXING TRADE

Duration at Skills Training Institute (Spread in three months) : **600 Hrs**

1. **Introduction to L&T / ECCG** : **3 Hrs**

2. **Introduction to the Trade** : **3 Hrs**

3. **Introduction to Trade Glossary** : **6 Hrs**

4. **Introduction to Tools & Equipment** : **12 Hrs**

- Hand tools of the trade
- Working table
- Bar bending machine
- Bar cutters
- Pins for manual bending
- Bench Grinder
- Drilling machine
- Slings & strong back

5. Documentation : 24 Hrs

- Cutting List
- Shapes & Codes schedule
- Bar schedules
- Time sheets
- Log books
- Store requisition
- Working manual
- Plans & detailed RC drawings

6. Materials : 16 Hrs

- Tying wire
- Types of steel
- Spacers
- Mesh fabric reinforcement
- Markers
- Tags
- Timber Battens

7. Testing : 16 Hrs

- Stability
- Rigidity
- Setting out
- Sequence of erection
- Flat plane
- All ties test
- Check verticality
- Diagonal check
- Spacers
- Anchorage

8. Safety : 24 Hrs

- Health & Safety
- Eye protection
- Hand & Foot protection
- Overall personal safety
- Moving
- Lifting
- Carrying
- Stacking
- Working at heights
- Electricity

9. Practice Modules : 348 Hrs

- **F1.** Ties : 14 Hrs
  - Practice rack of ties
  - Use of cutting list
  - Basic measurement
  - Marking out
  - Identification of steel
  - Correct size formers
- **F2.** Selection Steel : 14 Hrs
  - Types of Steel
  - Use of cutting list
  - Basic measurement
  - Marking out
  - Identification of steel
  - Correct size formers
  - Awareness of tolerance

- **F3.** Straightening : 14 Hrs
  - Use of straightening tools
  - Use of straight edge
  - Classification before stacking
  - Straightening bars with bends
  - Straightening bars in coils
- **F4.** Bending Links / Hooks : 14 Hrs
  - Basic marking out
  - Use of formulae
  - Use of hand tools
  - Selection of formers
  - Setup bar bender
  - Awareness of tolerance
- **F5.** Bending Cranks / Shear Bars & Chair : 14 Hrs
  - Basic marking out
  - Use of formulae, schedules
  - Use of hand tools
  - Sequence of constructions
  - Selection of formers
  - Setup bar bender
  - Awareness of tolerance
- **F6.** Prefabricate precast elements (Slab) : 14 Hrs
  - Read & understand precast drawing & schedule
  - Interpret number of repetitions, mirror images
  - Form mats with end hooks
  - Understand tolerance
  - Safety
  - Site tidiness

- **F7.** Prefabricate cage for beam : 28 Hrs
    - Read & understand drawing & schedule
    - Basic marking out
    - Use of hand tools
    - Selection of formers
    - Using closed four sided stirrups
    - Awareness of tolerance
    - Safety
    - Site tidiness

- **F8.** Prefabricate Cage for Beam with Shear Bars : 32 Hrs
    - Read & understand drawing & schedule
    - Basic marking out
    - Use of hand tools
    - Selection of formers
    - Using closed four sided stirrups
    - Form cage for beam
    - Using additional crank bars
    - Awareness of tolerance
    - Safety
    - Site tidiness

- **F9.** Prefabricate Cage for Column & Base & Set in to position : 32 Hrs
    - Read & understand drawing & schedule
    - Basic marking out
    - Use of hand tools
    - Selection of formers
    - Using closed four sided stirrups
    - Form cage for column
    - Using base & starter bars
    - Awareness of tolerance
    - Safety
    - Site tidiness

- **F10.** Prefabricate Cage for Column incorporating Corbels : 32 Hrs

  - Read & understand drawing & schedule
  - Basic marking out
  - Use of hand tools
  - Selection of formers
  - Using closed four sided stirrups
  - Form cage for column
  - Using bracket bars
  - Awareness of tolerance
  - Safety
  - Site tidiness

- **F11.** Prefabricate Cage for Column incorporating Crank Bars : 32 Hrs

  - Read & understand drawing & schedule
  - Basic marking out
  - Use of hand tools
  - Selection of formers
  - Using closed four sided stirrups
  - Form cage for column
  - Using crank bars
  - Awareness of tolerance
  - Safety
  - Site tidiness

- **F12.** Prefabricate Cage for Beam with Alteration in Section Along Length : 32 Hrs

  - Read & understand drawing & schedule
  - Basic marking out
  - Use of hand tools
  - Selection of formers
  - Using closed four sided stirrups
  - Introducing new bars
  - Understanding size alterations

- Using crank bars
- Awareness of tolerance
- Safety
- Site tidiness

- **F13.** Lap length to fabricate weld : 14 Hrs

  - Read & understand drawing & schedule
  - Basic marking out
  - Use of hand tools
  - Selection of formers
  - Introducing new bars
  - Understanding requirement of laps
  - Measure and cut lap length
  - Awareness of tolerance
  - Safety
  - Site tidiness

- **F14.** Prefabricate & set in-situ

  Cage for Staircase : 28 Hrs

  - Read & understand drawing & schedule
  - Basic marking out
  - Use of hand tools
  - Selection of formers
  - Introducing new bars
  - Understanding requirement of laps
  - Understand required angle and slope
  - Understand base and starter bars
  - Measure and cut lap length
  - Awareness of tolerance
  - Safety
  - Site tidiness

- **F15.** Prefabricate Cage for Beam with Stub Column : 34 Hrs
    - Read & understand drawing & schedule
    - Basic marking out
    - Use of hand tools
    - Selection of formers
    - Using closed four sided stirrups
    - Form cage for column
    - Understand base and starter bars for stub column
    - Awareness of tolerance
    - Safety
    - Site tidiness

10. Introduction to Trade on Job Site : 64 Hrs

11. Revision : 60 Hrs

12. Final Testing & Evaluation : 24 Hrs