

SYLLABUS FOR BAR BENDING & STEEL FIXING TRADE

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

1. Introduction to ITI : 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 book
- * 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

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| F13. Lap length to fabricate weld | : 14 Hrs |
| <ul style="list-style-type: none"> * 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 |
| <ul style="list-style-type: none"> * 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 |
| <ul style="list-style-type: none"> * 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 |