

# ADVANCED ARC WELDING TECHNIQUES



**Eligibility:** Graduates and current final-year students from ITI (welder, fitter and machinist grinder trades) or 12<sup>th</sup> Standard | Year of graduation: 2019 - 2026

## Modules:

### 1. Manual arc welding techniques

The basics of manual arc welding, including setup, safety procedures, welding positions, electricity fundamentals, welding system technology, electrode types, welding defects, and accident prevention.

### 2. Manual GMAW welding techniques

Gas metal arc welding basics, arc types, MIG equipment, filler metals, shielding gases, process control, variations during MIG/MAG welding, weld seam types, defects, work techniques, and welding materials.

### 3. Manual GTAW welding techniques

TIG welding basics, setup, principles, power sources, filler materials, joint preparation, welding of various materials, process variants, defect identification, and practical sessions on weld simulators and assessment.

### 4. Weld quality inspection

Welding quality inspection methods, including measurement tools, visual inspection, non-destructive testing (NDT), and destructive testing (DT), ensuring thorough quality control and adherence to industry standards.

### 5. Automated advanced robotics welding techniques

Robotic welding safety, industrial robotic systems, robotic motion, configuration, programming, and practical exercises on robotic motion programming and welding processes, emphasizing safety protocols and technical proficiency.

### 6. Sector specific application

Metal arc welding techniques for automotive manufacturing, high-strength material joining in capital goods production, and advanced arc welding applications in aerospace, encompassing materials, applications, quality control, and industry-specific challenges.

### 7. Industrial visits & projects

Hands-on industry projects and visits, allowing Trainees to apply learned techniques in real-world settings, addressing industry challenges, and gaining practical insights into advanced joining technologies.

### 8. Human skills

Interactive workshops, role-playing, and real-world simulations, fostering empathy, communication, adaptability, and leadership for holistic skill development.

Admission Confirmation Fee: ₹ 3,500

**COURSE FEES**

**₹ 18,000**

**DURATION**

**10 WEEKS**

SCAN TO REGISTER



# TATA IIS

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