



Istanbul  
**GEDİK University**

# WELDING TRAINING PROGRAM

MIG - MAG WELDING MODULE



## Contact Information

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## **MIG - MAG WELDING TRAINING PROGRAM**

### **INTRODUCTION**

This program aims to provide theoretical education and practical training of the Manuel Metal Arc (MMA) welding process (MODULE 1) with Five Days Program organised by the Istanbul Gedik University, Turkey. Istanbul Gedik University works together with Gedik Welding Company who is one of the leading welding consumable producer in the world since 1963. Under this program all major arc welding processes are covered as following;

MODULE 1: MMA Process, MODULE 2: MIG / MAG, MODULE 3: FLUX CORED WIRE (FCW), MODULE 4: SUBMERGED ARC WELDING (SAW)

Manuel Metal Arc (MMA) welding process is still one of the most commonly used welding process for fabrication and repair of many major applications. This program will cover fundamentals of the MMA, its power sources, principles and international standards of MMA process, equipment and its commonly used parameters and their selection criteria by the welders.

Courses are designed for the participation of 20 Persons each day/6 hours (Total of 300 hours) to be trained using 7 welding machines/cells and steel plates prepared in cutted pieces ready to use 125mm x 75mm x 4.0mm sizes for all position weldings.

### **WHO SHOULD ATTEND**

This course is designed to provide needed education and practical training for the persons to be a skilled welder and also provide new information for the welders to upgrade their skills for welding with Rutile, Basic and Cellulosic electrodes for all welding positions in Butt and Fillet welding configurations of the structural steels. Companies working with welding processes can send their workers for their qualification as certified welder. Furthermore, governmental offices can open a course together with the Istanbul Gedik University to qualify the workers with technical skill, improve their employment chances and also provide needed skilled workers for their national, regional industries and projects.

### **CERTIFICATE**

After successful completion of the Five Days Program, course participants will receive "GEDIK WELDING CERTIFICATE FOR MMA WELDERS"

### **DURATION**

Five days with working six hours/day.

**Day 1:** Theoretical Education,

**Day 2:** Practical Training with Rutile Electrodes (Butt and Fillet weldings, PB, PG and PA Positions),

**Day 3:** Practical Training with Rutile Electrodes (Butt Welding, PG, PC and PF Positions),

**Day 4:** Practical Training with Basic Electrodes (Fillet and Butt Weldings, PA, PB, PC, PD, PE and PF Positions),

**Day 5:** Practical Training with Cellulosic Electrodes of pipe welds (Optional)

### **COURSE FEE**

The program costs 1750 - USD / per participant for 5 days, provided 20 people are registered. This fee includes the costs of the course documents and certificates.

The lunch and coffee / tea will be sponsored by the local partner institution / company.

### **WORKSHOP**

This course will be conducted in a partnership with the local partner institution / company who will provide workshop to accomodate maximum 20-25 people to conduct theoretical education and practical welding training. The workshop should have adequate structure and equipment as well as it should satisfy the health and safety requirements. The workshop should have minimum of seven welding cells with seven welding machines, as shown in this program.

The layout and detailed technical plan of the workshop can be provided by the Istanbul Gedik University, if needs to be newly built. The seven pieces of MMA welding In short; Welding Workshop, minimum of seven Welding Machines and test materials (about 800 pieces of cutted steel plates of 4.0 mm thickness with given sizes) should be provided by the host / partner organisation in respective country. The welding electrodes of all three types will be sponsored by the Gedik Welding.

### DAY 1 / Theoretical Education

- Power source characteristics for conventional process and CPU controlled power sources
- Effect of current type and polarity.
- Equipment and accessories: torches, wire feeders, hose assembly, control panel
- Metal transfer modes (dip, globular, spray, pulsed and rotating), controlled transfer mode and their application
- Welding parameters and settings: current, voltage, travel speed, gas flow rate, etc
- Consumables: shielding gases, filler materials (solid wires), and their combinations
- Standards for filler materials (at least for non-alloy steels)
- Welding applications, typical problems and how to solve them...
- Consumables: shielding gases, filler materials (flux cored wires), and their combination
- Relation between the consumables and the type of Metal transfer mode, and their application for FCAW
- Consumables: shielding gases, filler materials (flux cored wires), and their combination
- Welding applications, typical problems and how to solve the

6 Hours

### DAY 2 / Practical Wire Electrode Fillet Welding

- PB Position
- PG Position

6 Hours





### DAY 3 / Practical Wire Electrode Fillet Welding

- PA Position
- PF Position

6 Hours

### DAY 4 / Wire Electrode Butt Welding

- PA Position
- PC Position
- PD Position

6 Hours

### DAY 5 / Wire Electrode Butt Welding

- PF Position
- PE Position
- PG Position

6 Hours

#### NOTES:

Material Thickness: 4 mm

Traniess: Max 20 Person

Welding Machines: 7

Material size and quantity: 125\*75\*4 mm: 1000 pieces







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