Iranian Welding and Joining Institute (IWJI)

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Message from the CEO

The welding and connection industry is one of the vital pillars of the industrial and economic development of the country. From the construction of large engineering structures to the production of advanced equipment in the oil, gas, petrochemical, automotive, power generation, and aerospace industries, all rely on the knowledge and advanced technologies of welding. Today, in leading countries, national organizations responsible for this industry play a key role in developing standards, training skilled personnel, enhancing quality, and fostering innovations in this field.

With this approach, the establishment of the "Iranian Welding and Joining Institute" is a strategic and essential step towards strengthening the country's industrial infrastructure. This institute, as the national reference for welding and joining, has the mission to update knowledge and technology in this field and accelerate the industrial development of the country by creating effective interaction among industries, universities, and international organizations.

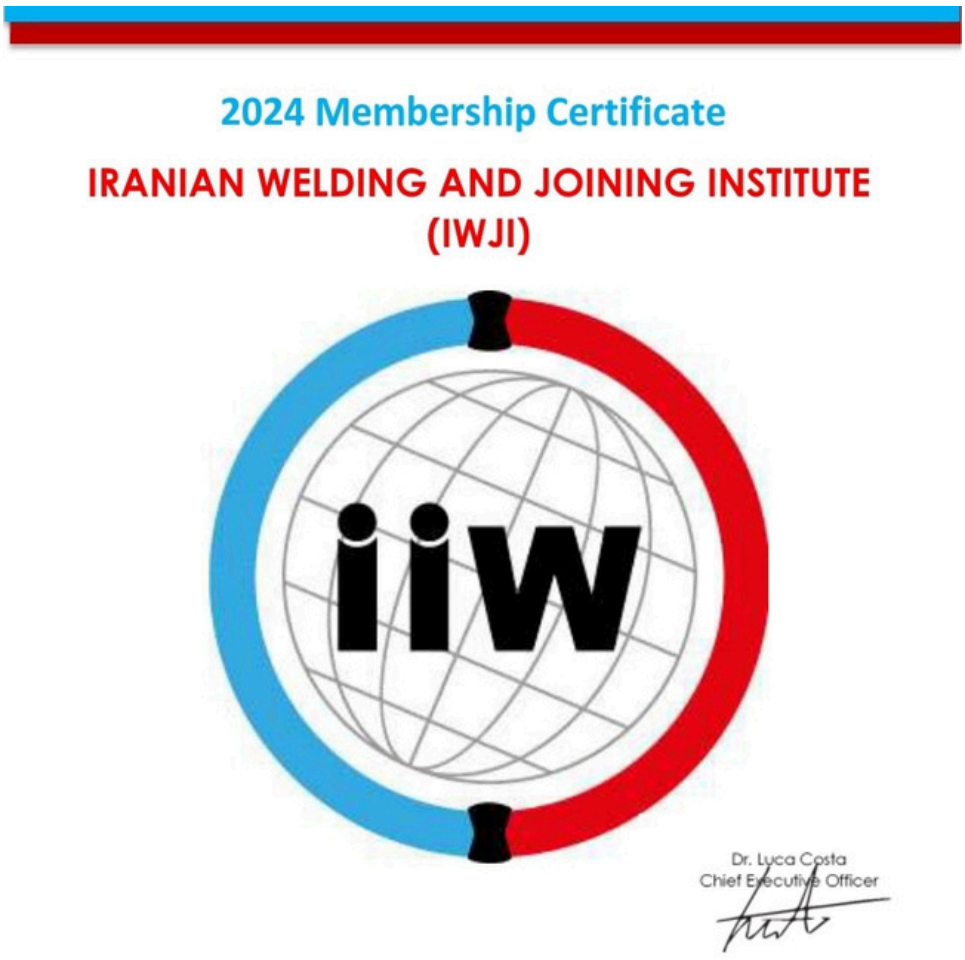
At the Iranian Welding and Joining Institute, we aim to provide specialized services, including standardization, professional training, industrial research, issuing accredited certificates, and establishing a network with international entities, to create a reliable platform for improving quality, safety, and productivity in the country's industries.

We hope that with the efforts and cooperation of all related institutions, this institute will become a successful model in the region and, by adding value to the welding industry, take a significant step toward sustainable development and national progress.

Sincerely,
Prof. Dr. Behnam Anbarluie
CEO of the Iranian Welding and Joining Institute

IRANIAN WELDING AND JOINING INSTITUTE (IWJI)

The Iranian Welding and Joining Institute IWJI is a not-for-profit and membership-driven institute that was founded by the Amirkabir University of Technology (Tehran Polytechnic) in 2020. This institute is a trustful partner for the industry and deals with the education, training, standardization, certification in the field of welding and joining for systems reliability, safety, durability, and better functionality. The headquarter of this institute is located in Tehran.



IWJI

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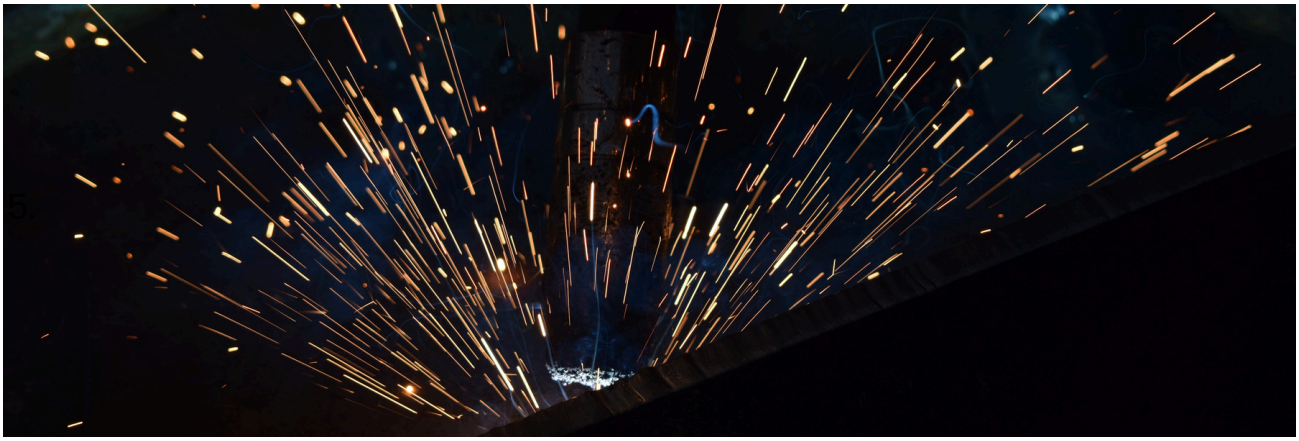
ABOUT US

The Iranian Welding and Joining Institute was established in 2020 to support the Iraninan industry regarding all the issues in the field of welding and joining.

The IWJI approach is to identify weaknesses and defects in welded and joined components and structures, determine their causes and develop solutions that lead to their safer use as well as the development of new welding and joining processes for the next generation industry in order to increase the quality of life in the society.
In a cooperation agreement with the German Welding Institute DVS, the Iranian Welding and Joining Institute IWJI offers together with the DVS high-quality industrial courses in the field of welding, joining, inspection, and thermal spraying. The certificates are issued by the German Welding Institute DVS.

The Iranian Welding and Joining Institute IWJI consists of seven departments:

1. Industrial Services
2. Education and Training
3. Welding Technology
4. Structural Integrity
5. Inspection
6. Adhesive Bonding
7. Additive Manufacturing
8. Welding and Bonding Quality



RANGES OF SERVICES AT THE IRANIAN WELDING AND JOINING INSTITUTE (IWJI)

Consulting

Offering consulting and giving solutions to avoid and control defects, crack formation, deformation, fracture, failure, wear and fatigue in welded structures and components under mechanical, thermal, chemical or electrical loading conditions

Education and Training

Offering high quality internationally recognized education and training of personnel in welding, joining, cutting, additive manufacturing, adhesive bonding and thermal spraying according to the IIW guidelines

Fatigue improvement technics

Technologies for increasing the fatigue life and fatigue strength. Surface layer assessment, mechanical and thermal surface treatment

Analysis

Material testing and characterization, component testing, failure and damage analyses, failure diagnosis and microstructural analysis

INTERNATIONAL WELDING ENGINEER (IWE®)

IWE® IS THE highest qualification offered by IIW.it ensures compliance with ISO 14731,ISO 3834, ISO 9001 and a wide range of standards and codes.
Manufacturers of welded products must have suitable welding supervisors so that the welding technicians receive the necessary welding or work instructions and that all work can be carried out and monitored carefully.
Well-trained specialists can guarantee the product quality of welded constructions through the correct choice of material and welding process and process parameters, as well as the use of suitable welding and testing equipment and economical welding technology.

From design to manufacturing, engineers with extensive knowledge of welding technology are necessary to carry out the extensive tasks involved in the construction of bridges, pressure vessels, steam boilers, steel buildings, vehicles on water, in the air, in space, on rails and roads as well as in mechanical and plant engineering – and pipeline construction.
The International Welding Engineer (IWE®) course comprises a total of 448 hours and is divided into 3 modular parts and 4 main areas in terms of content:

PART 1 AND 3 – THEORETICAL TRAINING

IWE Part 1 can be completed as a face-to-face or distance learning course.

PART 2 – PRACTICAL EXERCISES (60 HOURS)

Gas welding, manual metal arc welding, Metal Active Gas (MAG) welding, Tungsten Inert Gas (TIG) welding, demonstration of other welding processes

PART 1 AND 3 – THEORETICAL TRAINING

IWE Part 3 can be completed as a face-to-face course or in blended learning (distance learning course with face-to-face phases).

COURSE CONTENT

The International Welding Engineer (IWE®) course comprises a total of 448 hours and is divided into 3 modular parts and 4 main areas in terms of content:

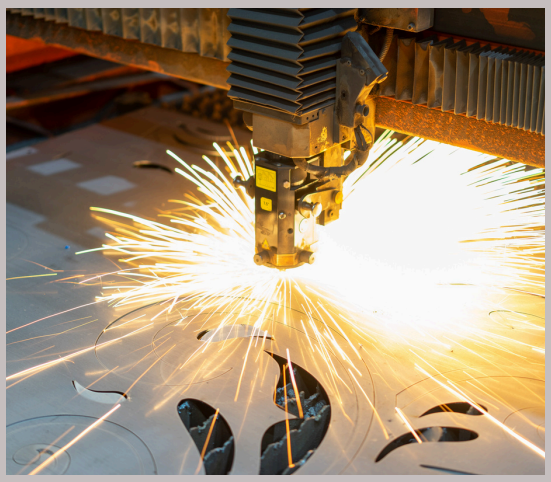
Main area 1 – Welding Processes and Equipment (95 hours)

Oxy-fuel technology, cutting, power sources, arc welding, shielded gas welding, submerged arc welding, resistance welding, special welding processes, thermal spraying, soldering, joining, automation

Main area 2 – Materials and their behavior during welding (115 hours)

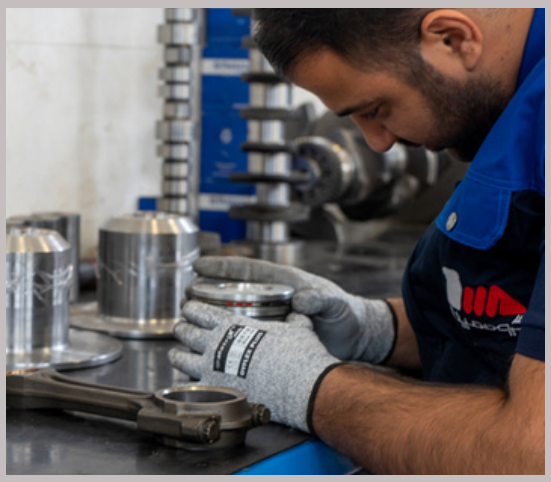
Steel production, Alloys, Heat Treatment, Cracking, Corrosion, Wear, Non-Ferrous Metals, Metallography

COURSE CONTENT



Main area 3 – Construction and Design (62 hours)

Strength of materials, weld seam calculation, design, construction, behavior of welded joints under different loads and fracture mechanics



Main area 4 – Manufacturing and Application Engineering (116 hours)

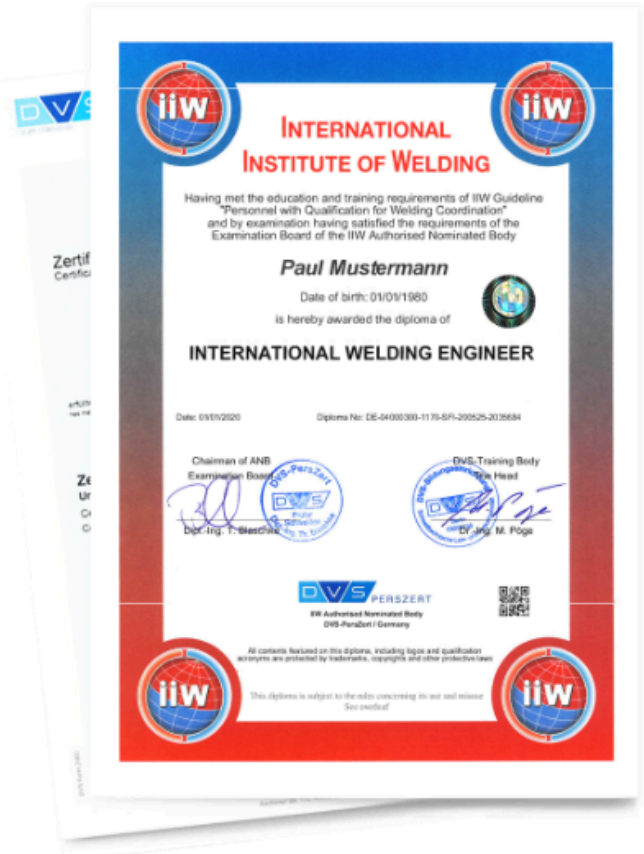
Quality assurance, welder and procedure testing, occupational safety, residual stresses and distortion, workshop equipment, non-destructive material testing, cost-effectiveness, repair welding, case studies

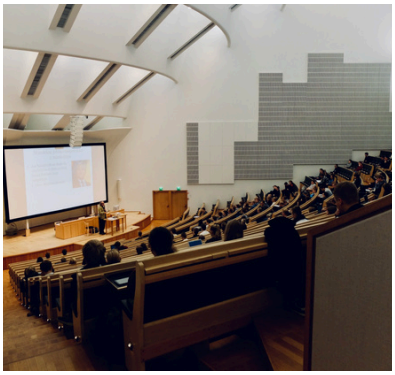
IWE® CERTIFICATION

The Iranian Welding and Joining Institute IWJI is the Authorized Nominated Body (ANB) of Iran by the International Institute of Welding IIW and an active member of the International Authorization Board (IAB) of the IIW. The IAB Systems have a three-fold orientation: personnel, companies, and the international welding community. The IAB is constantly working within the IIW to develop the systems it manages: the harmonized qualification and certification system for personnel and the certification system for companies, and adapt them both to technological advances and market needs.

The IAB works continuously towards the interests of the international welding community and its development worldwide, via its ANBs in what regards the personnel qualification and certification, and via the ANBCCs (Authorized Nominated Bodies for Companies Certification) in what regards the manufacturer's certification according to ISO 3834.

The IWJI implements the IIW Qualification and Certifications Systems, which have been developed by the IAB and implemented worldwide with the main goal of supporting the relevant industries.



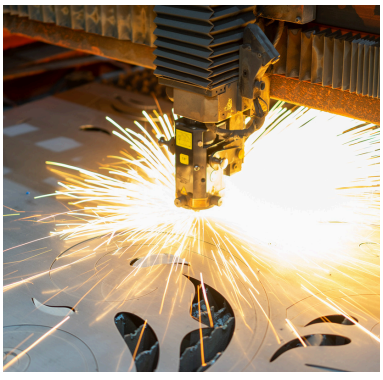


REQUIREMENT

B.Sc. or M.Sc. degree and qualification in technical subject from a university, technical college, technical college or vocational academy. Participation in the course is also possible for university graduates without professional experience. However, it is advisable to have at least one year of operational experience.

CAREER OPPORTUNITIES

In many areas of welding design, construction, calculation and processing, the qualification as an International Welding Engineer (IWE®) is an attractive additional qualification and thus enables you to work as a welding supervisor, which is mandatory in the legally regulated industrial areas and for certified welding companies by standards.



CERTIFICATES AFTER THE COURSE COMPLETION

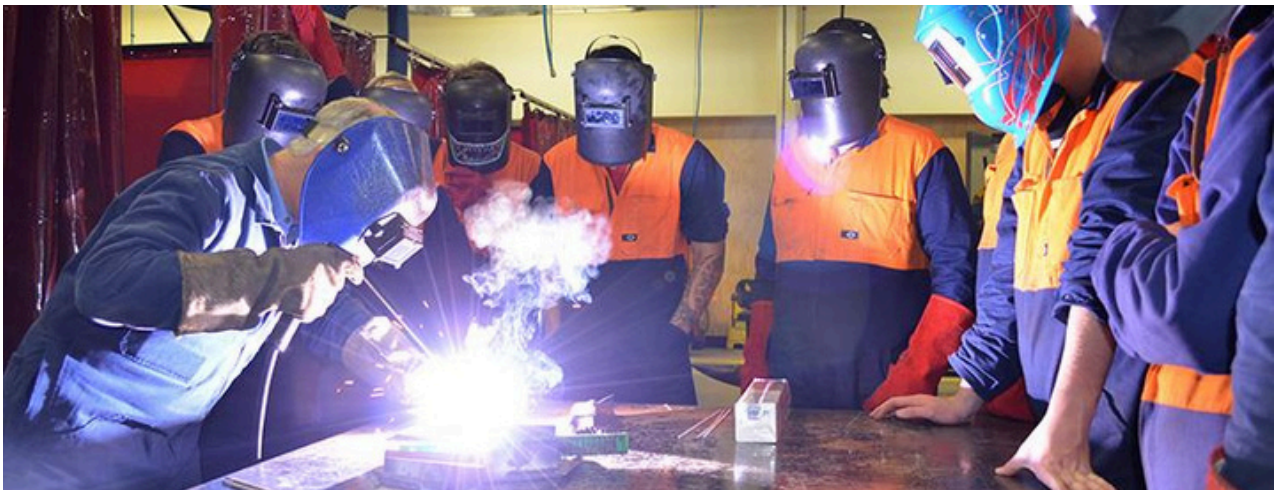
After passing the exam, the participant receives an English-language International Welding Engineer (IWE®) diploma and an IWE® rubber stamp.

SERVICE

The markets and the requirements for staying competitive are changing ever more quickly nowadays. Most of the companies are facing challenges of producing high quality parts in ever shorter periods and reduced costs on schedule. The IWJI stays on your side as an experienced consulting unity to master the challenges by choosing the correct set of tools in this fields:

1-Material selection
2-Process optimization

- Additive manufacturing
- Arc welding
- Resistance welding
- Stud welding
- Brazing and soldering
- Laser processing
- Electron beam processing
- Cladding
- Thermal cutting
- Thermal spraying
- Mechanical surface treatment



SERVICE

3- Material and component testing
- Static
- Fatigue
- Thermomechanical Fatigue
- Creep

4- Inspection

5- Failure analysis

6- Residual stress measurement

7- Design optimization

8- Fatigue of welded component and structures

9- Corrosion

10- Software solution

IWJI

CONTACT US

0098 (0) 21-66955683

INFO@IWJI.IR

WWW.IWJI.IR

INSTAGRAM : IWJI.IR
LINKEDIN:Iranian Welding and Joining Institute
WHATSAPP: 09364130097

AUT Technology Tower No. 2,
Valiasr Street Nr. 1471,
1591633140 Tehran, Iran