



MUST
UNIVERSITY
MAGHREB UNIVERSITY OF SCIENCE AND TECHNOLOGY

Bachelor's in Embedded Systems & Internet of Things (IoT)



*MUST University is accredited by the Ministry of Higher Education
& Scientific Research according to authorization N° 04-2022*



Admission Test
English & Math

Credits
180

Duration
3 Years

Prerequisite
National BAC or International Equivalent

Dual Diploma
Pathways

International
Exchange Program

Scholarship
Opportunities

Program Overview

The Bachelor's in **Embedded Systems & Internet of Things (IoT)** is designed to address the rapid evolution of **Industry 4.0**, cyber-physical systems, smart devices, and intelligent infrastructures—where software, electronics, communication networks, and data technologies converge. The program integrates theory, laboratory practice, and real-world applications across several domains including:

- Embedded programming and real-time systems
- Intelligent sensors and connected devices
- Industrial and IoT communication networks
- Edge computing and embedded Artificial Intelligence
- Security and reliability of connected systems

Through progressive hands-on learning, students develop integrated hardware and software expertise using professional platforms such as microcontrollers, IoT development boards, and industrial communication systems. Laboratories, applied projects, internships, and industry-focused challenges provide strong practical experience throughout the program. Graduates are prepared to become immediately operational engineers able to contribute to modern industrial, automation, and smart technology projects.

Program Objectives

Graduates of the program will be able to:

- Design, program, and optimize embedded and real-time systems
- Integrate sensors, microcontrollers, and connected electronic devices
- Develop and deploy IoT architectures and communication solutions
- Implement cyber-physical systems and edge computing applications
- Develop expertise in embedded AI and Edge intelligence
- Ensure the security, reliability, and performance of connected infrastructures
- Conduct system integration, testing, validation, and technical documentation
- Collaborate effectively within multidisciplinary engineering teams
- Adapt to emerging technologies through professional certifications and lifelong learning

IoT Job Market

Global employment studies consistently identify Embedded Systems and Internet of Things (IoT) engineering among the fastest-growing technology domains. As industries accelerate their digital transformation, organizations face a significant shortage of professionals capable of designing, deploying, and maintaining connected and intelligent systems — particularly at the Bachelor engineering level.

Market analyses highlight several key growth drivers:

- Industrial automation and the transition toward Industry 4.0
- Expansion of smart cities and intelligent infrastructure
- Rapid development of connected healthcare and wearable devices
- Growth of robotics and autonomous systems
- Integration of Artificial Intelligence into embedded and edge platforms

These trends are creating sustained demand for engineers who combine electronics, software, networking, and data-driven intelligence.

Target Careers

With professional experience and industry certifications, graduates may pursue roles such as: Career opportunities span a wide range of sectors, including manufacturing, robotics, energy systems, transportation, telecommunications, healthcare technologies, smart infrastructure, and engineering consulting firms.

 Embedded Systems Engineer

 IoT Engineer/ IoT Solutions Architect

 Robotics and Automation Engineer

 Edge AI Engineer

 Technical Project Manager



Program Structure

The curriculum is structured across six semesters to ensure coherent progression, gradual skill development, and increasing professional specialization.

Year 1 Scientific & Computing Foundations

- Programming Fundamentals
- Mathematics and Applied Physics
- Computer Architecture and Digital Systems
 - Fundamentals of Electronics
- Operating Systems Basics
- Communication and Professional Skills



Year 2 Embedded Systems & Connectivity

- Embedded Programming (C/C++ & Microcontrollers)
- Real-Time Systems
- Sensors and Actuators Integration
- IoT Communication Protocols
- Industrial Networks (CAN, Modbus, Ethernet)
- Software Engineering and Agile Methods
- System Modeling, Integration, and Testing

Year 3 Advanced IoT & Professional Integration

- IoT Architectures and Edge Computing
- Embedded Artificial Intelligence (TinyML & Edge AI)
 - Cyber-Physical Systems
- Security of Connected Systems
 - Industrial Automation
- Project Management and Innovation
- Professional Internship & Capstone Project



"Pre-registrations open for September 2026. Program submitted for Ministry authorization."



International Certifications

- Unlimited Access to 7,000+ Courses & 800+ Certifications
- Hands-on courses & certifications aligned with global market needs
- Flexible, self-paced learning complementing formal curriculum
- Guidance & mentoring from international faculty & experts at MUST

Integrated and Recommended Certifications

To reinforce professional readiness, the program integrates progressive exposure to internationally recognized certifications aligned with IoT industry standards. Students are also exposed to industry standards such as FreeRTOS, Zephyr RTOS, IEC industrial norms, and secure IoT frameworks, strengthening their integration into real industrial environments.

Embedded Systems
& Hardware Platforms

IoT
& Networking

Embedded AI
& Edge Computing

Software Quality
& Project Management

Academic Progression Opportunities at MUST University

- Master's in Data Science & AI with the option of a dual international diploma (1+1)
- Master's in Management & Innovation (dual diploma)
- Master's in Cybersecurity.

International Opportunities

- Participation in Erasmus+ mobility programs.
- Access to international dual-degree pathways.
- 3+1 or 3+2 transfer programs with international partner universities.
- Semester Abroad Programs (SAP) with international partners.
- Merit-based scholarship opportunities for top-performing students at partner institutions.

Partner universities in the USA & EUROPE



Why Choose MUST?

- **English Instruction – North American Model:** Courses delivered in English through a globally aligned curriculum balancing theory and practice.
- **Personalized Academic Support:** Coaching, mentoring, and one-on-one guidance to ensure student success.
- **Hands-On Learning:** Fully equipped physical and virtual labs, applied projects, and free professional certifications.
- **Career-Ready Graduates:** Professional internship and international certifications prepare students for immediate employability.
- **Innovative Analytics:** AI-based platform provides personalized support throughout the program.
- **Vibrant Student Life:** Close-knit, family-like environment encouraging creativity, clubs, associations, trips, and personal growth.

