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for campus

Professional Certification Program

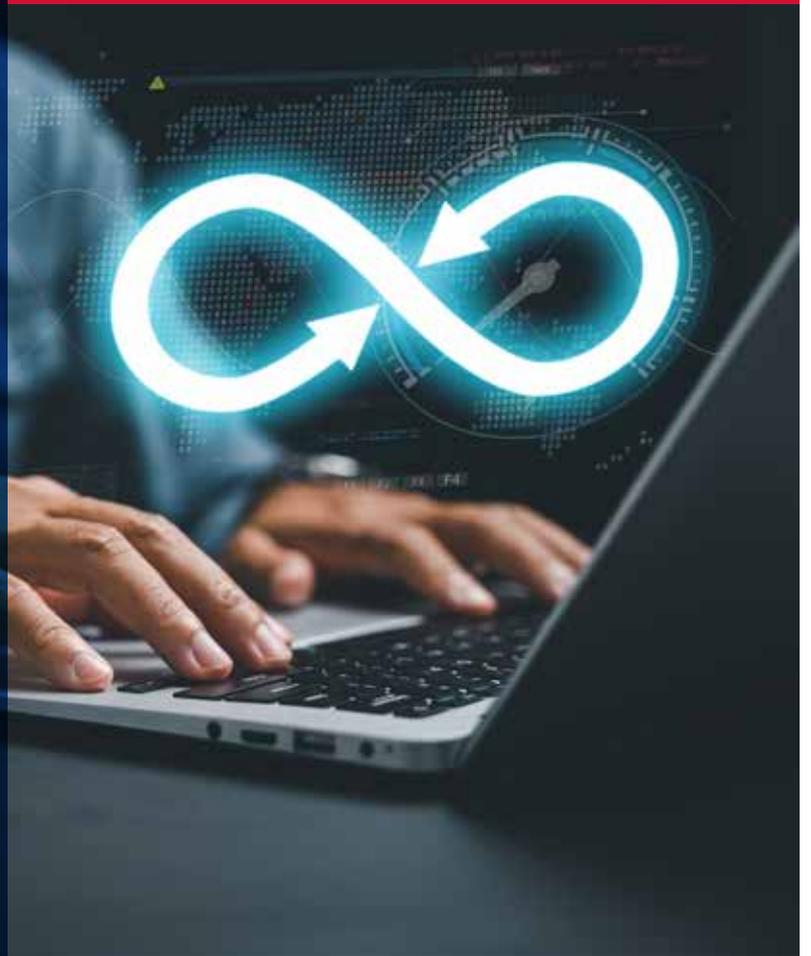
# DevOps Mastery Program Overview

Our 6-month DevOps certificate program is designed to help you master essential DevOps skills that are highly sought after in today's job market. This program is based on the most relevant DevOps courses available on Coursera and is enriched with practical cases and personalized projects crafted by experienced instructors from MUST University.

You will learn foundational DevOps principles, concepts, and essential tools such as containerization using Docker and Kubernetes, Version Control Systems and Linux Shell Commands. You'll also discover how to implement these technologies in an Agile Development framework, including Scrum.

We will focus on advanced topics like Test Driven Development, Infrastructure as Code, and CI/CD automation. You'll bring everything together by working on a hands-on project to apply these skills. Join us to gain expertise in the crucial DevOps tools employers are seeking and jumpstart your career in the dynamic field of DevOps.

This program is your gateway to mastering these in-demand skills and building a thriving career.



Format  
**Blended learning**



Language  
**English & French**



6 months  
**Flexible Schedule**



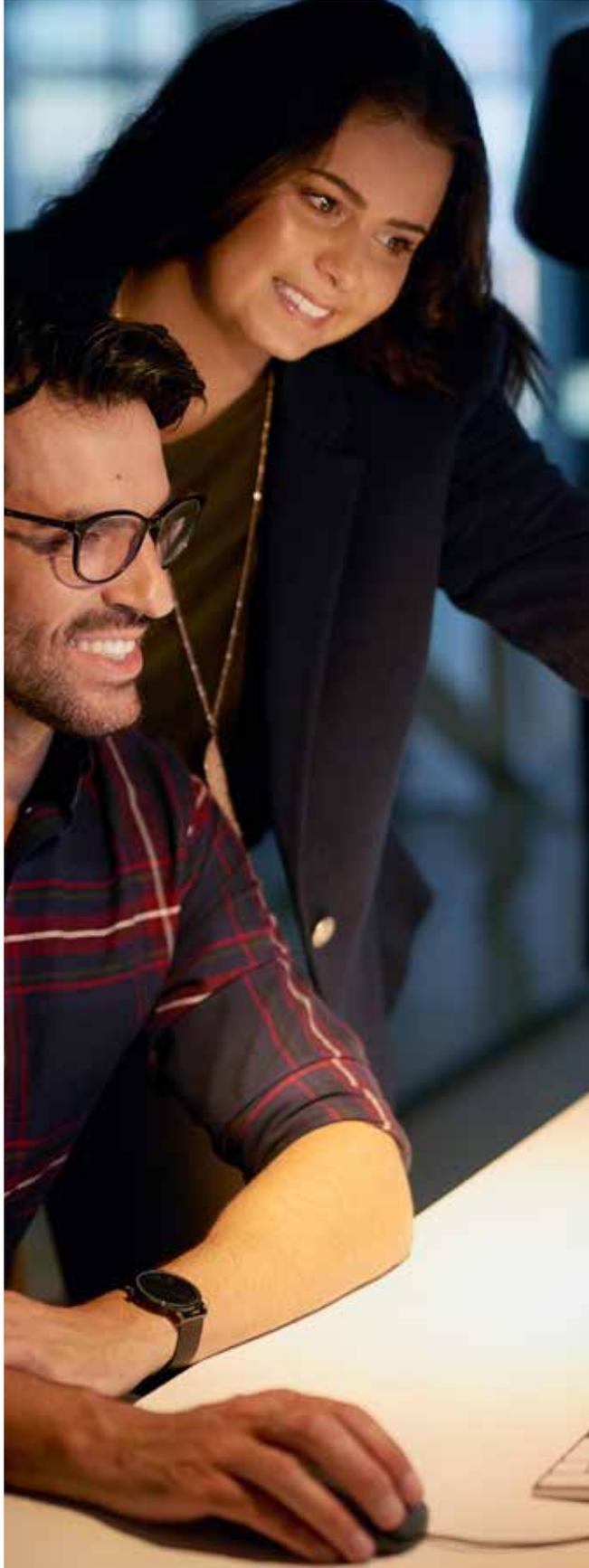
Cost  
**TND 2.800**  
(Fees covered by TFP)



**MUST University**  
LAC 3, Tunis



# PROGRAM TOPICS



## **1. Introduction to DevOps**

In this introduction, you will understand key DevOps principles, like fostering shared responsibility and transparency. It will help you grasp the importance of Continuous Integration, Continuous Delivery, Infrastructure as Code, Test Driven Development, and Behavior Driven Development.

You will also gain insights into essential DevOps concepts, including software engineering practices, cloud-native microservices, automated continuous deployments, and building resilient code. Lastly, it will clarify how DevOps impacts organizations by breaking down silos, encouraging cross-functional teamwork, and sharing responsibilities.

## **2. Introduction to Agile Development and Scrum (and Introduction to Version Control Systems : Git & GitHub and Linux Shell Commands)**

This course will empower you with five essential Agile practices for DevOps: small batches, minimum viable product, pair programming, behavior- and test-driven development. You'll also master user story creation, story point estimation, and kanban board tracking.

Integrating Scrum, sprint planning, and utilizing metrics will be your key skills for producing shippable increments and enhancing performance, broadly applicable in different contexts.

## **3. Introduction to Containers, Docker, Kubernetes, and Practical Use Cases**

In this section, you'll learn how to efficiently move applications between different environments using containers. You'll also explore the creation of contemporary cloud-based applications with tools such as Docker and Kubernetes.

Understanding Kubernetes will enable you to proficiently set up and manage containers. Additionally, you'll gain hands-on experience in creating and utilizing Docker images and containers.

#### **4. Introduction to Test Driven Development (TDD)**

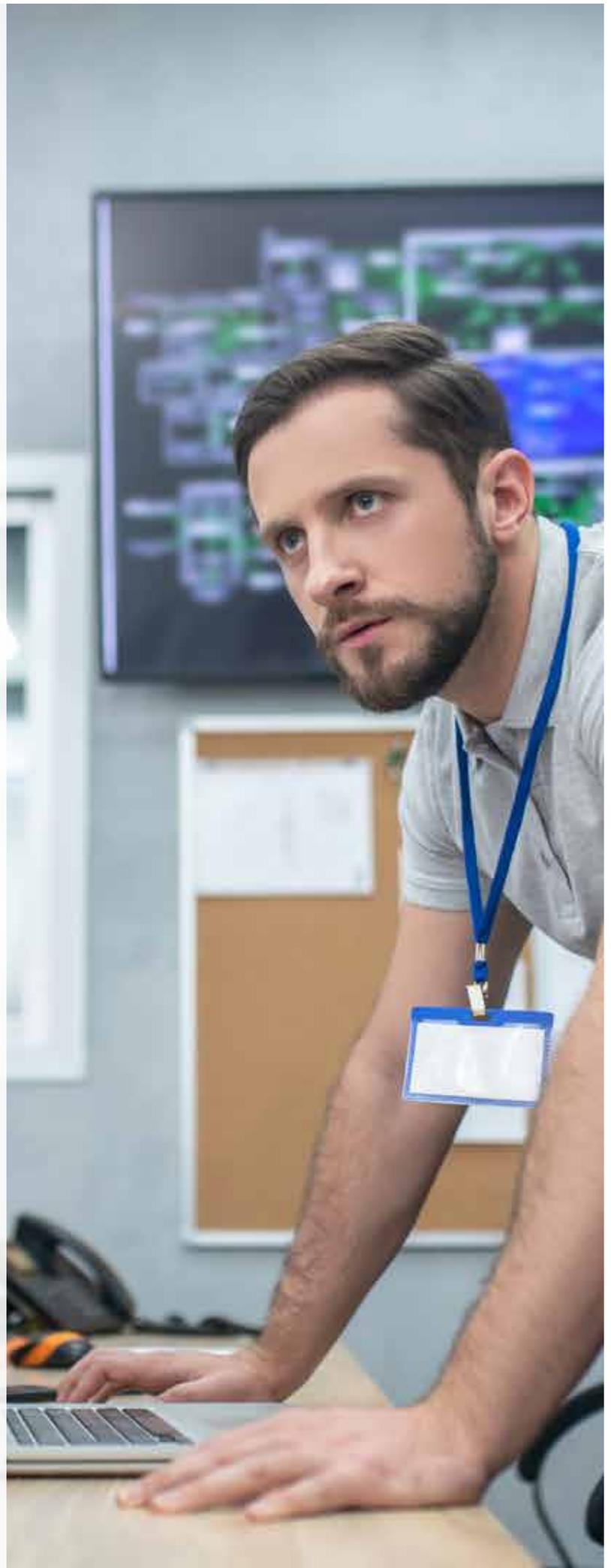
This section emphasizes the significance of testing and introduces you to test-driven development (TDD) while highlighting its advantages in the DevOps context. You'll learn to create unit tests with test assertions and fixtures and execute them. Additionally, you'll enhance your unit testing skills using advanced TDD techniques such as coverage reports, factories, fakes, and mock objects.

#### **5. Continuous Integration and Continuous Delivery (CI/CD)**

In this part, you will learn about Infrastructure as Code (IaC), discover the tools used, and gain the ability to create IaC scripts using Terraform. Additionally, you will understand cloud platforms and automation, equipping you to automate CI/CD tasks effectively using Jenkins and GitHub actions. During this section, you will define Continuous Integration (CI) and familiarize yourself with some CI tool examples. Lastly, you will explore the Continuous Deployment (CD) process, delving into tools like OpenShift Pipelines and Argo CD.

#### **6. Mastering DevOps Essentials with Hands-On Use Cases**

In this section, you'll gain hands-on experience through a demo project that covers the entire DevOps process. We'll start with project planning using the Scrum methodology, move on to version control, and then delve into containerization techniques for application deployment. The lab will demonstrate the use of Docker for rapid and efficient app deployment. Additionally, the project will involve the utilization of CI/CD tools to ensure continuous integration. Additionally, we will outline several actionable next steps to help you kickstart or enhance your career in the DevOps field.



# ABOUT THE PROGRAM

## On-line Courses



Access to quality online content  
from MUST & Coursera.

## On Campus Sessions



Ensures that online modules  
are done & quizzes  
are successfully passed



Focuses  
on case studies



Discussions  
& Multiple  
simulations



Working on a business challenge  
that's relevant to each  
participant and their company

# BENEFITS FOR EMPLOYEES, IT PROFESSIONALS



## **Official Proof of Competence :**

The program will provide you with official proof of competence and keep you updated with the latest knowledge in the DevOps domain.

## **Distinguished Achievement :**

It will set you apart as an achiever and keep you ahead of your competitors in the ever-evolving tech industry.

## **Expanded Career Opportunities :**

Completing the program can open doors to a wider range of career opportunities within the IT and DevOps fields, allowing you to explore various roles and positions.

## **Problem-Solving Proficiency :**

The program equips you with problem-solving skills that are invaluable in IT.

You'll be better prepared to tackle complex issues and find innovative solutions.

## **Transferable Skills :**

Many of the skills you acquire, such as problem-solving, collaboration, and adaptability, are transferable to various industries and roles, making you a more versatile professional.

# BENEFITS FOR EMPLOYERS/ ORGANIZATIONS



## **Reduced Costs :**

Expect reduced costs due to the improved efficiency of your teams, streamlined processes, and more strategic organizational approaches.

## **More Work and Projects :**

Your organization will be able to take on more work and projects confidently, thanks to a team that is well-trained and qualified.

## **Faster Time-to-Market :**

The improved efficiency and automation skills gained from the program can lead to shorter development cycles and quicker product releases, giving your organization a competitive advantage.

## **Scalability and Flexibility :**

With a DevOps-trained team, your organization can scale its operations more easily and adapt to changing business needs, ensuring long-term viability and success.

## **Consistency and Quality :**

The program emphasizes standardized processes and automated testing, which leads to higher-quality deliverables and a reduction in defects and errors.

## **Cultural Transformation:**

DevOps often involves a cultural shift towards collaboration and shared responsibility. As your team embraces these cultural changes, it can lead to a more cohesive and productive work environment.

## **Client Satisfaction:**

Higher-quality products, quicker responses to client needs, and efficient troubleshooting lead to increased client satisfaction, potentially resulting in improved client retention and new business opportunities.

# WHO IS THIS PROGRAM FOR?



## **DevOps Developers :**

These are tech-savvy professionals who are entrusted with translating business objectives into software designs and implementing them into executable software solutions.

## **Individuals :**

Anyone with an interest in mastering DevOps practices and principles to advance their careers in the technology industry.

## **Software Engineering Managers :**

Managers who want to understand and implement DevOps practices within their teams and projects.

## **Business Stakeholders :**

Individuals involved in decision-making and strategy at the intersection of technology and business.

## **Consultants :**

Professionals who provide expert advice and solutions to organizations looking to adopt DevOps practices.

## **IT Directors :**

Those responsible for the overall IT strategy and direction within an organization.

# AFTER THIS COURSE YOU WILL BE ABLE TO



- Master essential DevOps tools.
- Implement Agile and Scrum methodologies.
- Use Docker and CI/CD pipelines effectively.
- Embrace Test-Driven Development (TDD).
- Gain hands-on project experience.
- Collaborate effectively in cross-functional teams.
- Launch your DevOps career with confidence.

# PROGRAM INSTRUCTORS



**John Rofrano**  
Senior Technical Staff  
Member and DevOps  
Champion  
IBM



**Alex Parker**  
Offering Manager for  
IBM Cloud Kubernetes  
Service  
IBM



**Alfredo Deza**  
Adjunct Assistant  
Professor in the Pratt  
School of Engineering  
Duke University



**Mohit Chandarana**  
Data Products (ML)  
Research Scientist  
IBM



**Noah Gift**  
Executive in Residence and  
Founder of Pragmatic AI Labs  
Duke University



**Rav Ahuja**  
Global Program  
Director  
IBM



**On-campus Instructor**  
Mrs. Islem Meherzi  
Senior Data Science and IT Engineer

# CERTIFICATE



PROFESSIONAL CERTIFICATION PROGRAMS  
**DEVOPS MASTERY**

**CERTIFICATE OF COMPLETION**

The Maghreb University of Science and Technology certifies that  
.....  
has completed to satisfaction the Professional Certification Program  
January 13, 2024 – June 13, 2024

**Khalil Amiri, PhD**  
MUST University  
Provost

**Najwa Sara Merchawi, PhD**  
Professional Certification Programs  
Director

Program from IBM Sponsored by Coursera in collaboration with MUST University

The image is for illustrative purposes only. The actual certificate may be subject to change at the discretion of the university.





**COURSE CERTIFICATE**

has successfully completed  
**Introduction to DevOps**  
an online non-credit course authorized by IBM and offered through Coursera

  
John J. Bellone  
Senior Technical Cloud Member and DevOps Champion  
IBM T.J. Watson Research Center



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