

Digital Twin

Sector:	Manufacturing
Field:	Engineering
Provider:	Umm Al-Qura University
Program Code:	TBD
Approval Date:	TBD
Launch Date:	TBD

الجهة الإشرافية	الجهات الداعمة للبرنامج	الجهة المقدمة للبرنامج
National eLearning Center 	Ministry of Industry and Mineral Resources 	Umm Al-Qura University 

Digital Twin

Program code	Level	sector	Field	Number of courses	Credit hours	Learning hours	Program duration	Language	Translation	fees	Launch Date	Learning start date	learning style
	Intermediate	Manufacturing		3	9	135 (45 hours per course)	12 weeks	English					Asynchronous
Program Description													
This microprogram focuses on Digital Twin technology, which involves creating virtual replicas of physical objects or systems. These digital twins allow for real-time monitoring, diagnostics, simulation, and optimization in various industries. Learners will gain hands-on experience with the software and processes used to create and manage digital twins, with applications in manufacturing, logistics, and urban planning.													
course1		course 2			course 3								
course name	Introduction to Digital Twin Technology		course name	Tools and Techniques for Building Digital Twins		course name	Real-World Applications of Digital Twin						
hours	3		hours	3		hours	3						
Admission requirements and conditions				Certification Requirements			Stackable micro-programs (Micro-Program codes) Micro-programs that combined to form a degree			Degree			
<ul style="list-style-type: none">A bachelor's degree in engineering, computer science, or a related field.Basic knowledge of data analytics and modeling.				Successfully passing the final exam conducted by Pearson VUE. The passing grade is 70% and the following grading scale applies: 70-79: Good			TBD			Microprogram			

	80-89: Very Good 90-100: Excellent		
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Main Goal

To provide learners with the skills to create, manage, and apply digital twins in various industries for better decision-making and operational efficiency.

Learning Outcomes

- Understand the theoretical foundations of digital twins.
- Develop the ability to create digital twins using modern software.
- Apply digital twin models to optimize and simulate real-world systems.

Acquired Skills

- Digital modeling and simulation.
- Data integration and real-time system monitoring.
- Application of digital twins in industrial and urban environments.

Job Titles Related to the Micro-program

- Digital Twin Engineer
- System Integration Engineer
- Smart City Planner

Brief description of the Micro-program's courses

Course Name 1	Introduction to Digital Twin Technology
Course Description	This course introduces the core concepts and benefits of Digital Twin technology, its evolution, and its applications in modern industries.
Course Outcomes	<ul style="list-style-type: none">• Understand the concept of a digital twin and its industrial applications.• Identify use cases for Digital Twin technology in various sectors.

Course Name 2	Tools and Techniques for Building Digital Twins
Course Description	Learners will explore various tools and techniques used to build digital twins, including data collection, 3D modeling, and real-time monitoring systems.
Course Outcomes	<ul style="list-style-type: none">• Use industry-standard software to create digital twins.• Apply data integration techniques to build accurate virtual models.

Course Name 3	Real-World Applications of Digital Twin
Course Description	This course will provide case studies of Digital Twin implementation in industries such as manufacturing, healthcare, and smart cities, helping learners apply these concepts to their own projects.
Course Outcomes	<ul style="list-style-type: none">• Analyze case studies on the impact of Digital Twin technology.• Propose a digital twin model for a real-world industrial scenario.

اعتماد وثيقة برنامج

Digital Twin

تقرّ جامعة أم القرى بمناسبة واعتماد خطة برنامج (Digital Twin) ليتم تطويره وتقديمه ضمن مبادرة البرامج الجامعية القصيرة تحت إشراف المركز الوطني للتعليم الإلكتروني.

الاسم	المنصب	التوقيع	التاريخ

يقرّ المركز الوطني للتعليم الإلكتروني بمناسبة برنامج (Digital Twin) المقدم من جامعة أم القرى ليتم تطويره وترخيصه ضمن مبادرة البرامج الجامعية القصيرة.

الاسم	المنصب	التوقيع	التاريخ