وثيقة برنامج جامعي قصير
Micro-program Document

# Reverse Engineering

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

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

# Reverse Engineering

| 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 | | TBD | TBD | TBD | Asynchronous |

**Program Description**

This microprogram introduces students to the principles and practices of reverse engineering, focusing on digital and mechanical systems. It covers how to deconstruct existing products and software to understand their design, architecture, and functionality. The program emphasizes practical applications in industries such as manufacturing, technology, and security.

| course1 | | course 2 | | course 3 | |
|---|---|---|---|---|---|
| **course name** | **Fundamentals of Reverse Engineering** | **course name** | **Reverse Engineering Tools and Techniques** | **course name** | **Applications of Reverse Engineering** |
| **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 |
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| • A bachelor's degree in engineering or a related field.<br>• Basic knowledge of design tools and programming languages. | Successfully passing the final exam conducted by Pearson VUE. The passing grade is 70% and the following grading scale applies:<br>70-79: Good<br>80-89: Very Good | TBD | Microprogram |

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| | 90-100: Excellent | | |

## Main Goal

To equip learners with the skills needed to deconstruct and analyze existing systems, both mechanical and digital, for the purposes of improvement, redesign, or replication.

## Learning Outcomes

- Develop the ability to reverse engineer products in various industries.
- Gain practical experience in using advanced tools for reverse engineering.
- Understand ethical and legal considerations related to reverse engineering.

## Acquired Skills

- Product and software deconstruction.
- Use of industry-standard reverse engineering tools.
- Application of reverse engineering in product improvement.

## Job Titles Related to the Micro-program

- Reverse Engineer
- Product Development Engineer
- Manufacturing Engineer

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| • Cybersecurity Analyst |
| • Reverse Engineer |

| Brief description of the Micro-program's courses | |
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| **Course Name 1** | **Fundamentals of Reverse Engineering** |
| **Course Description** | This course covers the basics of reverse engineering, including its applications and tools. Students will learn how to dissect products to analyze their structure and function. |
| **Course Outcomes** | • Understand key principles of reverse engineering.<br>• Identify the uses of reverse engineering in various industries. |

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| **Course Name 2** | **Reverse Engineering Tools and Techniques** |
| **Course Description** | Students will explore various tools used in reverse engineering, such as CAD software and scanning technologies. They will engage in hands-on projects to practice these techniques. |
| **Course Outcomes** | • Use reverse engineering software and hardware tools effectively.<br>• Apply scanning and modeling techniques to real-world objects. |

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| **Course Name 3** | **Applications of Reverse Engineering** |
| **Course Description** | This course focuses on case studies where reverse engineering is applied, from software deconstruction to product improvement in manufacturing. |
| **Course Outcomes** | • Analyze case studies and apply reverse engineering principles.<br>• Demonstrate proficiency in improving or redesigning existing products. |

اعتماد وثيقة برنامج

## Reverse Engineering

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

| الاسم | المنصب | التوقيع | التاريخ |
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يقرّ المركز الوطني للتعليم الإلكتروني بمناسبة برنامج (**Reverse Engineering**) المقدم من جامعة أم القرى ليتم تطويره وترخيصه ضمن مبادرة البرامج الجامعية القصيرة.

| الاسم | المنصب | التوقيع | التاريخ |
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