

# COMPUTER SCIENCE MASTERS PROGRAMS DEPARTMENT OF COMPUTER SCIENCE



المملكة العربية السعودية  
وزارة التعليم  
جامعة أمّ القرى

COLLEGE OF COMPUTER AND  
INFORMATION SYSTEMS

# COMPUTER SCIENCE MASTERS PROGRAMS AT UMM AL-QURA UNIVERSITY



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



## ABOUT UQU

- **Founded in 1949**
- **Largest University in the Kingdom with over 100,000 students**
- **Close to 6,000 graduate students**
- **Over 100 M.S. and Ph.D. degrees offered**



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## COMPUTER SCIENCE (PROJECT)

### PROGRAM REQUIREMENTS

- $\geq 2.75$  Cumulative GPA
- 45 credit hours
- Fees: 15,000 SR per semester

### CORE COURSES (24 CREDIT HOURS)

- Research Methods in Computer Science (3)
- Advanced Operating Systems (3)
- Advanced Software Engineering (3)
- Advanced Database Systems (3)
- Group Project (1)
- Algorithms Design (3)
- Independent Studies I (2)
- Research Project (6)

### ELECTIVE COURSES

- Software Architecture (3)
- Software Project Management (3)
- Data Mining (3)
- Computer Systems Programming (3)
- Design Patterns (3)
- Functional & Concurrent Programming (3)
- Mobile Software Development (3)
- Service-Oriented Architecture (3)
- Computer Simulation & Modeling (3)
- Software Testing (3)
- Internet Application Development (3)
- Advanced Topics in Software Engineering (3)
- Healthcare Data Analytics (3)
- Business Data Analytics (3)
- Advanced Topics in Data Science (3)
- Introduction to Bioinformatics (3)
- Distributed Systems (3)
- High Performance Computing (3)
- Introduction to Robotics (3)
- Advanced Robotics (3)
- Cybersecurity & Digital Crime (3)
- Digital Forensic Investigation (3)
- Ethical Hacking & Piracy (3)
- Mobile Security (3)
- Enterprise Information Security Infrastructure (3)
- Introduction to Blockchain (3)
- Advanced Topics in Cybersecurity (3)
- Cloud Computing & Big Data (3)
- Data Management & Governance (3)
- Geographic Information Systems Analysis (3)
- Data Retrieval & Web Search (3)
- Social Network Analytics (3)
- Internet of Things (3)
- Information Technology & Entrepreneurship (3)
- Wireless Communications & Networking (3)
- Advanced Topics in Computer Science (3)
- Cryptography Fundamentals (3)
- Internet Application Security (3)

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## COMPUTER SCIENCE (THESIS)

### PROGRAM REQUIREMENTS

- $\geq 2.75$  Cumulative GPA
- 39 credit hours
- Fees: 15,000 SR per semester

### CORE COURSES (20 CREDIT HOURS)

- Research Methods in Computer Science (3)
- Advanced Operating Systems (3)
- Advanced Software Engineering (3)
- Advanced Database Systems (3)
- Algorithms Design (3)
- Group Project (1)
- Independent Studies I (2)
- Independent Studies II (2)

### ELECTIVE COURSES

- Software Architecture (3)
- Software Project Management (3)
- Data Mining (3)
- Computer Systems Programming (3)
- Design Patterns (3)
- Functional & Concurrent Programming (3)
- Mobile Software Development (3)
- Service-Oriented Architecture (3)
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## ARTIFICIAL INTELLIGENCE (PROJECT)

### PROGRAM REQUIREMENTS

- $\geq 2.75$  Cumulative GPA
- 45 credit hours
- Fees: 15,000 SR per semester

### CORE COURSES (30 CREDIT HOURS)

- Advanced Mathematics for Artificial Intelligence (3)
- Fundamentals of Artificial Intelligence (3)
- Machine Learning (3)
- Data Mining (3)
- Optimization Methods (3)
- Neural Networks (3)
- Natural Language Processing (3)
- Group Project (1)
- Independent Studies I (2)
- Research Project (6)

### ELECTIVE COURSES

- Research Methods in Computer Science (3)
- Reinforcement Learning (3)
- Data Visualization (3)
- Pattern Recognition (3)
- Social Network Analytics (3)
- Advanced Robotics (3)
- Distributed Systems (3)
- Advanced Topics in Artificial Intelligence (3)
- Speech Recognition (3)
- Deep Learning (3)
- Evolutionary Computation (3)
- Internet of Things Systems (3)
- Computer Vision (3)
- Advanced Topics in Information Security (3)
- Advanced Topics in Cloud Computing (3)

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### CORE COURSES (23 CREDIT HOURS)

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- Data Mining (3)
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