# Course Specification

(Bachelor)

| | |
|---|---|
| **Course Title:** | Risk Management in Construction Projects |
| **Course Code:** | COE4408 |
| **Program:** | Bachelor of Construction Engineering |
| **Department:** | Civil and Environmental Engineering Department |
| **College:** | College of Engineering and Computing in Al-Qunfudhah |
| **Institution:** | Umm Al-Qura University |
| **Version:** | 4th |
| **Last Revision Date:** | 15th January 2025 |

## Table of Contents

## A. General information about the course:

### 1. Course Identification

| | | | | | |
|---|---|---|---|---|---|
| **1. Credit hours: ( 3 )** | | | | | |
| **2. Course type** | | | | | |
| **A.** | ☐University | ☐ College | ☒ Department | ☐Track | Others |
| **B.** | ☐ Required | | ☒ Elective | | |
| **3. Level/year at which this course is offered: (Level 10/year 5)** | | | | | |
| **4. Course General Description:** | | | | | |
| This course provides an in-depth understanding of risk management principles and practices in the context of construction projects. Through a combination of theoretical concepts and practical applications, students will learn to identify, analyze, and mitigate risks associated with construction processes. The course emphasizes real-world case studies and current industry practices to equip future construction engineers with the skills necessary to manage uncertainties effectively and contribute to the successful delivery of construction projects. | | | | | |
| **5. Pre-requirements for this course** (if any)**:** | | | | | |
| Construction Project Management (COE3401) | | | | | |
| **6. Co-requisites for this course** (if any)**:** | | | | | |
| | | | | | |
| **7. Course Main Objective(s):** | | | | | |
| 1. To introduce students to the fundamentals of risk management and its critical role in construction projects.<br>2. To equip students with the skills to identify potential risks in construction projects and assess their impact.<br>3. To teach students various risk analysis techniques and tools used in the construction industry.<br>4. To guide students in developing risk mitigation strategies and integrating them into project management processes.<br>5. To provide practical knowledge on the application of risk management principles through case studies and industry scenarios. | | | | | |

## 2. Teaching mode (mark all that apply)

| No | Mode of Instruction | Contact Hours | Percentage |
|---|---|---|---|
| 1 | Traditional classroom | **3 credit hours** | **100%** |
| 2 | E-learning | | |
| 3 | Hybrid<br>• Traditional classroom<br>• E-learning | | |
| 4 | Distance learning | | |

## 3. Contact Hours (based on the academic semester)

| No | Activity | Contact Hours |
|---|---|---|
| 1. | **Lectures** | **45** |
| 2. | **Laboratory/Studio** | |
| 3. | **Field** | |
| 4. | **Tutorial** | |
| 5. | **Others (specify)** | |
| **Total** | | **45** |

## B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

| Code | Course Learning Outcomes | Code of PLOs aligned with the program | Teaching Strategies | Assessment Methods |
|---|---|---|---|---|
| **1.0** | **Knowledge and understanding** | | | |
| 1.1 | **Recall, define, and describe construction engineering concepts, principles, theories, and procedures.** | **K1** | **Interactive learning**<br>**Self-directed learning** | **Midterm Exam, Final Exam, Homework, and Quizes** |
| 1.2 | **Exhibit a comprehensive understanding of specialized** | **K3** | **Interactive learning**<br>**Self-directed learning** | **Midterm Exam, Final Exam, Homework, and Quizes** |

| | | | | |
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| | knowledge by analyzing and interpreting current advancements in innovative construction technologies and illustrating comprehension of research methodologies and inquiry techniques relevant to investigating complex construction engineering problems. | | | |
| **2.0** | **Skills** | | | |
| 2.1 | Apply engineering and scientific principles to identify, analyze, and solve complex construction engineering problems. | S1 | Interactive learning<br>Self-directed learning | Midterm Exam, Final Exam, Homework, and Quizes |
| 2.2 | Utilize critical thinking skills to analyze complex construction engineering issues and develop innovative, context-appropriate solutions that address current challenges in the field. | S2 | Interactive learning<br>Self-directed learning | Midterm Exam, Final Exam, Homework, and Quizes |
| ... | | | | |
| **3.0** | **Values, autonomy, and responsibility** | | | |

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| 3.1 | Demonstrate responsibility and ethical practices in evaluating the societal, environmental, and economic impacts of construction engineering decisions. | V1 | Interactive learning Self-directed learning | Midterm Exam, Final Exam, Homework, and Quizes |
| 3.2 | | | | |
| … | | | | |

## C. Course Content

| No | List of Topics | Contact Hours |
|---|---|---|
| 1. | Introduction to Risk Management in Construction | 3 |
| 2. | Risk Identification in Construction Projects | 6 |
| 3. | Risk Analysis and Assessment Methods | 6 |
| 4. | Risk Management Frameworks and Standards | 3 |
| 5. | Risk Response Strategies | 6 |
| 6. | Mid Term Exam | 3 |
| 7. | Integration of Risk Management into Project Planning | 6 |
| 8. | Financial Risk Management | 6 |
| 9. | Legal and Regulatory Risks | 3 |
| 10. | Case Studies and Industry Examples | 3 |
| Total | | 45 |

## D. Students Assessment Activities

| No | Assessment Activities * | Assessment timing (in week no) | Percentage of Total Assessment Score |
|---|---|---|---|
| 1. | Quizzes | 4, 6, 12 | 15% |
| 2. | Homework | 3, 9, 13 | 15% |
| 3. | Midterm Exam | 8 | 30% |
| 4. | Final Exam | 16 or 17 | 40% |

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

## E. Learning Resources and Facilities

### 1. References and Learning Resources

| | |
|---|---|
| **Essential References** | **Smith, N.J., Merna, T. and Jobling, P., 2014. *Risk Management in Construction Projects*. 3rd ed. Hoboken: Wiley.** |
| **Supportive References** | **Potts, K. and Ankrah, N., 2014. *Construction Risk Management*. 1st ed. London: Routledge.** |
| **Electronic Materials** | |
| **Other Learning Materials** | |

### 2. Required Facilities and equipment

| Items | Resources |
|---|---|
| **facilities** (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.) | **Classroom with minimum capacity of 30 students** |
| **Technology equipment** (projector, smart board, software) | **Projector, whiteboard** |
| **Other equipment** (depending on the nature of the specialty) | |

## F. Assessment of Course Quality

| Assessment Areas/Issues | Assessor | Assessment Methods |
|---|---|---|
| Effectiveness of teaching | Lecturer / Students | Direct / Indirect (Grades, surveys) |
| Effectiveness of Students assessment | Faculty | Indirect (Barriers to understand successor course) |
| Quality of learning resources | Lecturer | Direct (Grades) |
| The extent to which CLOs have been achieved | Lecturer / Faculty | Direct (Grades) |
| Other | | |

**Assessors** (Students, Faculty, Program Leaders, Peer Reviewers, Others (specify)

**Assessment Methods** (Direct, Indirect)

## G. Specification Approval

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| **COUNCIL /COMMITTEE** | **Civil and Environmental Engineering Department Council in Al-Qunfudah** |
| **REFERENCE NO.** | **The fifteenth session of the academic year 1446** |
| **DATE** | **01/05/2025** |