



## Program Specification

|                             |                                                       |
|-----------------------------|-------------------------------------------------------|
| <b>Program Name:</b>        | Construction Engineering/5701                         |
| <b>Qualification Level:</b> | Bachelor of Science (BSc) in Construction Engineering |
| <b>Department:</b>          | Construction Engineering Department                   |
| <b>College:</b>             | College of Engineering in Alqunfudhah                 |
| <b>Institution: :</b>       | Umm Al-Qura University                                |

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## A. Program Identification and General Information

| <b>1. Program Main Location:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                  |                                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|---------------------------------------------------|
| Umm Al-Qura University, College of Engineering in Al-Qunfudhah                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                  |                                                   |
| <b>2. Branches Offering the Program:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                  |                                                   |
| Construction Engineering Department, College of Engineering in Al-Qunfudhah, Umm Al-Qura University.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                  |                                                   |
| <b>3. Reasons for Establishing the Program:</b><br>(Economic, social, cultural, and technological reasons, and national needs and development, etc.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                  |                                                   |
| <p>1- The economic reasons are the current shortage of qualified Construction Engineers due to construction boom and then to reduce the level of dependency on the foreign engineers. In addition the foreseeable demand for Construction Engineers due to economic growth and infrastructure development.</p> <p>2- The Social/cultural reasons are to graduate engineers qualified for higher Construction studies (M.Sc., Ph.D., etc.) and to provide greater opportunity for Saudis to become construction engineers and participate in the growth of the country.</p> <p>3- The Construction Engineering Program at Alqunfudhah is to be able to carry out technological development plans of the Kingdom.</p> <p>4- This Construction Engineering program considers as a part of the national policy development plan.</p> |                                  |                                                   |
| <b>4. Total Credit Hours for Completing the Program: ((133) + (32) for preparatory year)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                  |                                                   |
| <b>5. Professional Occupations/Jobs:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                  |                                                   |
| Construction Engineer - Site Manager - Design Engineer - Road and Facilities Engineer - Survey Engineer – Teaching Assistant of Construction Engineering – Lab. Engineer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                  |                                                   |
| <b>6. Major Tracks/Pathways (if any): There are no major tracks in the Construction Engineering program.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                  |                                                   |
| Major track/pathway                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Credit hours<br>(For each track) | Professional Occupations/Jobs<br>(For each track) |
| 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                  |                                                   |
| 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                  |                                                   |
| 3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                  |                                                   |
| 4.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                  |                                                   |
| <b>7. Intermediate Exit Points/Awarded Degree (if any): Not applicable (NA)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                  |                                                   |
| Intermediate exit points/awarded degree                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Credit hours                     |                                                   |
| 1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                  |                                                   |
| 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                  |                                                   |
| 3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                  |                                                   |

## B. Mission, Goals, and Learning Outcomes

### 1. Program Mission:

The Construction Engineering program endeavors to provide an overall quality education at the most recent level to graduate qualified construction engineers with the needed theoretical and practical skills to practice construction engineering and management efficiently, so as to contribute to the development of their community and meeting the needs of the labor market.

### 2. Program Goals:

- To prepare graduates who are able to practice construction engineering in its major areas.
- To prepare students with a solid foundation in mathematics, physical sciences and technical skills needed in their onward professional career and their further postgraduate studies.
- To further develop skills pertinent to construction engineering problem definition, formulation, design, and analysis.
- To prepare students with sufficient knowledge and skills in the use of computer tools, and are able to analyze experimental data and to apply it in the design of construction engineering systems.
- To apply and practice the construction engineering knowledge in a professional setting such as ethics and safety.
- To enhance students' ability to effectively communicate technical and professional information in written, oral and graphical forms.
- To produce graduates who further develop teamwork and effective communications skills.
- To prepare students to be interested, motivated, and capable of pursuing continued life-long learning.
- The department will seek national and international recognition and accreditation.
- The department strives to recruit and retain excellent faculty members who have received very high academic training from well-recognized universities and institutions in North America, Europe and the Middle East.

### 3. Relationship between Program Mission and Goals and the Mission and Goals of the Institution/College.

- 1- The mission of the Construction Engineering Program is consistent with the mission of the College of Engineering and the University, as the university aims at meeting the needs of the Saudi society through programs in education and scientific research.
- 2- Construction Engineering Program makes a significant contribution to the mission of the university in the construction engineering field.

Table B.3.1 gives the Consistency Matrix of the University Mission with Missions, and Objectives of Engineering College in Al-Qunfudhah And its Program.

| Level                            | Mission/Objectives |                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| UQU                              | Mission            | Provision of education, quality scientific research in the service of the community, Hajj and Umrah, and contribution to the development of the knowledge economy in accordance with the 2030 Vision.                                                                                                                                                      |
| The College                      | Mission            | To provide a high level of education and training in the domain of engineering, and provide services for the benefit of society.                                                                                                                                                                                                                           |
|                                  | Objectives         | 1 Preparation of highly qualified engineers in the various engineering domains. Such engineers will be able to meet the needs of the labor market in the state institutions and industry sectors, resume their postgraduate studies, and adapt to the development of technologies in order to cope with human needs and contemporary engineering sciences. |
|                                  |                    | 2 Provision of continuing education to community, dissemination of engineering knowledge in the public and private sectors through sessions, workshops and conferences, and the provision of consultations and lectures.                                                                                                                                   |
|                                  |                    | 3 Conducting scientific research in order to spread knowledge in the various engineering and scientific domains, and finding engineering solutions to the problems faced by public and private sectors.                                                                                                                                                    |
| Construction Engineering Program | Mission            | Offering a comprehensive quality education to graduate efficient construction engineers, who own the theoretical and practical skills to practice the construction engineering and management with efficiency and competence.                                                                                                                              |
|                                  | Objectives         | 1 To prepare graduates who are able to practice construction engineering in its major areas.                                                                                                                                                                                                                                                               |
|                                  |                    | 2 To further develop skills pertinent to construction engineering problem definition, formulation, design, and analysis.                                                                                                                                                                                                                                   |
|                                  |                    | 3 To prepare students with sufficient knowledge and skills in the use of computer tools, and are able to analyze experimental data and to apply it in the design of construction engineering systems.                                                                                                                                                      |
|                                  |                    | 4 To produce graduates who further develop team work and effective communications skills.                                                                                                                                                                                                                                                                  |
|                                  |                    | 5 To prepare students to be interested, motivated, and capable of pursuing continued life-long learning.                                                                                                                                                                                                                                                   |

#### 4. Graduate Attributes:

- Graduates convey ideas and information effectively to a range of audiences for a variety of purposes and contribute in a positive and collaborative manner to achieving common goals.
- Graduates have comprehensive knowledge and understanding of their subject area, the ability to engage with different traditions of thought, and the ability to apply their knowledge in practice including in multi-disciplinary or multi-professional contexts. Graduates engage in professional behaviour and have the potential to be entrepreneurial and take leadership roles in their chosen occupations or careers and communities.

| UQU                                                                                                                                                                                                                                                                                                                                | Construction Engineering Program                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Acquisition of a comprehensive, coherent, and organized body of knowledge in a particular field of study, and its related theories and principles.                                                                                                                                                                                 | Apply the knowledge acquired in mathematics and engineering sciences to identify, formulate and solve complex engineering problems. |
| Ability to research complex problems and develop innovative solutions with limited guidance, using insights from a student's specific field of study and other relevant areas of study.                                                                                                                                            | Apply the techniques, skills, and modern engineering tools necessary for engineering practices.                                     |
| Ability to identify and use appropriate mathematical and statistical methods in the analysis and resolution of complex issues, and to select and use the most appropriate mechanisms to communicate results to the audience.                                                                                                       | Conduct scientific research to provide solutions that serve the community.                                                          |
| Ability to demonstrate leadership, take on responsibility, and have a willingness to cooperate fully with other participants in joint projects and initiatives.                                                                                                                                                                    | Understand the impact of engineering solutions from safety, ethical, environmental, economic, and aesthetical perspective.          |
| Adequate and integrated knowledge and skills necessary for effective practice of the specific professional field required, in the case of a professional program.                                                                                                                                                                  | Design systems, components and projects in various fields of civil engineering.                                                     |
| In-depth knowledge and comprehension of research literature in a specialized field, and the ability to interpret, analyze, and evaluate the significance of that research to contribute to increasing the body of knowledge in that field of study, if the program is academic in nature, without involving professional practice. | Apply the techniques, skills, and modern engineering tools necessary for engineering practices.                                     |
| Ability to communicate effectively, especially in Arabic.                                                                                                                                                                                                                                                                          | Develop and conduct experiments, as well as to analyze and interpret data                                                           |
| Commitment to Islamic ethics and values.                                                                                                                                                                                                                                                                                           | Apply the techniques, skills, and modern engineering tools necessary for engineering practices                                      |

#### 5. Program learning Outcomes\*

##### Knowledge and Understanding

Program Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning and teaching.

The *National Qualification Framework* (NQF) provides five learning domains. Learning outcomes are required in the first four domains and some programs may also require the Psychomotor Domain.

On the table below are the five NQF Learning Domains, numbered in the left column.

**First**, insert the suitable and measurable learning outcomes required in each of the learning domains. **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each program learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process.

| Program consistency of the program with the National Framework for Qualifications (NQF)-2020 |                                                                |                  |          |                |        |                |
|----------------------------------------------------------------------------------------------|----------------------------------------------------------------|------------------|----------|----------------|--------|----------------|
| University                                                                                   | Umm Al Qura University                                         |                  |          |                |        |                |
| Faculty                                                                                      | (College of Engineering at Umm Al-Qura University in Qunfudha) |                  |          |                |        |                |
| Program level (Degree)                                                                       | Associate Diploma                                              | Graduate Diploma | Bachelor | Higher Diploma | Master | Doctoral (PhD) |
| Level in NQF                                                                                 | 4                                                              | 5                | 6        | 6              | 7      | 8              |
| Program title (major)                                                                        | Bachelor of Construction Engineering                           |                  |          |                |        |                |

The report on the program's consistency with the Saudi Framework for Qualifications (NQF) includes four areas of comparison:

1. Use qualifications titles that clearly and accurately describe the educational sector, the level of qualification, and the field of study or specialization.
2. The minimum number of credit hours required for the intended qualification.
3. Areas of learning outcomes (knowledge - skills - values).
4. Learning outcomes in each field in the Saudi framework for qualifications and their reflection in the program.

The following table shows the extent of the program's consistency with the Saudi Framework for Qualifications:

| Field of comparison            | Benchmark (NQF)   | Program                                       | The extent to which the program is consistent with (NQF)                                                                                                                                             |
|--------------------------------|-------------------|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Program level and degree title | Level 6 Bachelor  | Level 6 Bachelor of Construction Engineering. | The program title describes the level of the degree and the major as introduced in NQF                                                                                                               |
| Credit hours                   | ≥120              | 165                                           | The Credit hours are consistent with NQF because it falls within the specified range for the number of hours for undergraduate programs in the NQF, which exceeding the minimum of 120 credit hours. |
| Study duration                 | >3 academic years | 5 years                                       | The duration of the study to obtain the qualification is consistent with NQF because it falls within the specified range for the duration of the                                                     |

|                                           |   |                                                                                                                                            |                                                                                                                                                                                                                                                                                   |
|-------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           |   |                                                                                                                                            | study to obtain the qualification for undergraduate programs in the NQF, which exceeding the minimum of 3 academic years.                                                                                                                                                         |
| Obtaining secondary education certificate | a | Must have                                                                                                                                  | Students have to obtain a secondary education certificate as a requirement for the enrollment in the program                                                                                                                                                                      |
| Domain of learning outcomes               |   | <ul style="list-style-type: none"> <li>Knowledge and Understanding</li> <li>Skills</li> <li>Values, Autonomy and Responsibility</li> </ul> | <ul style="list-style-type: none"> <li>Knowledge and Understanding</li> <li>Skills</li> <li>Values, Autonomy and Responsibility</li> </ul> <p>The learning domains are consistent as the program has the same classification of learning outcomes areas mentioned in the NQF.</p> |

To create an output consistency matrix it must:

First: A review of the intended learning outcomes for the bachelor's level with NQF with coding.

Second: A review of the specific learning outcomes of the Construction Engineering Bachelor's Program

Third: the work of a consistency matrix

**First: The targeted learning outcomes of the Bachelor's program in the Saudi Qualifications Framework**

| Domains of learning outcomes (NQF) |                               | code                                  | Learning outcomes for level 6, bachelor's degree                                                                                                                           |
|------------------------------------|-------------------------------|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Knowledge and Understanding</b> |                               | The graduate at this level will have: |                                                                                                                                                                            |
|                                    |                               | K1                                    | broad in-depth integrated body of knowledge and understanding of the underlying theories, principles, and concepts in one or more disciplines or field of work;            |
|                                    |                               | K2                                    | in depth knowledge and understanding of processes, materials, techniques, practices, conventions and/or terminology;                                                       |
|                                    |                               | K3                                    | a broad range of specialized knowledge and understanding informed by current developments of a discipline, profession, or field of work;                                   |
|                                    |                               | K4                                    | knowledge and understanding of research methodology and inquire techniques.                                                                                                |
| <b>Skills</b>                      | Cognitive Skills              | S1                                    | apply broad integrated underlying theories, principles, and concepts in various contexts, in a discipline, profession, or field of work;                                   |
|                                    |                               | S2                                    | solve problems in various complex contexts in one or more disciplines or field of work.                                                                                    |
|                                    |                               | S3                                    | use critical thinking and develop creative solutions to current issues and problems, in various complex contexts, in a discipline, profession or field of work;            |
|                                    |                               | S4                                    | practice methods of inquiry, investigation and research for complex issues and problems;                                                                                   |
|                                    | Practical and Physical Skills | S5                                    | use and adapt processes, techniques, tools, instruments, and/or materials that are advanced to deal with various complex practical activities;                             |
|                                    |                               | S6                                    | carry out various complex practical tasks and procedures related to a discipline, professional practice, or field of work;                                                 |
|                                    | Communication and ICT Skills  | S7                                    | communicate in main forms to demonstrate an understanding of theoretical knowledge and transfer specialized knowledge, skills and complex ideas to a variety of audiences; |

|                                            |                             |    |                                                                                                                                                                                                                                                        |
|--------------------------------------------|-----------------------------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                            |                             | S8 | use mathematical operations and quantitative methods to process data and information in various complex contexts, related to a discipline or field of work;                                                                                            |
|                                            |                             | S9 | Select, use and adapt various standard and specialized digital technology and ICT tools and applications to process and analyze data and information, and to support and enhance research and/or projects.                                             |
| <b>Values, Autonomy and Responsibility</b> | Values and ethics           | V1 | demonstrate commitment to professional and academic values and standards and ethical code of conduct, and represent responsible citizenship and coexistence with others;                                                                               |
|                                            | Autonomy and Responsibility | V2 | develop plans for academic and / or professional self-development, and work to achieve them effectively, assess own learning and performance, and take decisions regarding self-development and /or tasks based on convincing evidence, with autonomy; |
|                                            |                             | V3 | manage tasks and activities related to the discipline and /or work in a professional manner and with autonomy;                                                                                                                                         |
|                                            |                             | V4 | work collaboratively and constructively, and lead diverse teams to perform a wide range of tasks with responsibility, and play a major role in joint work planning and evaluation;                                                                     |
|                                            |                             | V5 | Participate actively in development of the discipline and society.                                                                                                                                                                                     |

| <b>Second: The targeted learning outcomes of Construction Engineering Bachelor's Program</b> |             |                                                                                                                                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Domain of Program learning outcomes (PLO'S)</b>                                           | <b>code</b> | <b>Construction Engineering Program Learning Outcomes (PLO'S)</b>                                                                                                                                                                                                                          |
| <b>Knowledge and Understanding</b>                                                           | <b>K1</b>   | Illustrate deep and distinct knowledge and understanding of concepts, theories and principles of physics, mathematics, geology, soil mechanics, engineering and science related to construction engineering.                                                                               |
|                                                                                              | <b>K2</b>   | Use acquired knowledge and understanding of processes, materials, techniques, practices and terminology, as well as engineering specialization to solve the social, economical, environmental issues related the construction engineering practice                                         |
| <b>Skills</b>                                                                                | <b>S1</b>   | apply broad integrated underlying theories, principles, concepts in the area of construction engineering using first principles of mathematics, engineering sciences, research-based knowledge including design of experiments, and synthesis of information to provide valid conclusions. |
|                                                                                              | <b>S2</b>   | Arriving at solutions for complex construction engineering problems, while considering public health, safety and welfare, global, cultural, societal, environmental and economic factors.                                                                                                  |
|                                                                                              | <b>S3</b>   | Use critical thinking and develop innovative solutions, based on feasibility studies, for construction engineering problems through analyzing the data collected and interpret results.                                                                                                    |
|                                                                                              | <b>S4</b>   | Select, and apply appropriate resources and modern engineering and computing tools, including prediction and modelling, to complex engineering activities, with an understanding of the limitations.                                                                                       |
|                                                                                              | <b>S5</b>   | Perform experiments needed in performing laboratory and field work correctly through sufficient practicing.                                                                                                                                                                                |
| <b>Values, Autonomy and Responsibility</b>                                                   | <b>V1</b>   | Appraise the ethical and professional issues that include values and moral judgments which make them sensitive to others and committed to the values and ethics of professional practice.                                                                                                  |
|                                                                                              | <b>V2</b>   | Evaluate the team working and leadership qualities such as taking initiative, critical thinking, listening effectively and motivating others.                                                                                                                                              |

### Conclusion

Through the previous comparison, it is evident that there is consistency between the National Framework for Qualifications (NQF) and the Construction Engineering program in terms of:

| Field of comparison                      | The extent to which the program is consistent with the national framework                                                                                                                            |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Program level and degree title        | The program is consistent with the National Qualifications Framework in terms of the title of the academic degree, as well as the level specified for the Bachelor's degree.                         |
| 2. Number of credit hours                | The number of credit hours for the program is consistent with the National Qualifications Framework, as it is <b>165</b> hours, which is higher than the minimum required in the framework.          |
| 3. Domains of learning outcomes          | The classification of learning domains of the program is consistent with the NQF as it addresses the following domains: Knowledge and Understanding, skills and Values, Autonomy and Responsibility. |
| 4. The consistency of learning outcomes. | The learning outcomes matrix shows the reflection of all learning outcomes for the level <b>6</b> defined in the NQF in the <b>Construction Engineering</b> program learning outcomes.               |

## C. Curriculum

### 1. Curriculum Structure

1. Program Description: List the core and elective program courses offered each semester from Prep Year to graduation using the below Curriculum Study Plan Table (A separate table is required for each branch IF a given branch offers a different study plan).

A program or department manual should be available for students or other stakeholders and a copy of the information relating to this program should be attached to the program specification. This information should include required and elective courses, credit hour requirements and department/college and institution requirements, and details of courses to be taken in each year or semester.

### 2. Program Study Plan

#### Curriculum Study Plan Table

\* **Prerequisite** – list course code numbers that are required prior to taking this course.

#### 1<sup>st</sup>Year (Preparatory Year) (Total Credits 32)

| First Level |                        |              |         |         |     | Second Level |                             |                        |         |         |     |
|-------------|------------------------|--------------|---------|---------|-----|--------------|-----------------------------|------------------------|---------|---------|-----|
| No.         | Course Title           | Prerequisite | credits | lecture | lab | No.          | Course Title                | Prerequisite           | credits | lecture | lab |
| 48001004-3  | Learning Skills        | ----         | 3       | 6       | 0   | 48001300-4   | General Physics I           | ----                   | 4       | 3       | 3   |
| 48001400-4  | Introduction to Math I | ----         | 4       | 4       | 0   | 48001401-4   | Introduction to Math II     | Introduction to Math I | 4       | 4       | 0   |
|             | General Chemistry      | ----         | 4       | 3       | 3   | 48001503-3   | Computer Programming Skills | ----                   | 3       | 2       | 3   |
| 48001700-6  | English Language       | ----         | 6       | 16      | 0   | 48001701-4   | Technical English Language  | English Language       | 4       | 12      | 0   |

|       |    |    |   |
|-------|----|----|---|
| Total | 17 | 29 | 3 |
|-------|----|----|---|

|       |    |    |   |
|-------|----|----|---|
| Total | 15 | 21 | 6 |
|-------|----|----|---|

### 2<sup>nd</sup> Year: Freshman (Total Credits 33)

| Third Level |                                          |                         |         |         |     |
|-------------|------------------------------------------|-------------------------|---------|---------|-----|
| No.         | Course Title                             | Prerequisite            | credits | lecture | lab |
| 57001001-3  | Differential Equations for Engineers     | Introduction to Math II | 3       | 3       | 0   |
| 57001005-4  | General Physics II                       | General Physics I       | 4       | 3       | 3   |
| 57011103-2  | Introduction to Construction Engineering | ---                     | 2       | 2       | 0   |
| 57011104-2  | Engineering Economics                    | ---                     | 2       | 2       | 0   |
| 57021100-2  | Engineering Graphics                     | ---                     | 2       | 1       | 5   |
| 28011001-2  | Holly Quran I                            | ----                    | 2       | 2       | 0   |
| 28071001-2  | Islamic Culture I                        | -----                   | 2       | 2       | 0   |
| Total       |                                          |                         | 17      | 15      | 8   |

| Fourth Level |                              |                         |         |         |     |
|--------------|------------------------------|-------------------------|---------|---------|-----|
| No.          | Course Title                 | Prerequisite            | credits | lecture | lab |
| 57001002-3   | Linear Algebra for Engineers | Introduction to Math I  | 3       | 3       | 0   |
| 57001201-2   | Circuit Analysis I           | Introduction to Math II | 2       | 1       | 3   |
| 57011102-2   | Geology                      | ---                     | 2       | 2       | 0   |
| 57011105-3   | Statics                      | Introduction to Math II | 3       | 3       | 0   |
| 57011501-2   | Civil Drawing                | Engineering Graphics    | 2       | 1       | 5   |
| 28012001-2   | Holly Quran II               | Holly Quran I           | 2       | 2       | 0   |
| 28072001-2   | Islamic Culture II           | Islamic Culture I       | 2       | 2       | 0   |
| Total        |                              |                         | 16      | 14      | 8   |

### 3<sup>rd</sup> Year: Sophomore (Total Credits 35+1)

| Fifth Level |                       |                                      |         |         |     |
|-------------|-----------------------|--------------------------------------|---------|---------|-----|
| No.         | Course Title          | Prerequisite                         | credits | lecture | lab |
| 57012106-1  | Engineering Reports   | Technical English Language           | 1       | 1       | 0   |
| 57012201-3  | Fluid Mechanics       | Statics                              | 3       | 2       | 3   |
| 57012301-3  | Structural Analysis I | Statics                              | 3       | 2       | 3   |
| 57012502-3  | Strength of Materials | Statics                              | 3       | 2       | 3   |
| 57012504-3  | Surveying             | Civil Drawing                        | 3       | 2       | 3   |
| 57022101-3  | Thermal Engineering   | Differential Equations for Engineers | 3       | 2       | 3   |
| 28013001-2  | Holly Quran III       | Holly Quran II                       | 2       | 2       | 0   |
| Total       |                       |                                      | 18      | 13      | 15  |

| Sixth Level |                                        |                         |         |         |     |
|-------------|----------------------------------------|-------------------------|---------|---------|-----|
| No.         | Course Title                           | Prerequisite            | credits | lecture | lab |
| 57002003-3  | Engineering Statistics and Probability | Introduction to Math II | 3       | 3       | 0   |
| 57012206-2  | Hydraulics                             | Fluid Mechanics         | 2       | 1       | 3   |
| 57012302-3  | Structural Analysis II                 | Structural Analysis I   | 3       | 3       | 0   |
| 57012503-3  | Construction Materials                 | Strength of Materials   | 3       | 2       | 3   |
| 57011505-3  | Buildings Construction                 | Civil Drawing           | 3       | 3       | 0   |
| 28073001-3  | Islamic Culture III                    | Islamic Culture II      | 3       | 3       | 0   |
| Total       |                                        |                         | 17      | 15      | 6   |

Summer Training I (570122901-1) [pass 80 credits]

### 4<sup>th</sup> Year: Junior (Total Credits 33+1)

| Seventh Level |
|---------------|
|---------------|

| Eighth Level |
|--------------|
|--------------|

| No.        | Course Title                      | Prerequisite                 | credits | lecture | lab |
|------------|-----------------------------------|------------------------------|---------|---------|-----|
| 57003004-3 | Engineering Computational Methods | Linear Algebra for Engineers | 3       | 2       | 3   |
| 57013202-3 | Sanitary Engineering              | Fluid Mechanics              | 3       | 3       | 0   |
| 57013303-3 | Concrete Structures Design I      | Structural Analysis II       | 3       | 3       | 0   |
| 57013401-3 | Soil Mechanics                    | Geology                      | 3       | 2       | 3   |
| 57013601-2 | Construction Cost Estimating      | Buildings Construction       | 2       | 2       | 0   |
| 28071002-2 | The Biography of Prophet Muhammad | ----                         | 2       | 2       | 0   |
| Total      |                                   |                              | 16      | 14      | 6   |

| No.        | Course Title                                  | Prerequisite                 | credits | lecture | lab |
|------------|-----------------------------------------------|------------------------------|---------|---------|-----|
| 57013304-2 | Concrete Structures Design II                 | Concrete Structures Design I | 2       | 2       | 0   |
| 57013305-3 | Steel Structure Design                        | Structural Analysis II       | 3       | 3       | 0   |
| 57013402-4 | Foundation Engineering                        | Soil Mechanics               | 4       | 4       | 0   |
| 57013506-3 | Construction Equipments and Methods           | Buildings Construction       | 3       | 3       | 0   |
| 57013603-3 | Construction Planning, Scheduling and Control | Construction Cost Estimating | 3       | 3       | 0   |
| 28021001-2 | Arabic Language                               | ----                         | 2       | 2       | 0   |
| Total      |                                               |                              | 17      | 17      | 0   |

### Summer Training II (57013902-1) [pass 120 credits]

## 5<sup>th</sup> Year: Senior (Total Credits 30)

| Ninth Level |                                              |                                               |         |         |     |
|-------------|----------------------------------------------|-----------------------------------------------|---------|---------|-----|
| No.         | Course Title                                 | Prerequisite                                  | credits | lecture | lab |
| 57014908-1  | Senior Project I                             | [pass 120 credits]                            | 1       | 1       | 0   |
| 57014203-3  | Highway Engineering                          | Soil Mechanics                                | 3       | 3       | 0   |
| 57014507-3  | Maintenance and Rehabilitation of Structures | Building Construction                         | 3       | 3       | 0   |
| 57014101-1  | Engineering Ethics                           | ----                                          | 1       | 1       | 0   |
| 57014605-2  | Risk Management in Construction Projects     | Construction Planning, Scheduling and Control | 2       | 2       | 0   |
| 57014xxx-3  | Elective I                                   | ----                                          | 3       | 3       | 0   |
| 28014001-2  | Holly Quran IV                               | Holly Quran III                               | 2       | 2       | 0   |
| Total       |                                              |                                               | 15      | 15      | 0   |

| Tenth Level |                              |                              |         |         |     |
|-------------|------------------------------|------------------------------|---------|---------|-----|
| No.         | Course Title                 | Prerequisite                 | credits | lecture | lab |
| 57014909-3  | Senior Project II            | Senior Project I             | 3       | 3       | 0   |
| 57014604-2  | Contracts and Specifications | Construction Cost Estimating | 2       | 2       | 0   |
| 57014204-3  | Harbour Engineering          | Hydraulics                   | 3       | 3       | 0   |
| 57014602-2  | Project Financial Management | Engineering Economics        | 2       | 2       | 0   |
| 57014xxx-3  | Elective II                  | ----                         | 3       | 3       | 0   |
| 28074001-2  | Islamic Culture IV           | Islamic Culture III          | 2       | 2       | 0   |
| Total       |                              |                              | 15      | 15      | 0   |



Preparation Requirements



University Requirements



College Requirements



Department Requirements

| Elective courses |                            |              |         |         |     |
|------------------|----------------------------|--------------|---------|---------|-----|
| Course No.       | Course Title               | Prerequisite | credits | lecture | lab |
| 57014205-3       | Transportation Engineering | Surveying    | 3       | 3       | 0   |
| 57014207-3       | Hydrology                  | Hydraulics   | 3       | 3       | 0   |
| 57014208-3       | Hydraulic Structures       | Hydraulics   | 3       | 3       | 0   |

|            |                                                 |                                               |   |   |   |
|------------|-------------------------------------------------|-----------------------------------------------|---|---|---|
| 57014209-3 | Railway Engineering                             | Surveying                                     | 3 | 3 | 0 |
| 57014306-3 | Bridges Engineering                             | Concrete Structures Design II                 | 3 | 3 | 0 |
| 57014307-3 | Prestressed Concrete                            | Concrete Structures Design II                 | 3 | 3 | 0 |
| 57014308-3 | High Rise Buildings                             | Concrete Structures Design II                 | 3 | 3 | 0 |
| 57014309-3 | Structural Dynamics                             | Structural Analysis II                        | 3 | 3 | 0 |
| 57014403-3 | Retaining Structures                            | Foundation Engineering                        | 3 | 3 | 0 |
| 57014404-3 | Tunnel and Underground Structures               | Soil Mechanics                                | 3 | 3 | 0 |
| 57014405-3 | Soil Dynamics                                   | Foundation Engineering                        | 3 | 3 | 0 |
| 57014508-3 | Green Building                                  | -                                             | 3 | 3 | 0 |
| 57014509-3 | Modelling in Construction Engineering           | Engineering Computational Methods             | 3 | 2 | 3 |
| 57014606-3 | Construction Scheduling Software                | Construction Planning, Scheduling and Control | 3 | 2 | 3 |
| 57014607-3 | Construction Safety and Protection              | Construction Planning, Scheduling and Control | 3 | 3 | 0 |
| 57014608-3 | Real Estate Management                          | Engineering Economics                         | 3 | 3 | 0 |
| 57014701-3 | Computer Applications in Construction Surveying | Surveying                                     | 3 | 2 | 3 |
| 57014903-3 | Contemporary Topics in Construction Engineering | Structural Analysis II                        | 3 | 3 | 0 |
| 57014904-3 | Contemporary Topics in Construction Management  | Construction Planning, Scheduling and Control | 3 | 3 | 0 |

### 3. Course Specifications

Insert hyperlink for all course specifications using NCAAA template

[https://uquadmin-my.sharepoint.com/:f:/g/personal/amalessa\\_uqu\\_edu\\_sa/EuoohUxr\\_KJJuZ5eDa0eEIUBIXLAlAoJXmE7SM5sqXpIHw?e=VJ21Ay](https://uquadmin-my.sharepoint.com/:f:/g/personal/amalessa_uqu_edu_sa/EuoohUxr_KJJuZ5eDa0eEIUBIXLAlAoJXmE7SM5sqXpIHw?e=VJ21Ay)

### 4. Program learning Outcomes Mapping Matrix

#### Program Learning Outcomes Mapping Matrix

Identify on the table below the courses that are required to achieve the program learning outcomes. Insert the program learning outcomes, according to the level of instruction, from the above table below and indicate the courses and levels that are required to teach each one; use your program's course numbers across the top and the following level scale. Levels: I = Introduction P = Proficient A = Advanced (see help icon)

| Course code & No. | Program Learning Outcomes   |    |        |    |    |    |    |    |    |        |
|-------------------|-----------------------------|----|--------|----|----|----|----|----|----|--------|
|                   | Knowledge and understanding |    | Skills |    |    |    |    |    |    | Values |
|                   | K1                          | K2 | S1     | S2 | S3 | S4 | S5 | S7 | S9 | V1 V4  |
| 57001001-3        | *                           |    |        |    |    |    |    |    |    |        |
| 57001005-4        | *                           |    |        |    |    |    |    |    |    |        |
| 57011103-2        |                             | *  |        |    | *  |    |    | *  |    | *      |

|            |   |   |   |   |   |   |   |   |   |  |   |
|------------|---|---|---|---|---|---|---|---|---|--|---|
| 57011104-2 | * |   | * |   |   |   |   |   |   |  |   |
| 57021100-2 |   |   |   |   |   | * |   |   | * |  |   |
| 28011001-2 |   |   |   |   |   |   |   |   |   |  |   |
| 28071001-2 |   |   |   |   |   |   |   |   |   |  |   |
| 57001002-3 | * |   |   |   |   |   |   |   |   |  |   |
| 57001201-2 |   |   | * |   |   |   |   |   |   |  | * |
| 57011102-2 | * |   |   |   |   |   |   |   |   |  |   |
| 57011105-3 |   |   | * |   |   |   |   |   |   |  |   |
| 57011501-2 |   |   |   |   |   | * |   |   | * |  |   |
| 28012001-2 |   |   |   |   |   |   |   |   |   |  |   |
| 28072001-2 |   | * |   |   |   |   |   |   |   |  |   |
| 57012106-1 |   |   |   |   |   |   |   | * |   |  | * |
| 57012201-3 | * |   | * |   |   |   |   |   |   |  | * |
| 57012301-3 | * |   | * |   |   |   |   |   | * |  |   |
| 57012502-3 | * | * | * |   |   |   | * |   |   |  | * |
| 57012504-3 |   |   | * |   |   |   | * |   |   |  | * |
| 57022101-3 | * | * | * | * |   |   | * |   |   |  | * |
| 28013001-2 |   |   |   |   |   |   |   |   |   |  |   |
| 57002003-3 | * |   | * |   | * |   |   |   |   |  |   |
| 57012206-2 |   |   | * |   |   |   | * |   |   |  | * |
| 57012302-3 | * |   |   | * |   |   |   |   |   |  |   |
| 57012503-3 | * | * |   |   |   |   | * |   | * |  | * |
| 57011505-3 |   | * |   | * |   |   |   |   |   |  |   |
| 28073001-3 |   |   |   |   |   |   |   |   |   |  |   |
| 57003004-3 | * |   | * |   |   |   |   |   | * |  |   |
| 57013202-3 |   | * |   | * | * | * |   |   |   |  |   |
| 57013303-3 |   |   | * |   |   |   |   |   | * |  |   |
| 57013401-3 | * |   |   |   |   |   |   |   |   |  | * |
| 57013601-2 |   | * |   | * | * |   |   |   |   |  |   |
| 28071002-2 |   |   |   |   |   |   |   |   |   |  |   |
| 57013304-2 |   |   | * |   |   |   |   |   | * |  | * |
| 57013305-3 |   |   | * |   |   |   |   |   | * |  | * |
| 57013402-4 |   |   | * | * |   |   |   |   | * |  |   |
| 57013506-3 |   | * |   | * | * | * |   |   |   |  |   |
| 57013603-3 |   | * |   |   | * | * |   |   |   |  |   |
| 28021001-2 |   |   |   |   |   |   |   |   |   |  |   |

|            |  |   |  |   |   |   |   |   |   |   |   |
|------------|--|---|--|---|---|---|---|---|---|---|---|
| 57014908-1 |  |   |  |   |   |   |   |   |   |   | * |
| 57014203-3 |  |   |  | * | * |   |   |   | * |   |   |
| 57014507-3 |  | * |  | * | * |   |   |   |   |   |   |
| 57014101-1 |  |   |  |   |   |   |   |   |   | * |   |
| 57014605-2 |  |   |  |   | * |   |   |   |   |   |   |
| 57014xxx-3 |  |   |  |   |   |   |   |   |   |   |   |
| 28014001-2 |  |   |  |   |   |   |   |   |   |   |   |
| 57014909-3 |  |   |  | * |   |   | * | * | * | * | * |
| 57014604-2 |  | * |  |   | * | * |   |   |   | * |   |
| 57014204-3 |  |   |  | * |   | * |   |   |   |   |   |
| 57014602-2 |  | * |  |   | * | * |   |   |   |   |   |
| 57014xxx-3 |  |   |  |   |   |   |   |   |   |   |   |
| 28074001-2 |  |   |  |   |   |   |   |   |   |   |   |
| 57014205-3 |  |   |  |   |   |   |   |   |   |   |   |
| 57014207-3 |  |   |  |   |   |   |   |   |   |   |   |
| 57014208-3 |  |   |  |   |   |   |   |   |   |   |   |
| 57014209-3 |  |   |  |   |   |   |   |   |   |   |   |
| 57014306-3 |  |   |  |   |   |   |   |   |   |   |   |
| 57014307-3 |  |   |  |   |   |   |   |   |   |   |   |
| 57014308-3 |  |   |  |   |   |   |   |   |   |   |   |
| 57014309-3 |  |   |  |   |   |   |   |   |   |   |   |
| 57014403-3 |  |   |  |   |   |   |   |   |   |   |   |
| 57014404-3 |  |   |  |   |   |   |   |   |   |   |   |
| 57014405-3 |  |   |  |   |   |   |   |   |   |   |   |
| 57014508-3 |  |   |  |   |   |   |   |   |   |   |   |
| 57014509-3 |  |   |  |   |   |   |   |   |   |   |   |
| 57014606-3 |  |   |  |   |   |   |   |   |   |   |   |
| 57014607-3 |  |   |  |   |   |   |   |   |   |   |   |
| 57014608-3 |  |   |  |   |   |   |   |   |   |   |   |
| 57014701-3 |  |   |  |   |   |   |   |   |   |   |   |
| 57014903-3 |  |   |  |   |   |   |   |   |   |   |   |
| 57014904-3 |  |   |  |   |   |   |   |   |   |   |   |

### 5. Teaching and learning strategies to achieve program learning outcomes

Describe policies, teaching and learning strategies, learning experience, and learning activities, including curricular and extra-curricular activities, to achieve the program learning outcomes.

The lecture - Supporting readings – Group discussions - Writing reports- Lab testing and reports.

**Described in detail under (5. Program learning Outcomes). Check the link:**  
[7- Program learning outcomes assessment plan and reports - OneDrive \(sharepoint.com\)](#)

#### **6. Assessment Methods for program learning outcomes.**

Describe assessment methods (Direct and Indirect) that can be used to measure achievement of program learning outcomes in every domain of learning.

What the Construction Engineering program, like other programs, strives for is that the knowledge and skills (program learning outcomes) instilled in its fresh graduates will meet, after a few working years, its goals that are expected by the workforce (stakeholders). If the graduates do not meet the program goals, then the processes should be improved in order to improve the quality of its product, namely the outcomes, and hence meet the goals and thus satisfy customers. To guarantee quality output, our program continuously assesses and evaluates its levels of attainments of its outcomes.

The program applies appropriate mechanisms and tools for measuring the graduate attributes and learning outcomes, and verifying their achievement according to specific performance levels and assessment plans [3-1-4]. These follow the steps consisting of: first gathering the data which is necessary for the assessments. Evaluation, in the form of interpreting the data, is then carried out in order to determine how well the outcomes are being attained with regard to a specified acceptable level set by the program. Finally, the results of both the assessment and evaluation are finally utilized for the continuous improvement of the program.

To set the stage for the assessment process, the material covered in each course, together with its expected course learning outcomes (CLOs) are used to identify the PLOs that are most probably be covered by the course. The course specification of the program includes such things as the curricula and their mapping to the outcomes in such a way that each course contributes to few of the outcomes. Care is followed to ensure that all courses contribute to the outcomes in a coordinated manner to ensure effective progressive development of learning for the total program in all the domains of learning.

To this end, each course identifies some specific number of measurable (CLOs) that are aligned with some of the PLOs and these CLOs are mapped to the chosen different PLOs [3-2-7]. The resulting mappings are collected for the courses and stored in the course to PLO mapping matrix found in the course specifications. Observing this matrix horizontally, we can see that each course is mapped onto some PLOs and vertically, each PLO is covered by some courses.

|    | Domain                                                                                                                                                                                                                 | Assessment Methods                                                                                                                                                                                    |                             |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
|    |                                                                                                                                                                                                                        | Curricular activities                                                                                                                                                                                 | Extra-curricular activities |
|    | Knowledge and Understanding.                                                                                                                                                                                           |                                                                                                                                                                                                       |                             |
| K1 | An ability to identify, formulate, and solve complex civil engineering problems by applying principles of engineering, science, and mathematics.                                                                       | <ul style="list-style-type: none"><li>• Lectures,</li><li>• Tutorials</li><li>• Lab demonstrations</li><li>• Projects</li><li>• Presentations</li><li>• Class discussions and brainstorming</li></ul> |                             |
| K2 | An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety and welfare, as well as global, cultural, social, environmental and economic factors |                                                                                                                                                                                                       |                             |
|    | Skills                                                                                                                                                                                                                 |                                                                                                                                                                                                       |                             |

|    |                                                                                                                                                                                                                                              |                                                                                                                                                                                                       |                                                                                                                                                     |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| S1 | An ability to identify, formulate, and solve complex civil engineering problems by applying principles of engineering, science, and mathematics                                                                                              | <ul style="list-style-type: none"><li>• Lectures,</li><li>• Tutorials</li><li>• Lab demonstrations</li><li>• Projects</li><li>• Presentations</li><li>• Class discussions and brainstorming</li></ul> | <ul style="list-style-type: none"><li>• Field activities (visits, testing, observations...)</li><li>• Class discussions and brainstorming</li></ul> |
| S2 | An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety and welfare, as well as global, cultural, social, environmental and economic factors                       |                                                                                                                                                                                                       |                                                                                                                                                     |
| S3 | <b>S3</b> An ability to Communicate effectively with a range of audiences.                                                                                                                                                                   |                                                                                                                                                                                                       |                                                                                                                                                     |
| S4 | An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.                                                                                                 |                                                                                                                                                                                                       |                                                                                                                                                     |
|    | <b>Values</b>                                                                                                                                                                                                                                |                                                                                                                                                                                                       |                                                                                                                                                     |
| V1 | An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgements, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts. | <ul style="list-style-type: none"><li>• Lectures,</li><li>• Tutorials</li><li>• Lab demonstrations</li><li>• Projects</li><li>• Presentations</li><li>• Class discussions and brainstorming</li></ul> | <ul style="list-style-type: none"><li>• Field activities (visits, testing, observations...)</li><li>• Class discussions and brainstorming</li></ul> |
| V2 | An ability to acquire and apply new knowledge as needed, using appropriate strategies.                                                                                                                                                       |                                                                                                                                                                                                       |                                                                                                                                                     |
| V3 | An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plans tasks, and meet                                                             |                                                                                                                                                                                                       |                                                                                                                                                     |

**\* Indirect Assessment:**

- 1 Student Experience Survey
- 2 Program Evaluation Survey
- 3 Course Evaluation Survey
- 4 Alumni Survey
- 5 Employer Survey

## D. Student Admission and Support:

### 1. Student Admission Requirements

Attach handbook or bulletin description of admission requirements including any course or experience prerequisites.

The College of Engineering Council in Qunfudhah shall determine the number of students who can be admitted in each department of the College in accordance with the Kingdom's comprehensive development plan. In addition to the general conditions for admission to Umm Al-Qura University, which is mentioned in the list of studying and tests for the undergraduate.

#### **Admission Requirements:**

- a. The applicant should be a Saudi citizen or born to a Saudi mother (non-Saudis may apply for scholarship programs).
- b. The applicant must be holding secondary school certificate (or an equivalent) from the Saudi Kingdom or abroad.
- c. The secondary school certificate or its equivalent must be a recent one (not exceeding 5 years). For the Colleges of Medicine, Pharmacy, and Health Sciences, the secondary school certificate should not be more than 2 years old.
- d. The student must pass the required admission tests (General Aptitude Test [GAT] and the Summative Assessment), organized by the National Center for Assessment, if required by the desired department.
- e. The student must pass any other exam or interview required by the college (recitations, judicial studies, physical education, art education, Shari'ah, etc.)
- f. The applicant must have not been dismissed from the UQU University or any other university for disciplinary reasons.

Check the link (<https://uqu.edu.sa/en/dadregis/bsc>)

## **2. Guidance and Orientation Programs for New Students**

Attach handbook or bulletin description of requirements for:

- a. Attendance: **At least 75% of the lectures.**
- b. Progression from year to year: **Minimum success per course 60%.**
- c. Program completion or graduation requirements: **Completing the program**

Check the links (<https://uqu.edu.sa/en/studaff/166>  
[https://drive.uqu.edu.sa/\\_dadregis/files/43/LD432HJ.pdf](https://drive.uqu.edu.sa/_dadregis/files/43/LD432HJ.pdf))  
[دليل الطالب الجامعي - OneDrive \(sharepoint.com\)](#)

## **3. Student Counseling Services**

(academic, career, psychological and social )

Describe arrangements for academic counselling and advising for students, including both scheduling of faculty office hours and advising on program planning, subject selection and career planning (which might be available at college level).

- 1- Each student has an academic advisor.
- 2- At least 6 office hours a week are scheduled by each faculty member.
- 3- Faculty member is assigned to advise group of students selecting their courses in a semester.
- 4- Faculty member explain to students how to choose the appropriate elective courses.
- 5- Faculty member help students solving problems.
- 6- Faculty member advise students planning their career.

The department organizes various meetings with the students to explain important academic issues.

Check the link [كتيب حقوق الطالب لأعضاء هيئة التدريس - OneDrive \(sharepoint.com\)](#)

#### **4. Special Support**

(low achievers, disabled, gifted and talented)

Most students who are enrolled in the Construction Engineering program have major difficulties with the English language which is the teaching language of the program. In addition, most students have poor math skills. Furthermore, the entrance requirements of the program are mainly set by UOH deanship of Admission and Registration.

Moreover, the student appeals on academic matters, including processes for consideration of those appeals.

Regulations for academic appeals are according to the policy of the Ministry of Higher Education in Saudi Arabia.

## E. Teaching and Administrative Staff

### 1. Needed Teaching and Administrative Staff

| Academic Rank                         | Specialty         |                    | Special Requirements / Skills (if any) | Required Numbers |   |   |
|---------------------------------------|-------------------|--------------------|----------------------------------------|------------------|---|---|
|                                       | General           | Specific           |                                        | M                | F | T |
| Professors                            | ✓                 |                    |                                        | 1                |   | 1 |
| Associate Professors                  |                   |                    |                                        | 0                |   | 0 |
| Assistant Professors                  |                   |                    |                                        | 0                |   | 0 |
| Lecturers                             |                   |                    |                                        | 0                |   | 0 |
| Teaching Assistants                   |                   |                    |                                        | 0                |   | 0 |
| Technicians and Laboratory Assistants | ✓                 | Total 7 Laboratory |                                        | 4                |   | 4 |
| Administrative and Supportive Staff   | General Education |                    | Skill on MS Office for documentation   | 1                |   | 1 |
| Others (specify)                      |                   |                    |                                        | 0                |   | 0 |

| Comparison of similar programs                    |                      | K. S. Univ.<br>Coll. of Eng.<br>Majma'ah<br>C. E. Depart. |         | K. A. Univ.<br>Coll. of Eng.<br>C. E. Depart. |         | Univ. of Jord.<br>Coll. of Eng.<br>and Techno.<br>I. E. Depart. |         | The current program |         |
|---------------------------------------------------|----------------------|-----------------------------------------------------------|---------|-----------------------------------------------|---------|-----------------------------------------------------------------|---------|---------------------|---------|
| Total units for programs and courses              |                      | units                                                     | Courses | units                                         | Courses | units                                                           | Courses | units               | Courses |
|                                                   |                      | 163                                                       | 56      | 155                                           | 50      | 160                                                             | 61      | 165                 | 58      |
| Distribution of units and courses on requirements |                      | units                                                     | Courses | units                                         | Courses | units                                                           | Courses | units               | Courses |
| University requirements                           |                      | 12                                                        | 6       | 75                                            | 25      | 27                                                              | 9       | 10                  | 21      |
| College requirements                              |                      | 61                                                        | 20      |                                               |         | 21                                                              | 9       | 11                  | 54      |
| Department requirements                           |                      | 90                                                        | 30      | 0                                             | 46      | 112                                                             | 43      | 35                  | 90      |
| Specialization requirements                       | Mandatory            | 90                                                        |         | 68                                            | 20      | 91                                                              | 36      | 84                  | 30      |
|                                                   | Elective             | 0                                                         | 0       | 12                                            | 5       | 21                                                              | 7       | 6                   | 2       |
|                                                   | The research project | 5                                                         | 0       | 4                                             | 1       | 3                                                               | 1       | 4                   | 2       |
|                                                   | Field Experience     | 1                                                         | 0       | 4                                             | 2       | 0                                                               | 0       | 2                   | 2       |

## 2. Professional Development

### 2.1 Orientation of New Teaching Staff

Describe briefly the process used for orientation of new, visiting and part-time teaching staff

- 1- The new teaching staff is given an orientation course and provided with the handbooks.
- 2- A new teaching staff will be in contact with the course coordinator

3- New teaching staff has to recognize and understand the department program

## **2.2 Professional Development for Teaching Staff**

Describe briefly the plan and arrangements for academic and professional development of teaching staff (e.g., teaching & learning strategies, learning outcomes assessment, professional development, etc.)

### **a. Improvement of skills in teaching and student assessment?**

UQU has also established the Skills Development Center (SDC), which has adopted the concepts and practices of on-going self-development for the professional skills of the faculty, lecturers, teaching assistants, the academic and administrative leaders, and other employees, and the development of the students' skills to improve the quality of JU's outcomes in a way that contributes to the provision of a suitable environment and ease of achieving academic development. Some of the objectives of the SDC are:

- Identifying needs of faculty members and staff, and designing professional development programs accordingly.
- Preparing special training packages for the development and improvement of the skills and abilities of the faculty members, administrators, and students, according to priorities.
- Preparation, organization, and implementation of internal and external training courses and workshops.

The faculty of the CE program attended the following workshops:

1. Effective teaching strategies.
2. Building the achievement tests in the university stage.
3. Recent trends in curriculum design.
4. Funding scientific research and grants.
5. Active learning strategies.
6. Citation and scientific documentation of research.
7. Effective teaching strategies.
8. Test preparation skills.
9. Building and managing the research team.
10. Organize and manage the scientific review using the program EndNote X7.
11. Personal Strategic Planning.
12. Development of Leadership Skills.
13. Follow up and implementation of the Strategic Plan.

Faculty members are motivated to excel through a promotion scheme that takes into account performance in teaching, research, and services. The university faculty promotion guidelines follow international standards in the profession.

### **b. Other professional development including knowledge of research and developments in their field of teaching specialty?**

1. Faculty members are encouraged to attend training courses, conferences and workshops to develop and present their research.
2. Faculty members are encouraged to participate in faculty supported and industry related research projects.
3. Staff members have access to highly specialized research databases (journals, periodicals, and conference proceedings).
4. Faculty members are encouraged to have a joint research work with experts from national and international institutions.

## F. Learning Resources, Facilities, and Equipment

### 1. Learning Resources.

Mechanism for providing and quality assurance of learning resources (textbooks, references and other resource materials, library, including electronic and web-based resources, etc.)

1a. What processes are followed by faculty and teaching staff for planning and acquisition of textbooks, reference and other resource material including electronic and web based resources?

Staff members generally follow the following processes:

- The members of CE coordination committee prepare a report that discusses the plan to provide books and references for the Civil Engineering Program.
- The committee concluded a plan starting from preparing a list of books addressed in student study plan and checking the availability of these books in central library of university
- A letter to central library should prepared to provide books that not available in the central library
- Follow-up of the transaction sent and received in advance of the previous item until the committee is notified of the requested references and books
- Also, students and teaching staff of the program have access to the Saudi digital library (SDL).

1b. What processes are followed by faculty and teaching staff for planning and acquisition resources for library, laboratories, and classrooms.

Before each semester all requirements for textbooks, laboratories and classrooms facilities are submitted to the College of Engineering Deanship. Coordinating with the University Library to provide sufficient copies of the textbooks and references required for the various courses in the program. The faculty member determines the suitability of the specialty lab according to what is being taught. The College provides appropriate classrooms for the educational process.

### 2. Facilities and Equipment

(Library, laboratories, medical facilities, classrooms, etc.).

#### Offices:

Offices of the Construction Engineering department along with other engineering departments are located in the College of Engineering Building at Alqunfudah . Each of the offices is equipped with a computer or a laptop and a printer.

As for administrative offices, they have photocopying and scanning machines, faxes and telephones.

Faculty offices as well as teaching assistants are equipped with computers or laptops for each person. Further, they have space for students during the office hours. Students can communicate with their instructors by email, phone, or at the office in addition to the Blackboard (BB) program which is a very powerful program that allows posting course materials, announcements, submitting assignments and virtual classes. Some of the technical staff have their offices located in the Laboratories Building. Particularly, there are many offices which have access to the internet and are different in the area.

#### Classrooms:

Most of the courses at the construction engineering plan of study are taught in normal classrooms. The normal classroom at the University includes a monitor and presentation systems. Courses that require special computer laboratories are scheduled in the computer teaching room. Practical courses are taught in laboratories and workshops located in the Laboratories Building.

#### Laboratory facilities:

Construction Engineering department has following well equipped dedicated laboratories.

1. Surveying Lab

2. Soil and Foundation Lab
3. Construction Materials Lab
4. Hydraulics and Fluid Mechanics Lab
5. Structure Engineering Lab
6. Engineering Drawings Lab.

Students can use these laboratories during their laboratory courses scheduled there. They can also use the laboratory with the permission of the instructor at any other time. There are also general instructions inside the laboratories that help focus during work such as: operational manuals, and safety and security precautions,

#### **Library Services:**

The Library has a sufficient number of various resources that are easily accessible and appropriate to the needs of the program and the number of students; are made available in adequate and appropriate times student sections; and are updated periodically [E 6.1.2]. The program has specialized electronic resources (e.g., digital references, multimedia, software), and appropriate databases and electronic systems that allow beneficiaries to access the information, research materials, and scientific journals from within or outside the institution[E 6.1.3]. The program has laboratories, computer and technology equipment, and materials that are suitable to the specialty and sufficient to conduct research and scientific studies according to the program goals; and applies appropriate mechanisms to maintain and update them [E 6.1.4]. The program has the suitable classrooms and facilities for its needs: <https://uqu.edu.sa/engg/39877>

### **3. Arrangements to Maintain a Healthy and Safe Environment** (According to the nature of the program )

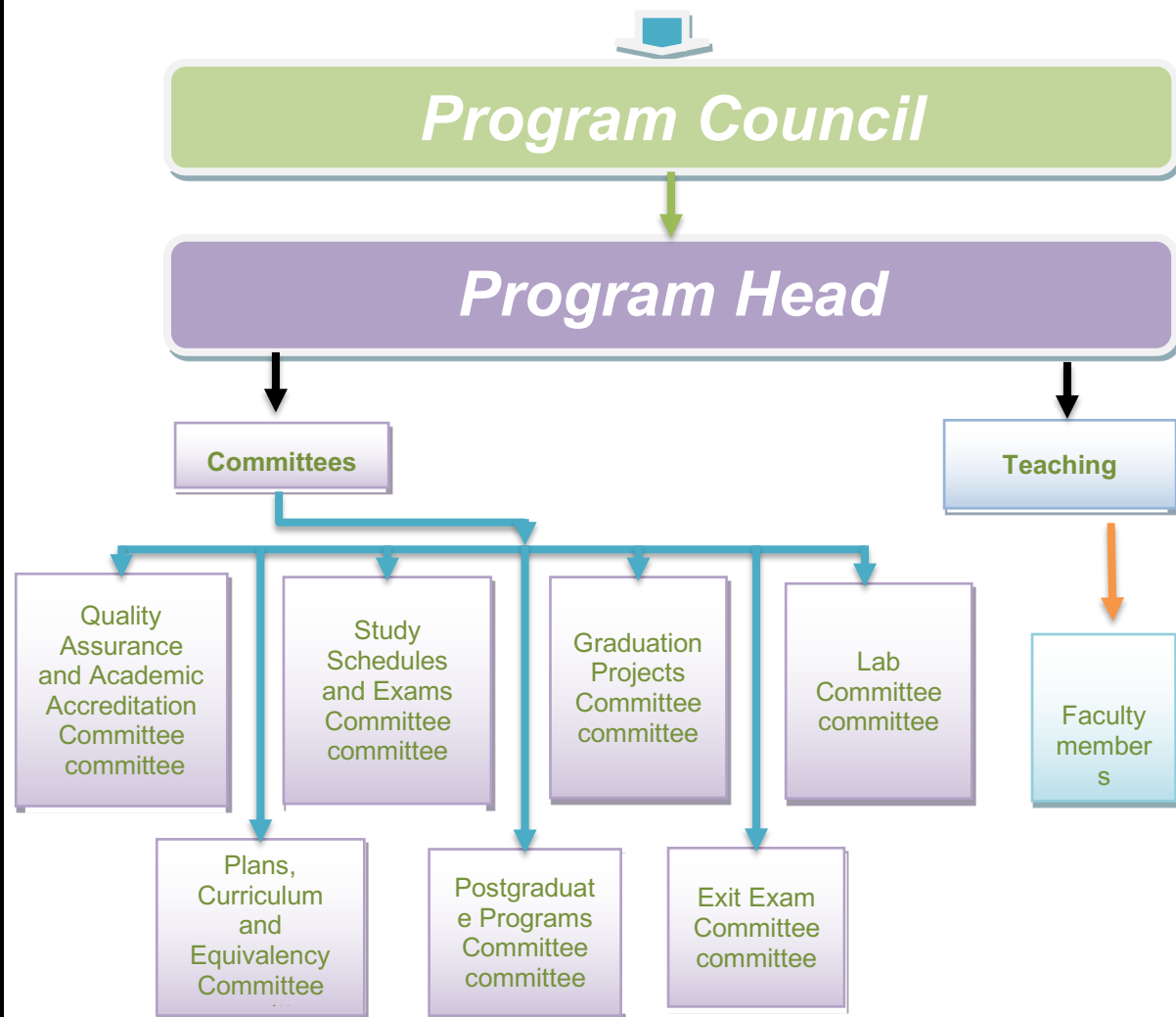
A safety and health management system are a main part of the college of the Organization's management system which covers the health and safety work organization and policy in the college, the planning process for accident and ill health prevention (check the link [click](#)), the line management responsibilities and the practices, procedures and resources for developing and implementing, reviewing and maintaining the occupational safety and health policy.

## **G. Program Management and Regulations**

### **1. Program Management**

## 1.1 Program Structure

(including boards, councils, units, committees, etc.)



## 1.2 Stakeholders Involvement

Describe the representation and involvement of stakeholders in the program planning and development. (students, professional bodies, scientific societies, alumni, employers, etc.)

This is the first review of the Construction Engineering academic program at Al-Qunfudhah. A committee of faculty members including the Construction Engineering program coordinator, head of department, quality supervisor and two other faculty members have been set up to carry out a detailed assessment of the Construction Engineering program and to suggest improvements, developments, and introduction of new academic programs. All of these issues will be included in a detailed report that sets the future plans for the Construction Engineering Department.

Professional companies, alumni and employers are involved in the program planning and development through their feedback/evaluation in the form of questionnaires about the program mission, message, objectives and program learning outcomes.

- Course evaluation surveys are conducted for each course and Program evaluation survey is conducted from the graduates.

- Faculty members are given feedback in Faculty development workshops, consultations during department councils. Faculty members fill in faculty satisfaction surveys by end of every term, Course review meetings are conducted and teachers provide feedback for improvements. Annual reports by various committees also provide feedback for program planning and development.
- Meetings are conducted with alumni and their feedback is taken to improve the program. Database on the student alumni information is maintained for future coordination. Alumni surveys are conducted. Also, meetings are conducted with employers, and surveys to get their feedback for improvement.
- Teams from Deanship of Quality and Academic Accreditation make evaluation of the program and give suggestions.
- Surveys are conducted by the employers and faculty.

## 2. Program Regulations

Provide a list of related program regulations, including their link to online version: admission, study and exams, recruitment, appeals and complaint regulations, etc.)

### 1. Appointments

Summarize the process of employment of new faculty and teaching staff to ensure that they are appropriately qualified and experienced for their teaching responsibilities.

- The specializations which need more faculty members are identified by the head of the department.
- Announcement for faculty members are published in many newspapers inside and outside the Kingdom, and on the university website.
- Complete regulations for employment are provided with full position descriptions and conditions of employment, together with general information about the institution and its mission and programs, and full details about the particular program for which they are being considered are given on the university and college web sites.
- The interested persons are asked to send their CV's which are investigated carefully by a committee consisting of the head of the department and two of the most expert faculty members.
- The committee checks the adequacy of the applicants to the required jobs by:
  - Identifying the field of specialization of the M.Sc. & Ph.D. degrees,
  - Identifying the field of research interest from the published work,
  - Investigating the teaching experience and courses' list that have been taught
  - Investigating the student graduation projects list which has been supervised by the faculty
  - Investigating the research theses which have been supervised by the faculty
  - Investigating the publications list that have been done by the faculty
  - Identifying the books that have been written or translated by the faculty
- The initially chosen faculty member is, then, interviewed by a committee consisting of the dean and a managing staff.
- Qualification certificates and documents are checked by the university faculty affairs office. The certificates should have been endorsed and certified by the Saudi Arabia Ministry of Foreign Affairs through the Saudi Arabia Culture Office in the certificate awarding countries.
- References are checked, and claims of experience are verified before appointments are made.
- All the new faculty members are given an effective orientation to the institution to ensure familiarity with the institution and its operating procedures, services and priorities for development through a meeting with the head of the department.
- New teaching staff is given a thorough orientation to the program to ensure they have a thorough understanding of the program as a whole, of the contributions to be made to it through the courses they teach, and of the expectations for coordinated planning and delivery of courses and evaluation and reporting requirements through meeting with the head of the department.

## 2. Admission

Attach handbook or bulletin description of admission requirements including any course or experience prerequisites. ([Click](#))

The College of Engineering Council in Qunfudhah shall determine the number of students who can be admitted in each department of the College in accordance with the Kingdom's comprehensive development plan. In addition to the general conditions for admission to Umm Al-Qura University, which is mentioned in the list of studying and tests for the undergraduate.

Check the links (<https://uqu.edu.sa/en/studaff/166>  
[https://drive.uqu.edu.sa/\\_dadregis/files/43/LD432HJ.pdf](https://drive.uqu.edu.sa/_dadregis/files/43/LD432HJ.pdf))

## 3. Study and exam

What processes will be used for verifying standards of achievement (eg., verify grading samples of tests or assignments? Independent assessment by faculty from another institution) (Processes may vary for different courses or domains of learning.)

The total score in each of the courses of the program is 100 degrees distributed as follows:

Theoretical courses: The final test score is 60% and the 40% is distributed to the semester works (attendance and participation in the lecture, presentations, written tests and reading and research assignments during the semester).

Practical Courses: The final degree is 40% and the rest is divided into semester works (attendance and participation in the lecture, presentations, written tests, and reading and research assignments during the semester).

At the end of the semester the instructor is required to submit a course file that contains all the information related to the teaching of the course in addition to the final grades of all students.

Furthermore the course file includes the course specification and course report. The contents of this file are discussed with the program coordinator and the head of the department in order to evaluate and improve the teaching method and assess students' achievements.

In addition, a formal process for verifying standards of achievement contains the following:

- 1- End of semester course evaluation by students.
- 2- End of semester program experience evaluation by students.
- 3- Independent evaluation of the teaching method employed by an expert in the field.
- 4- Review of the course contents at the end of the year by an internal committee to improve the teaching standard.

Comparison of students' achievements between Construction Engineering courses to ensure that the same academic standard is applied to all courses in the Construction Engineering program.

## 4. Students Appeals

Attach regulations for student appeals on academic matters, including processes for consideration of those appeals. [click](#)

Regulations for academic appeals are according to the policy of the Ministry of Higher Education in Saudi Arabia.

## H. Program Quality Assurance

### 1. Program Quality Assurance System

Provide online link to quality assurance manual

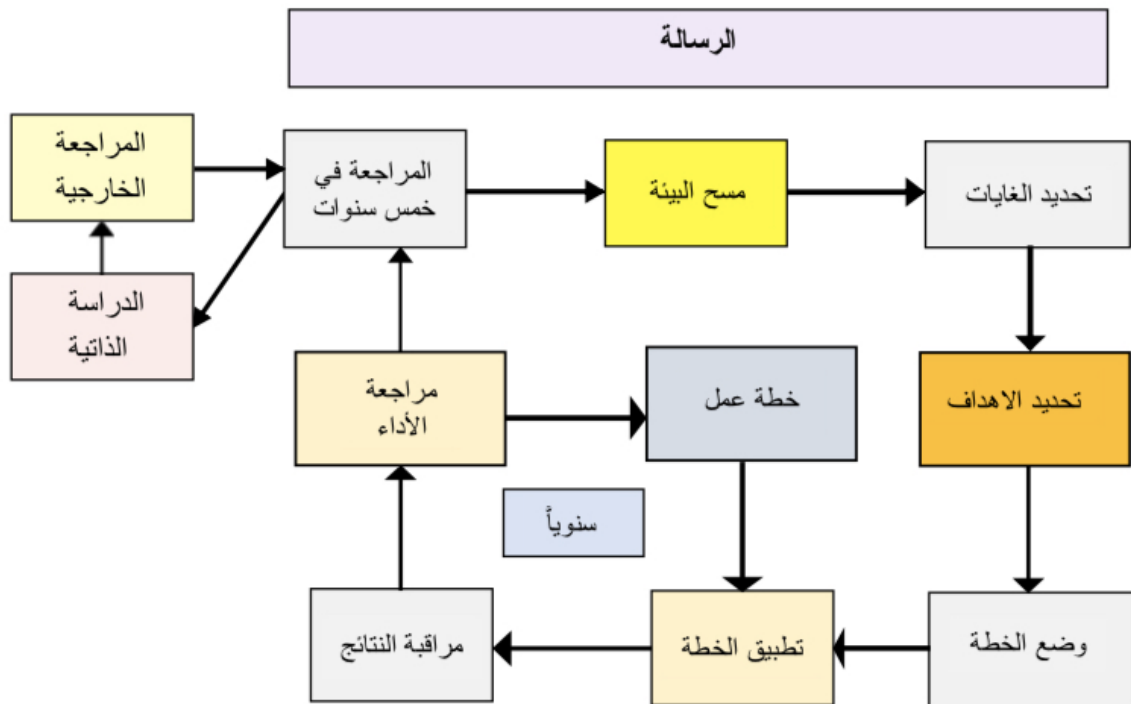
See the link [click](#)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>2. Program Quality Monitoring Procedures</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <p>1- Having students responses on a well prepared questionnaire related to the program evaluation</p> <p>2- Having graduated student responses on the program evaluation using a standard form.</p> <p>3- Having open discussions with a randomly selected group of graduate students</p> <p>4- Having feedbacks from the student advisory committee</p>                                                                                                                                                                                                                                                                     |
| <b>3. Arrangements to Monitor Quality of Courses Taught by other Departments.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <p>ii) from independent advisors and/or evaluator(s)?.</p> <ol style="list-style-type: none"> <li>1. The department communicates its needs to concerned departments to ensure that the coursenfulfils the needs of construction engineering students.</li> <li>2. Evaluation by independent reviewers</li> <li>3. Getting comments and advice from a Professional Advisory Committee</li> <li>4. Getting evaluation and feedback from external senior professors as regarding the quality of our exams and marking process.</li> <li>5. Getting advice and comments from an international accreditation specialist</li> </ol> |
| <b>4. Arrangements Used to Ensure the Consistency between Main Campus and Branches</b><br>(including male and female sections)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| (iii) from employers, Advisory Committee, and/or other stakeholders.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>5. Arrangements to Apply the Institutional Regulations Governing the Educational and Research Partnerships</b> (if any).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| n/a                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>6. Assessment Plan for Program Learning Outcomes (PLOs), and Mechanisms of Using its Results in the Development Processes</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <p>Faculty members rely on students' feedback, their own teaching experience and the advice of colleagues regarding the adequacy of the text books. If changes in the textbooks are required then the faculty or a group of faculty members who have the necessary expertise in the field submit a formal request to the departmental/college/university councils to update the textbooks.</p>                                                                                                                                                                                                                                |

| المستوى الدراسي | نوع المتطلب | المقررات                            | مخرج التعلم 1                                                                                                                                                                     | مخرج التعلم 2                                                                                                                                                         | مخرج التعلم 3                                                                                              | مخرج التعلم 4                                                                                                                                         | مخرج التعلم 5                                                                                             | مخرج التعلم 6                                                            | طرق التقييم                             |
|-----------------|-------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------|
| المستوى الثالث  | متطلب كلية  | المعادلات التفاضلية للمهندسين       | know the types of differential equations                                                                                                                                          | recognize the basic notions linear and nonlinear differential equations, ordinary and partial differential equations                                                  | set-up systems of linear differential equations using characteristic equations                             | apply Fourier series to periodic functions and test convergence series to periodic functions and test convergence                                     | solve partial differential equations (especially heat and wave) with applications to engineering problems | -                                                                        | Assignment, Quizzes and exams           |
|                 | متطلب كلية  | الفيزياء العامة 2                   | explain Phenomena, facts and patterns in physics.                                                                                                                                 | explain principles, concepts in physics.                                                                                                                              | explain laws, theories and models in physics.                                                              | develop scientific thinking and problem-solving skills                                                                                                | set up and solve basic problems in engineering physics                                                    | evaluate experimental procedures                                         | Assignment, Quizzes and exams           |
|                 | متطلب كلية  | الاقتصاد الهندسي                    | know the concepts of engineering economics                                                                                                                                        | apply knowledge of mathematics, science, and engineering                                                                                                              | design a system, component, or process to meet desired needs within realistic constraints.                 | identify, formulate, and solve engineering problems                                                                                                   | recognize professional and ethical responsibility                                                         | -                                                                        | Assignment, Quizzes and exams           |
|                 | متطلب كلية  | الرسم الهندسي                       | list the different types of engineering drawings and the standard engineering drawing formats                                                                                     | define common terms, symbols, legends, notes and abbreviations used on engineering drawings                                                                           | identify and interpret the line conventions used on engineering drawings                                   | interpret the symbols in the drawings                                                                                                                 | -                                                                                                         | -                                                                        | Assignment, Quizzes and exams           |
|                 | متطلب قسم   | مقدمة في هندسة التشييد              | gain knowledge about Engineering Essentials such as Design & Teamwork                                                                                                             | emphasis on Problem Paradigms, Ubiquitous Units, Scripting, Spreadsheets and Punctilious Programming                                                                  | identify at solutions for complex construction engineering problems                                        | examine Engineering Communication Skills                                                                                                              | -                                                                                                         | -                                                                        | Assignment, Quizzes and exams           |
| المستوى الرابع  | متطلب قسم   | الجبر الخطي للمهندسين               | know the basic matrix algebra                                                                                                                                                     | list theorems about determinant                                                                                                                                       | classify and solve linear systems of linear algebraic equations                                            | recognize the basic notions of linear systems, vectors, matrix algebra, and vector spaces                                                             | use computational skills and interpret results accurately                                                 | -                                                                        | Assignment, Quizzes and exams           |
|                 | متطلب كلية  | تحليل الدوائر                       | know basic electrical machines, and electrical measuring instruments                                                                                                              | explain the simple rectangular or circular cylindrical solid with isotropy, the parallel plate structure and the dielectric properties of the insulating medium       | evaluate situations about ethics                                                                           | solve electrical circuits                                                                                                                             | Develop the scientific language skills                                                                    | Develop communication skills with others via websites or e-mail          | Assignment, Quizzes and exams           |
|                 | متطلب كلية  | استاتيكا                            | determine the resultant of a system of concurrent forces by parallelogram methods and Cartesian vector notation in 2D& 3D (magnitude and direction)                               | determine section properties, (area, centroid, first and second moment of area                                                                                        | reproduce a system of forces and couples to a single force and determine its point of application          | calculate the moment of a force about a point and a line and the moment of a couple in 2D and 3D (magnitude and vector)                               | apply and solve equations of equilibrium for a particle and for a rigid structure in 2D& 3D               | -                                                                        | Assignment, Quizzes and exams           |
|                 | متطلب قسم   | جيولوجيا                            | explain geology and earth surface features                                                                                                                                        | describe crystals and minerals physical properties and formation                                                                                                      | recognize structural features of earth crust and engineering considerations                                | discuss rocks formation and their classification, geology of dams and reservoirs, rock mechanics and tunneling                                        | evaluate physical properties for constructional purposes of Granite and other Marble types                | -                                                                        | Assignment, Quizzes and exams           |
|                 | متطلب قسم   | الرسم المدني                        | Recognize the main concepts of the civil drawing                                                                                                                                  | Draw different RC elements, steel works and earth works                                                                                                               | Use AutoCAD to draw the different RC elements and steel works                                              | form a civil engineering drawing                                                                                                                      | -                                                                                                         | -                                                                        | Assignment, Quizzes and exams           |
| المستوى الدراسي | نوع المتطلب | المقررات                            | مخرج التعلم 1                                                                                                                                                                     | مخرج التعلم 2                                                                                                                                                         | مخرج التعلم 3                                                                                              | مخرج التعلم 4                                                                                                                                         | مخرج التعلم 5                                                                                             | مخرج التعلم 6                                                            | طرق التقييم                             |
| المستوى التاسع  | متطلب كلية  | مشروع تخرج 1                        | Understand the need to construct a model of real-life work.                                                                                                                       | Learn the concepts of planning, careful thought, and critical analysis.                                                                                               | Get training on reading/ writing/ research skills.                                                         | Get training on reading/ writing/ research skills.                                                                                                    | -                                                                                                         | -                                                                        | Assignment and discussion group         |
|                 | متطلب كلية  | اخلاقيات هندسية                     | Understand the system of moral principles confronting in engineering practices                                                                                                    | Introduce the ethical and professional responsibilities of engineers                                                                                                  | Build professional reputation strongly based on the principles of truthfulness and professional excellence | Understand Moral Reasoning and Codes of Ethics                                                                                                        | Know Moral Frameworks and Explain Engineering as Social Experimentation                                   | Understand Truth and Truthfulness                                        | Assignment, Quizzes and exams           |
|                 | متطلب قسم   | هندسة الطرق                         | Understand the principles underlying roadway design                                                                                                                               | Design a roadway allowing for differing terrain, horizontal and vertical curves                                                                                       | Assess alternative pavement designs and understand their deterioration                                     | Assess alternative surface drainage schemes, including sustainable urban drainage                                                                     | Calculate earthworks quantities needed for roadway construction                                           | -                                                                        | Assignment, Quizzes and exams           |
|                 | متطلب قسم   | صيانة و إصلاح المنشآت               | various aspects of Inspection, Assessment procedure for evaluating a damaged structure, causes of deterioration                                                                   | Quality assurance for concrete construction and concrete properties, Special concretes and mortar, concrete chemicals, special elements for accelerated strength gain | techniques of repair and demolition                                                                        | Repairs to overcome low member strength, Deflection, Cracking, Chemical deterioration, weathering corrosion, wear, fire, leakage and marine exposure. | -                                                                                                         | -                                                                        | Assignment, Quizzes and exams           |
|                 | متطلب قسم   | إدارة المخاطر في مشاريع التشييد     | Understand specific risks associated with a project                                                                                                                               | Understand risk management techniques                                                                                                                                 | Assess and mitigate potential risks in construction projects                                               | Understand the importance of risk management in the construction projects                                                                             | committed to the values and ethics of professional practice.                                              | Evaluate the team working and leadership.                                | Assignment, Quizzes, project and exams  |
| المستوى العاشر  | متطلب قسم   | السلامة و الحماية في مشاريع التشييد | Recognize the possible accidents that may occur in construction projects.                                                                                                         | Identify the assessment of safety in construction projects                                                                                                            | Identify considerations that should be taken on board through the life cycle of the construction projects  | Be familiar with the safety obligations in construction contracts                                                                                     | -                                                                                                         | -                                                                        | Assignment, Quizzes and exams           |
|                 | متطلب كلية  | مشروع تخرج 2                        | Understand the need to construct a model of real-life work.                                                                                                                       | Learn the concepts of planning, careful thought, and critical analysis.                                                                                               | Get Training on reading/ writing/ research skills, and follow-through as much as a finished product.       | Learning the different research techniques such as field-work, measurements, experimental setups, and computational simulation                        | Apply theories learnt to real life problems using code provisions                                         | -                                                                        | Assignment and discussion group         |
|                 | متطلب قسم   | هندسة الموانئ                       | Recognize the concept of Harbor Engineering                                                                                                                                       | know types of harbors and different properties related off harbors                                                                                                    | Know different types of Harbors                                                                            | Know and design different elements of harbor                                                                                                          | Select and design appropriate type of backwaters                                                          | - know properties affecting on designing harbor                          | Assignment, Quizzes and exams           |
|                 | متطلب قسم   | إدارة التمويل لمشروعات التشييد      | Understanding the concept of Project Financial Management (in lifecycle phases) as an essential area associated with other knowledge areas of management of construction projects | Understanding the sources available for funding a construction project                                                                                                | Learn project management accounting techniques to improve project management skills                        | Encompass traditional accounting with more quantitative approach in budgeting, cost accounting, financing, cash flow and earned value                 | Learning how to conduct a flow chart to control the project costs                                         | Understanding the techniques used for estimating a construction project. | Assignment, Quizzes and exams           |
|                 | متطلب قسم   | تقوى و مواصفات                      | Mastery and deal with the respective roles of design, geotechnical, construction and construction in the design and construction process.                                         | Understand different types of construction contracts and how the construction supervisor's role may be affected by them                                               | Learn how to evaluate contractors' capabilities and develop documentation system                           | Ability to prepare the Request for Proposal as a project owner or consultant                                                                          | Know how to handle schedule impacts, delays, suspensions and disruption of time related work activities   | -                                                                        | Assignment, Quizzes, projects and exams |
| المستوى العاشر  | متطلب قسم   | مواضيع معاصرة في إدارة المشاريع     | Knowledge of concepts , theories deep and distinct knowledge and understanding in construction engineering                                                                        | Use acquired knowledge to solve the social, economical, environmental issues related the construction engineering practice                                            | Realize new procedures for project budgeting, procurement and risk management                              | Apply new procedures for selection of project team                                                                                                    | Plan procedures and the foundation of CPM scheduling.                                                     | -                                                                        | Assignment, Quizzes, projects and exams |

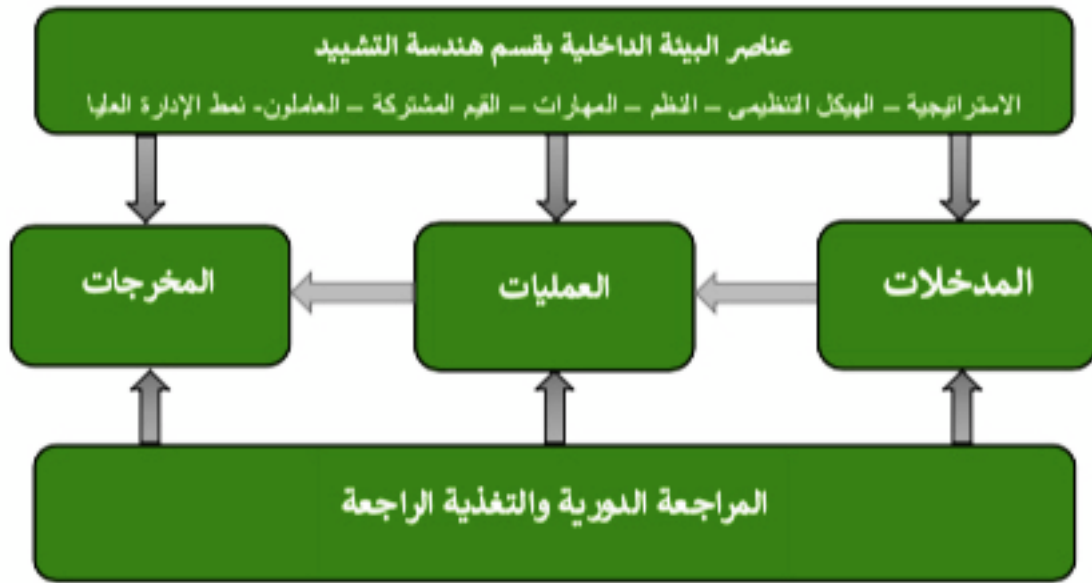
Check the link [7- Program learning outcomes assessment plan and reports - OneDrive \(sharepoint.com\)](#)

## 7. Program Evaluation Matrix



More details, see the link [click](#)

## 8. Program KPIs\*



More details, see the link [click](#)

## I. Specification Approval Data

|                     |                                                                                                    |
|---------------------|----------------------------------------------------------------------------------------------------|
| Council / Committee | Dr. Abdulrahman Al. malki                                                                          |
| Reference No.       | 4102012716<br> |
| Date                | 21/08/2022                                                                                         |