



Al Muthanna University

جامعة المثنى

Program Catalogue

دليل البرنامج الدراسي

| 2023-2024 |

First Cycle – Bachelor's Degree (B.Sc.)

– Civil Engineering

بكالوريوس - هندسة مدنية

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1. Mission & Vision Statement

Vision Statement

Our vision in the Department of Civil Engineering at Al-Muthanna University is to support our community with a worth engineering education that allow our students to serve in improving civil infrastructure and economic welfare. We are looking forward to sustain a strong emphasis on the level of undergraduate education so our program becomes a well-recognized in civil engineering analysis and design and for high quality instruction.

Mission Statement

The civil engineering program at Al-Muthanna University was established to give its students a wide and detailed education in civil engineering basics, applications, and design that enable them to practice civil engineering at the professional level. The program mission is to provide them with the confidence and experience needed to meet the technical and social challenges of the future. In addition to use of modern engineering tools, the program gives education in mathematics, physics, engineering mechanics, and civil engineering to perform its mission. Graduates will be able to put themselves in the entry-level of civil engineering positions leading to professional engineering practices and gain a solid undergraduate base which enables them to continue their learning at higher levels.

2. Program Specification

Programme code:	BSc-CE	ECTS	240
Duration:	4 levels, 8 Semesters	Method of Attendance:	Full Time

Civil engineering program at Al-Muthanna University is a wide-ranging subject led by one of the most professional teaching staff in Iraq. The importance of the program came from its ability to provide the engineering knowledge needed for establishing infrastructure and building better environment for community. The program provide degree in general civil engineering that's give its holder with required knowledge regarding using building materials, designing steel, concrete and materials structures, designing transportation and environmental systems, and establishing management requirements for these structures and systems.

Level 1 exposes students to the fundamentals of engineering, suitable for progression to most of programs within the engineering group. Programme-specific core topics are covered at Level 2 preparing for designing and execution projects' led subject specialist modules at Levels 3 and 4.

At Levels 2, 3 and 4 students are set to take most of their module credits topics that ensure the breadth of knowledge expected of a graduate with a civil engineering degree. This allows students to develop their own wide-ranging interests in civil engineering works. Decisions on what to study on elective courses are made with input from personal instructor.

There is a required field course in Level 1, which students must pass in order to progress into Level 2, and optional field courses in Level 4. At Level 4 all students carry out a group project (capstone project), which is 8 credit hours. The capstone project for every group of students is developed and fostered from either topics that embedded in lecture modules or taught in

dedicated practical modules, research seminars and tutorials. They mostly related to solving problems from outside university using library or data analysis, or field or laboratory-based work.

3. Program Goals

Our program is devoted to prepare students within three to five years after graduation to:

1. Develop into competent and engaged engineering professionals and applying their technical and managerial qualifications in the planning, designing, constructing, operating and/or maintaining of the built infrastructure and environment.
2. Using their skills to analyze and design systems, identify project's execution means and materials, carry out cost estimation and analyses, and participate in directing technical activities for civil engineering projects or projects related to other fields of engineering.
3. Be able to actively participate in their communities and their profession by developing their oral, written, visual and graphic modes communication abilities when working as team members or leaders.
4. Initiate a program of continuous learning which may include studies leading to a proficient licensure or a higher degree in engineering that provides continued development of their technical abilities and management skills, and attainment of professional expertise.
5. Improve their understanding of sustainability, professionalism, ethics, quality performance, and safety that allows them to be professional influential to society when solving engineering problems and creating solutions in the field of civil engineering.

4. Student Learning Outcomes

Civil engineering is the study of building infrastructures and enhancement of environment. The Department offers a Bachelor of Science in civil engineering that leads to giving specific learning outcomes to our students. Upon graduation, graduates should gain:

1. An ability to distinguish, identify, define, formulate, and solve engineering problems by applying principles of engineering, science and mathematics.
2. An ability to produce engineering designs that meet desired needs within certain constraints by applying both analysis and synthesis in the design process.
3. An ability to create and carry out proper measurement and tests with quality assurance, analyze and interpret results, and utilize engineering judgment to make inferences.
4. An ability to skillfully communicate orally with a gathering of people and in writing with various managerial levels.
5. An ability to perceive ethical and professional responsibilities in engineering cases and make brilliant judgments taking into account the consequences in worldwide financial, ecological and societal considerations.
6. An ability to perceive the continual necessity for professional knowledge growth and how to find, assess, assemble and apply it properly.
7. An ability to work adequately on teams and to set up objectives, plan activities, meet due dates, and manage risk and uncertainty.

5. Academic Staff

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6. Credits, Grading and GPA

Credits

Al Muthanna University is following the Bologna Process with the European Credit Transfer System (ECTS) credit system. The total degree program number of ECTS is 240, 30 ECTS per semester. 1 ECTS is equivalent to 25 hrs student workload, including structured and unstructured workload.

Grading

Before the evaluation, the results are divided into two subgroups: pass and fail. Therefore, the results are independent of the students who failed a course. The grading system is defined as follows:

مخطط الدرجات GRADING SCHEME				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX – Fail	راسب - قيد المعالجة	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				

Number Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Calculation of the Cumulative Grade Point Average (CGPA)

The CGPA is calculated by the summation of each module score multiplied by its ECTS, all are divided by the program total ECTS.

CGPA of a 4-year B.Sc. degree:

$$CGPA = [(1^{st} \text{ module score} \times ECTS) + (2^{nd} \text{ module score} \times ECTS) + \dots] / 240$$

7. Curriculum/Modules

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CVE111	Engineering Mechanics: Statics	63	62	5.00	B	-
CVE112	Engineering Physics	48	77	5.00	B	-
ENG001	Mathematics-I	93	57	6.00	B	-
ENG002	Engineering Workshops	45	55	4.00	B	-
ENG003	Engineering Drawing-I	48	77	5.00	B	-
UNI004	Computer I	63	12	3.00	S	-
UNI006	Democracy and Human Rights	33	17	2.00	S	-

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CVE121	Engineering Mechanics: Dynamics	60	65	5.00	B	CVE111
CVE122	Building Materials	75	50	5.00	C	-
CVE123	Chemistry	60	65	5.00	B	-
CVE124	Engineering Geology	30	70	4.00	B	-
CVE125	Engineering Drawing-II	75	50	5.00	B	ENG003
ENG004	Engineering Statistics	45	55	4.00	B	-
UNI001	English Language I	30	20	2.00	S	-

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CVE211	Strength of Materials I	60	65	5.00	C	CVE121
CVE212	Engineering Surveying I	75	50	5.00	C	-
CVE213	Concrete Technology I	60	65	5.00	C	-
CVE214	Fluid Mechanics	75	50	5.00	C	-
ENG005	Mathematics II	90	35	5.00	B	ENG001
UNI005	Computer II	60	15	3.00	B	UNI004
UNI003	Arabic Language	30	20	2.00	S	-

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CVE221	Strength of Materials II	60	65	5.00	C	CVE211
CVE222	Engineering Surveying II	75	50	5.00	C	CVE212

CVE223	Concrete Technology II	60	65	5.00	C	CVE213
CVE224	Irrigation and Drainage Engineering	60	65	5.00	C	CVE214
CVE225	Buildings Construction	90	60	6.00	C	CVE122
UNI002	English Language II	30	20	2.00	S	UNI001
UNI0010	Baath Crimes	30	20	2.00	S	

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CVE311	Traffic Engineering I	60	40	4.00	C	-
CVE312	Theory of Structures I	60	40	4.00	C	CVE221
CVE313	Soil Mechanics I	75	50	5.00	C	
CVE314	Reinforced Concrete I	60	65	5.00	C	CVE221
CVE315	Engineering economy and Project Management	60	90	6.00	C	-
CVE316	Engineering Analysis and Numerical Methods	75	75	6.00	B	ENG005

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CVE321	Traffic Engineering II	60	40	4.00	C	CVE311
CVE322	Theory of Structures II	60	65	5.00	C	CVE312 and CVE314
CVE323	Soil Mechanics II	75	50	5.00	C	CVE313
CVE324	Reinforced Concrete II	60	65	5.00	C	CVE314
CVE325	Hydrology	60	90	6.00	C	CVE214
CVE326	Methods of Construction and Engineering Estimation	60	65	5.00	C	

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CVE411	Design of steel structures I	60	65	5.00	C	CVE221
CVE412	Foundation Engineering I	60	65	5.00	C	CVE323
CVE413	Highways Engineering I	75	75	6.00	C	CVE321
CVE414	Sanitary and Environmental Engineering I	75	75	6.00	C	CVE325
CVE415	Design of concrete structures	60	65	5.00	C	CVE324

ENG006	Engineering Project	30	45	3.00	C	*
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Semester 8 | 30 ECTS | 1 ECTS = 25 hrs

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CVE421	Design of steel structures II	60	65	5.00	C	CVE411
CVE422	Foundation Engineering II	60	65	5.00	C	CVE412
CVE423	Highways Engineering II	75	50	5.00	C	CVE413
CVE424	Sanitary and Environmental Engineering II	75	50	5.00	C	CVE414
CVE425	Engineering Computer Applications	45	80	5.00	C	
ENG006	Engineering Project	30	70	4.00	C	*
UNI007	Ethics	15	10	1.00	S	

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