

University of Mosul

جامعة الموصل



First Cycle – Bachelor's degree (B.Sc.) – Civil Engineering
بكالوريوس علوم - هندسة مدنية



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1. Vision & Mission Statement

Vision Statement

The civil engineering academic staff of the Natural and Behavioral Sciences Division at Mosul University believe that students come to understand the discipline of civil engineering through a combination of course work, laboratory experiences, research, and fieldwork. The combination of instructional methods leads students to a balanced understanding of the scientific methods used by civil engineers to make observations, develop insights and create theories about the civil engineering discipline. Small class sizes within the civil engineering program foster a close working relationship between academic staff and students in an informal and nurturing atmosphere.

Mission Statement

The civil engineering academic staff pursues a multifaceted charge at Mosul University. The Program seeks to provide all civil engineering students with fundamental knowledge of civil engineering, as well as a deeper understanding of a selected focus area within the civil engineering science. The curriculum and advising have been designed to prepare graduates for their professional future, whether they choose to work as a site engineer specializing in structures, geotechnical, or highways, or to pursue advanced degrees in the discipline. The civil engineering program also provides the necessary fundamental knowledge of the Environmental Studies degree. In addition, civil engineering courses provide a key laboratory science experience for those students seeking to complete the general education requirements

2. Program Specification

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

Civil engineering is a wonderfully wide-ranging subject, and Mosul University, with one of the Iraqi's largest and most diverse civil engineering teaching groups, is well equipped to deliver. The emphasis of the programme is the whole infrastructures to which everything is related, be it the projects from planning, design to implementations as well as maintenance. The degree is popular - –or some it's' the breadth of the subject that appeals, for others it's a path to specialization.

Level 1 exposes students to the fundamentals of Engineering, suitable for progression to all programmes within the civil engineering programme group. Programme-specific core topics are covered at Level 2 preparing for research-led subject specialist modules at Levels 3 and 4. A Mosul University civil engineering graduate is therefore trained to appreciate how research informs teaching, according to the University and School Mission statements.

At Levels 2, 3 and 4 students are free to choose more than half of their module credits with the proviso a range of modules are selected that reflect the complexity of life forms from molecules. This allows students to develop their own wide-ranging interests in civil engineering discipline. Decisions on what to study are made with input from personal tutors.

The research is developed and fostered from the start via practical, which are either embedded in lecture modules or taught in dedicated practical modules, research seminars and tutorials. There is a compulsory field course in Level 1, which students must pass in order to progress into Level 2, and optional field courses in Levels 2, 3 and 4. At Level 4 all students carry out an independent research project, which may be a xx credit library or data analysis project, or a xx credit field or laboratory based project.

Academic tutorials are held at Levels 1 and 2 with the same tutor, who is also the personal tutor, providing continuity and progressive guidance. Level 1 and 2 tutorials include a number of workshops to teach skills, e.g. library use and presentation skills, followed by assessed exercises, e.g. essays and talks, as opportunities to practice these skills in a subject-specific context.

International years and Industrial placements are also offered and individual needs are discussed with the appropriate tutor and accommodated wherever possible.

3. Program Goals

1. To provide a comprehensive education in civil engineering that stresses scientific reasoning and problem solving across the spectrum of disciplines within civil engineering.
2. To prepare students for a wide variety of post-baccalaureate paths, including graduate school, professional training programs, or entry level jobs in any area of civil engineering
3. To provide extensive hands-on training in electronic technology, statistical analysis, laboratory skills, and field techniques.
4. To provide thorough training in written and oral communication of scientific information
5. To enrich students with opportunities for alternative education in the area of civil engineering through undergraduate research, internships, and study-abroad.

4. Student Learning Outcomes

Civil engineering is the application of physical and scientific principles for the design, development and maintenance of both the constructed and the naturally built environment. This includes infrastructure such as airports, bridges, buildings, canals, dams, pipelines, power plants, railways, roads, sewage systems, and more. Graduates obtain information on the historical, technical and social aspects of civil engineering and utilize basic knowledge toward realizing broader concepts. The Department offers a Bachelor of Science in civil engineering. Additionally, the department offers courses to a large number of students from other departments and supports pre-professional programs. The civil engineering curriculum and experiences are designed to prepare students, in part, for entry into professional graduate studies, working industrials as site engineers, construction engineers, designers, technical careers, etc.

Outcome 1*Oral and Written Communication*

Graduates will be able to formally communicate the results of civil engineering investigations using both oral and written communication skills.

Outcome 2*Laboratory and Field Studies*

Graduates will be able to perform laboratory experiments and field studies, by using scientific equipment and computer technology while observing appropriate safety protocols.

Outcome 3*Scientific Knowledge*

Graduates will be able to demonstrate a balanced concept of how scientific knowledge develops, including the historical development of foundational theories and laws and the nature of science.

Outcome 4*Data Analyses*

Graduates will be able to demonstrate scientific quantitative skills, such as the ability to conduct simple data analyses.

Outcome 5*Offices and industrials*

Graduates will be able to work in offices during preparing planning, designing phase of a project. Graduates will be able to work in industrial (site engineer) during implementation of a project.

Outcome 6*Critical Thinking*

Graduates will be able to use critical-thinking and problem-solving skills to solve problems they faced efficiently (in industrials) and to develop a research project and/or paper (in academia).

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6. Credits, Grading and GPA

Credits

Mosul 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:

| GRADING SCHEME مخطط الدرجات | | | | |
|--|------------------|---------------------|-----------|---------------------------------------|
| 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:

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

7. Curriculum/Modules

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs.

| Code | Module | SSWL | USSWL | ECTS | Type | Pre-request |
|-------|-------------------------|------|-------|------|------|-------------|
| CE101 | Mathematics I | 78 | 72 | 6 | B | |
| CE102 | Engineering Mechanics I | 78 | 97 | 7 | C | |
| CE103 | Engineering drawing I | 63 | 87 | 6 | B | |
| CE104 | Geology | 78 | 97 | 7 | B | |

| | | | | | | |
|-------|----------------------------|----|----|---|---|--|
| CE105 | Democracy and Human Rights | 33 | 17 | 2 | S | |
| CE106 | English language I | 33 | 17 | 2 | S | |

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs.

| Code | Module | SSWL | USSWL | ECTS | Type | Pre-request |
|-------|--------------------------|------|-------|------|------|-------------|
| CE107 | Mathematics II | 78 | 72 | 6 | B | |
| CE108 | Engineering Mechanics II | 78 | 97 | 7 | C | |
| CE109 | Computer science | 63 | 37 | 4 | S | |
| CE110 | Engineering drawing II | 63 | 87 | 6 | B | |
| CE111 | Statistics | 48 | 52 | 4 | B | |
| CE112 | Electrical engineering | 33 | 42 | 3 | S | |

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs.

| Code | Module | SSWL | USSWL | ECTS | Type | Pre-request |
|-------|---------------------------|------|-------|------|------|--------------|
| CE201 | Engineering Mathematics I | 63 | 62 | 5 | B | |
| CE202 | Mechanics of Materials I | 78 | 72 | 6 | C | CE102, CE108 |
| CE203 | Computer programming | 63 | 62 | 5 | S | |
| CE204 | Concrete technology I | 78 | 72 | 6 | C | |
| CE205 | Engineering surveying I | 78 | 72 | 6 | C | |
| CE206 | English language II | 33 | 17 | 2 | S | |

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

| Code | Module | SSWL | USSWL | ECTS | Type | Pre-request |
|-------|----------------------------|------|-------|------|------|-------------|
| CE207 | Engineering Mathematics II | 63 | 62 | 5 | B | |
| CE208 | Mechanics of Materials II | 78 | 72 | 6 | C | |
| CE209 | Fluid mechanics | 63 | 37 | 4 | B | |
| CE210 | Concrete technology II | 78 | 72 | 6 | C | |
| CE211 | Engineering surveying II | 78 | 72 | 6 | C | |

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|-------|--|----|----|---|---|--|
| CE212 | Building construction and damages assessment | 48 | 27 | 3 | C | |
|-------|--|----|----|---|---|--|

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

| Code | Module | SSWL | USSWL | ECTS | Type | Pre-request |
|-------|------------------------------------|------|-------|------|------|--------------|
| CE301 | Engineering and numerical analysis | 78 | 47 | 5 | B | |
| CE302 | Theory of structures I | 78 | 72 | 6 | C | |
| CE303 | Soil mechanics I | 78 | 72 | 6 | C | |
| CE304 | Reinforced concrete I | 78 | 72 | 6 | C | CE202, CE208 |
| CE305 | Highway engineering I | 63 | 62 | 5 | C | |
| CE306 | English language III | 33 | 17 | 2 | S | |

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

| Code | Module | SSWL | USSWL | ECTS | Type | Pre-request |
|-------|--------------------------------|------|-------|------|------|-------------|
| CE307 | Engineering Project Management | 48 | 27 | 3 | C | |
| CE308 | Theory of structures II | 78 | 72 | 6 | C | |
| CE309 | Soil mechanics II | 78 | 72 | 6 | C | |
| CE310 | Reinforced concrete II | 78 | 72 | 6 | C | |
| CE311 | Highway engineering II | 63 | 62 | 5 | C | |
| CE312 | Hydraulic structures | 48 | 52 | 4 | B | |

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs

| Code | Module | SSWL | USSWL | ECTS | Type | Pre-request |
|-------|--|------|-------|------|------|--------------|
| CE401 | Design of reinforced concrete structures I | 78 | 97 | 7 | C | CE304, CE310 |
| CE402 | Foundation engineering I | 78 | 97 | 7 | C | |
| CE403 | Steel design | 78 | 72 | 6 | C | |
| CE404 | Traffic engineering | 78 | 72 | 6 | C | |

| | | | | | | |
|-------|-----------------------|----|----|---|---|--|
| CE405 | Engineering project I | 32 | 18 | 2 | C | |
| CE406 | Computer applications | 33 | 17 | 2 | B | |

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs

| Code | Module | SSWL | USSWL | ECTS | Type | Pre-request |
|-------|---|------|-------|------|------|-------------|
| CE407 | Design of reinforced concrete structures II | 78 | 97 | 7 | C | |
| CE408 | Foundation engineering II | 78 | 97 | 7 | C | |
| CE409 | Structural drawing and estimation | 63 | 87 | 6 | C | |
| CE410 | Environmental and sanitary engineering | 78 | 72 | 6 | C | |
| CE411 | Engineering project II | 32 | 18 | 2 | C | |
| CE412 | English language IV | 33 | 17 | 2 | S | |

8. Contact

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