BACHELOR COURSE IN

CIVIL ENGINEERING

DEPARTMENT OF ENGINEERING

The Bachelor course in Civil Engineering at the University of Messina forms graduates with a theoretical background in basic sciences and operative skills suitable for practice, including plan, design, manufacturing, maintenance, and project management in different fields of civil engineering.

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University of Messina – Department of Engineering

Contrada di Dio - Villaggio Sant'Agata – 98166 Messina

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Educational Objectives

The course in Civil Engineering, from the academic year 2022/23 delivered also in English, forms graduates through the application of methods, techniques and updated tools, compliant with the technical standards and suitable for the professional activity in the field of civil constructions, by using advanced and innovative procedures. Among these procedures, we mention:

- appropriate methods related to mathematics and basic sciences useful for describing and interpreting common problems in the engineering context;
- methodological-operative aspects of the subjects of civil engineering to identify, formulate and solve the most frequent problems, by using modern techniques and tools compliant with current standards;
- basic engineering techniques for the simulation of natural phenomena and for the design, assessment and maintenance of components and systems, by also using integrated procedures exploiting digital modeling;
- consequences of the adopted solutions with regard to the environment and considering the ageing and degradation of materials and components;
- computer technologies suitable for monitoring and identification, and related data processing;
- survey and interpretation of results from experimental campaigns;
- refinement of basic cognitive tools for the continuous updating of knowledge.

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Educational Objectives

Additionally, students will develop transverse skills that are useful for all the disciplines of the course and are related to:

- understanding the impact of engineering solutions in the broader social, economic and environmental context;

- understanding professional and ethical responsibility of the engineering choices;

- understanding professional and business contexts and main organization of construction firms, focusing on economic and management aspects;

- understanding ongoing global transformations and basic principles of circular economy;

- relational and decision-making skills;

- ability to communicate effectively, in written and oral form.

Educational Objectives

Knowledge and understanding ability are achieved through training activities organized in theoretical and practical lectures, in which the theoretical foundations are delivered side by side with laboratory exercises and activities. During these lectures, the students will develop autonomous ability to operate in the field of civil and building constructions of medium complexity, with ordinary calculation schemes.

Achievement of the learning goals is verified regularly through ongoing tests and written and/or oral exams, which end with the assignment of a mark.

Training Path

The course in CIVIL ENGINEERING comprises a total of 180 CFU (credits)

The traininig activities, also provided in English, include:

- (FIRST YEAR) activities dedicated to the acquisition of methodological-operative knowledge in mathematical analysis, physics, geometry, electrical engineering related to building and construction sites, chemistry applied to building materials and graphic representation, rational mechanics;

- (SECOND YEAR) activities dedicated to the acquisition of methodological-operational knowledge in basic subjects of civil engineering, which are based on the mathematical and physical studies of the previous year, such as structural mechanics, environmental technical physics, technical architecture and topography;

- (THIRD YEAR) activities dedicated to the acquisition of methodological-operative knowledge in integrative disciplines. In this regard, students at the third year can select one of two different specializations, namely civil or building engineering. Despite the differences between the two specializations, some teachings are common, such as 'hydraulics', 'soil mechanics', 'structural mechanics II' and 'structural design'. The first specialization (civil) mainly concerns disciplines of the civil area, such as 'design of road infrastructures', 'geotechnics', 'hydraulics II' and 'dynamics of structures'. The second specialization (building) is related to construction/building engineering, and includes subjects like 'techniques for architectural surveying', 'history of architecture', 'architectural restoration and urban planning'.

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Training Path

At the end of the course, students will be able to model, through graphic and analytical tools and with the right degree of approximation, civil engineering works in the most suitable way, by identifying the external actions to which it is subjected in order to verify that its resistance, functionality, safety and relationship with the environmental context are complaint with current regulations.

Internships, traineeships in companies, public or private bodies, also belonging to the Steering Committee and the final exam contribute to the completion of the civil engineer's training.

Students will also develop adequate autonomous critical skills, written and oral communication skills even in a language of the European Union other than the mother tongue, acquires cognitive tools suitable for the continuous updating of the knowledge, acquires awareness of contemporary contexts and of professional and ethical responsibilities, develop relational and decision-making skills.

Students are encouraged to undertake visiting exchange periods (international mobility) during their studies, within the Erasmus Plus program or through agreements established with European and non-European institutions.

STEERING COMMITTE

- AKWA – Palermo
- AMAM - Messina
- ANCE - Messina
- Architecna Engineering srl - Messina
- Autorità di Sistema Portuale dello Stretto - Messina
- Caronte & Tourist - Messina
- CAS - Palermo
- CMP Progetti - Catania
- ing. Giovanni Parisi - COCIV - Condotte spa - Genova
- Digicorp Ingegneria srl - Udine
- Dinamica srl - Messina
- Genio Civile - Messina
- INBAR - Messina
- Ingeo srl - Lucca
- Italo NTV - Roma
- Iterchimica srl - Bergamo
- J+S srl - Milano
- Laboratori e Ricerche L&R srl - Catania
- prof. Alessandro Palmeri Loughborough University
- Ordine degli Ingegneri - Messina
- ing. Fabio Arena - Ministero Infrastrutture e Trasporti
- Sicilferro srl - Torrenova (ME)
- Sidercem - Misterbianco (CT)
- Silegno - Villafranca Tirrena (ME)
- Tradimalt - Messina
- prof. Pierfrancesco Cacciola della University of Brighton

Study Plan

Study plan

Course title		Credits	Hours	Semester
Linear Algebra and Geometry		6	48	I
Chemistry and Materials Technology	Chemistry	6	48	I
	Materials Technology	6	48	I
Mathematical Analysis I		9	72	I
English language		6	36	I
Physics		6	48	II
Architectural Drawing		9	72	II
Surveying and data processing		9	72	II
Subject chosen by the student		6		
TOTAL CREDITS 1st Year		**63**		

Course title	Credits	Hours	Semester
Mathematical Analysis II	9	72	I
Circuit Theory	6	48	I
Rational mechanics	9	72	I
Building Construction	12	48	I
		48	II
Structural mechanics I	6	48	II
Technical physics and building energy systems	9	72	II
Subject chosen by the student	6		
TOTAL CREDITS 2nd Year	**57**		

Course title	Credits	Hours	Semester
Fundamentals of geotechnical engineering	6	48	I
Structural mechanics II	6	48	I
Bim for highway planning	6	48	I
Fundamentals of hydraulics of natural systems	12	48	I
		48	II
Foundations and retaining structures	6	48	II
Seismic analysis of structures	6	48	II
Structural design	6	48	II
Internship	3		
Stages	3		
Final Project	6		II
TOTAL CREDITS 3rd Year	**60**		

Career Opportunities

Graduates will acquire suitable knowledge to undertake activities in various civil engineering contexts abiding by technical standards, such as professional firms, consultancy and design companies, manufacturing or service companies, public and private bodies, management bodies or concessionaires of works, networks and services.

These activities, also carried out in the form of cooperation associated with other professional figures, concern planning, design, production, requalification and recovery, maintenance and management, technical assistance for structures with an economic-productive and social function, risk analysis and safety management, in the prevention and emergency phases, of infrastructures, construction sites, workplaces, industrial environments and public and private bodies, with responsibility profiles established by technical standards with reference to safety and health of workers, safety on construction sites and fire safety.

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Career Opportunities

Like the course in Italian, the training course in English, based on a robust acquisition of general skills related to the basic subjects, can be fruitfully exploited in a transnational context for immediate career opportunities in appropriate work environments or as basis for subsequent courses in the civil engineering area.

Graduates who will have sufficient credits in appropriate groups of sectors will be able, as required by current legislation, to attend the admission tests for secondary education training courses. To reach higher levels of responsibility or for the design, management and control of works of higher importance, it is necessary to acquire further skills through subsequent training courses, such as a master's degree.

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Contact & Information

For information on the entire educational offer provided by the University of Messina, you can consult the link:

https://www.unime.it/it/offerta-corsi

Information regarding the educational offer at the Department of Engineering can be found at the following links:

https://ingegneria.unime.it/it/didattica/corsi-di-laurea

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Contact & Information

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