UNIVERSITÀ DEGLI STUDI DI PALERMO

Department: Engineering

A.Y. 2022/2023

DEGREE COURSE IN CIVIL ENGINEERING

- GEOTECHNIQUE -

Characteristics

| Class of Master's Degree (MSc) on Civil engineering (LM-23) | 2 YEARS | PALERMO | FREE ACCESS | 2274 |

DOUBLE DEGREE

Gdansk University of Technology, Gdansk (POLAND)

Educational objectives

The 2nd cycle Degree Course in Civil Engineering aims at educating highly qualified professionals, capable of facing even complex issues related to the typical ambits of civil engineering, viz. structural, geotechnical, hydraulic, infrastructural and transport, through the further development of acquired competences and knowledge.

Specific educational objectives are related to:

- The foundations of theory and dynamics of structures. In particular, more professional aspects related to the design of bridges, steel structures, with particular reference to issues related to seismic design ,will be investigated in depth.

- The methods and tools for designing foundations, retaining works, artefacts of the ground, tunnels, dams, landfills and interventions to stabilize natural slopes. General issues concerning the mechanics of soils and rocks will be also studied in depth.

- The methods and tools for the design of works and plants for the exploitation of water resources and the defence of waters, advanced managerial and health-environment issues, as well as marine constructions and coastline defence. Great attention in also paid to hydrology.

- The methods and tools for the advanced geometric design of road, railroad and airport infrastructures and of their safety, management and construction, as well as the techniques for designing complex structural elements included in road structures and for choosing construction materials.

- The methods and tools for planning, designing, managing and running the transportation system as an integrated system of infrastructures, means, production technologies and organisational techniques of services for mobility.

- The methods for carrying out tests of high difficulty and interpreting data in various fields of Civil Engineering.

In addition, the curriculum provides extensive knowledge of computer aided design and computational methods which, in recent decades, have helped to innovate the entire field of engineering and applied sciences.

The first year consists of core and related subjects, as well as of class specific classes, aiming at strengthening interdisciplinary groundings. The second year of the course provides for advanced study in subjects related to various fields of civil engineering: structures and geotechnical engineering, hydraulics, road infrastructures and transports, and aims at achieving the above mentioned educational objectives. Elective courses (21 credits), other educational activities for better fitting the labour market (6 credits) complete the educational programme, ending with the final examination, awarded with 9 credits, aiming at testing the achievement of learning outcomes of students and their autonomy of judgment and communication skills.

Professional opportunities

Civil engineers may work in technical and/or managerial positions, with a responsibility level adequate to their level of competences, in the fields:

- Of self-employment, in professional offices and companies, carrying out design and/or consulting activities aiming at the definition of technical support to decision making processes;

- Of private companies in the field of civil works (construction and maintenance);

- of public bodies with technical branches for the planning, design and management of civil works and infrastructures (owner Authorities and management companies);

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- of companies, corporations, trusts and agencies of management and control systems of works and services, with regard in particular to facilities and civil infrastructure;
- of services company for the feasibility study of the urban and regional impact of civil works and infrastructure;
- of public and private research and testing Centres

Final examination features

It consists of the discussion of an original dissertation, related to a topic proposed by the student and approved by the Board of the Degree Course; the dissertation should be written under the guidance of one or more supervisors, of which at least one must be a tenured professor or a researcher of the University of Palermo, or of the Degree Course. Students may take the final examination after completion of all educational activities provided by the Course programme. The thesis consists of a project or original theoretical or experimental research work and represents an important opportunity for the acquisition of operational skills, for learning analysis tools and techniques, for the preparation of interpretation schemes, and for the development of procedures. The final examination aims at assessing the scientific maturity reached by the student, his/her independence of judgment and mastery of the subjects, the ability to work autonomously, as well as communication skills. The discussion also aims at evaluating the student's general preparation in relation to educational content learned during the course. Part of the preparation of the final examination may be carried out during an internship. In this case, part of the credits awarded to the final examination might be awarded to the internship. The final examination procedures are specified in the Degree Course Educational Regulations.

Subjects 1 ° year	CFU	Sem.	Val.	SSD	TAF
01122 - AQUEDUCTS AND SEWERAGES *Nasello(PA)*	9	1	V	ICAR/02	B
18633 - TOWN PLANNING *Bonafede(PA)*	6	1	V	ICAR/20	C
21621 - VIBRATIONS *Pirrotta(PO)*	9	1	V	ICAR/08	B
22245 - ADVANCED GEOMECHANICS *Ferrari(PO)*	9	2	V	ICAR/07	B
21620 - DESIGN OF STEEL AND CONCRETE STRUCTURES *Campione(PO)*	9	2	V	ICAR/09	B
13465 - ROAD, RAILROAD AND AIRPORT TECHNIQUE *Celauro(PA)*	9	2	V	ICAR/04	B
21866 - SANITARY AND ENVIRONMENTAL ENGINEERING *Mannina(PO)*	6	2	V	ICAR/03	C
Free subjects (suggested)	6				D

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Subjects 2 ° year	CFU	Sem.	Val.	SSD	TAF
09141 - FOUNDATIONS AND SUPPORT WORKS *Ziccarelli(PA)*	9	1	V	ICAR/07	B
22279 - GEOTECHNICAL EXPERIMENTATION *Rosone(RD)*	6	2	V	ICAR/07	B
06633 - SLOPE STABILITY *Rosone(RD)*	9	2	V	ICAR/07	B
05917 - FINAL EXAMINATION	9	2	G		E
Optional subjects	6				B
Stage and others	6				F
Free subjects (suggested) II	12				D

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OPTIONAL SUBJECTS

Stage and others	CFU	Sem.	Val.	SSD	TAF
21167 - INTERNSHIP 2 CREDITS	2	1	G		F
11033 - INTERNSHIP 3 CREDITS	3	1	G		F

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OPTIONAL SUBJECTS

Stage and others	CFU	Sem.	Val.	SSD	TAF
15458 - INTERNSHIP 4 CREDITS	4	1	G		F
11351 - INTERNSHIP 5 CREDITS	5	1	G		F
11028 - INTERNSHIP 6 CREDITS	6	1	G		F
11034 - OTHER EDUCATIONAL ACTIVITIES - 1 CREDIT	1	1	G		F
11035 - OTHER EDUCATIONAL ACTIVITIES - 2 CREDITS	2	1	G		F
11036 - OTHER EDUCATIONAL ACTIVITIES - 3 CREDITS	3	1	G		F
11037 - OTHER EDUCATIONAL ACTIVITIES - 4 CREDITS	4	1	G		F
11038 - OTHER EDUCATIONAL ACTIVITIES - 5 CREDITS	5	1	G		F
11039 - OTHER EDUCATIONAL ACTIVITIES - 6 CREDITS	6	1	G		F

Optional subjects	CFU	Sem.	Val.	SSD	TAF
09136 - COMPUTATIONAL STRUCTURAL MECHANICS *Parrinello(PA)*	6	2	V	ICAR/08	B
22240 - STRUCTURAL REHABILITATION WITH TRADITIONAL AND INNOVATIVE TECHNIQUES *Campione(PO)*	6	1	V	ICAR/09	B

Free subjects (suggested)	CFU	Sem.	Val.	SSD	TAF
22316 - BIM FOR STRUCTURES AND INFRASTRUCTURES *Inzerillo(PA)*	6	1	V	ICAR/17	D
22315 - PRINCIPLES OF APPLIED CIRCULAR ECONOMICS FOR CIVIL BUILDING ENGINEERING *Di Mino(PA)*	6	2	V	ICAR/04	D
19487 - YARD SAFETY *Pennisi(PA)*	6	1	V	ICAR/11	D

Free subjects (suggested) II	CFU	Sem.	Val.	SSD	TAF
22319 - ENVIRONMENTAL SUSTAINABILITY OF WORKS AND INFRASTRUCTURES *Viviani(PQ)*	6	1	V	ICAR/03	D
19653 - GEO-THERMAL AND BIOMASS PLANTS *Curto(RD)*	6	1	V	ING-IND/10	D

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