UNIVERSITÀ DEGLI STUDI DI PALERMO

Department: Engineering

A.Y. 2021/2022

DEGREE COURSE IN CIVIL ENGINEERING

Characteristics

Class of Bachelor's Degree (BSc) on Civil and environmental engineering (L-7)	3 YEARS	PALERMO	FREE ACCESS	2221

Educational objectives

The Degree Course in Civil Engineering) specifically aims at educating professionals capable of having technical and technical-organizational positions in contexts requiring the knowledge of the methodological-operational aspects of core sciences as well as of civil engineering, For this reason, the course provides for the basic mathematics-physics and scientific-technical training needed to interpret, describe and solve specific problems, enabling students to learn, through individual study too and to update their competences, both autonomously and through specific teachings,
The objective is to enable undergraduates to enter the labour market with the autonomous capability of changing and adapting to various functions (technician releasing authorizations and the like in public agencies and administrations, yard technicians, planning support, etc…) without being limited in closed areas by an excessively sectorial training.
The course will provide basic knowledge with respect to:
- The principles, methods and tools for modelling and calculation of structures, as well as the criteria for the design of structural elements and structures of medium complexity in reinforced concrete and steel by means of recurrent patterns.

- The principles, methodologies and tools for the calculation of the design variables and the design of hydraulic structures of medium complexity in urban and suburban areas, through the application of recurring and consolidated computational methods.
- The criteria and methods for geometric design of road infrastructures and their safety, management and construction.
- The engineering of transport systems (urban collective, railroad, individual), with respect to the analysis of transport demand and supply.
- Survey Engineering and the criteria, problems and methodologies for the survey, control, monitoring and representation of structures and land, as well as the basic methods for data processing with respect to the system and the realization of topographic surveys of medium complexity at different scales and extension.
- The principles of the physical and mechanical characterization of land and the main experimental methods for the identification of the relevant parameters.
- The methods to perform experimental tests of medium difficulty and interpreting data in various fields of Civil Engineering.

The course is structured as follows:
- The first year provides the basic knowledge for achieving a scientific language in mathematics, chemistry, physics and representation, preparatory for further studies, and also the testing of at least one foreign language;
- During the second year students will study some disciplines in the fields of mathematics and physics as well as other disciplines of civil engineering, useful for the scientific and technical training needed to interpret, describe and solve the typical issues of the educational programme.
- The third year provides for the typical applied knowledge of the class L -7 aiming at the achievement of the above-mentioned specific objectives.
The educational methods and teaching tools through which the expected learning outcomes are achieved are the following: lectures and classroom exercises, laboratory activities, technical visits, internships at companies, government agencies, professional firms and engineering companies, seminars, participation in Conferences.
The programme is completed by elective courses (at least 12 credits), other activities, useful for entering the labour market (at least 3 credits) and the final examination (at least 3 credits), aiming at assessing the achievement of learning outcomes as well as students' independence of judgment and communication skills.

Legenda: Per. = periodo o semestre, Val. = Valutazione (V=voto, G=giudizio), TAF= Tipologia Attività Formativa (A=base, B=caratterizzante, C=Affine, S=stages, D=a scelta, F=altre)

Professional opportunities

Profile:
Civil Engineer
Functions:
1st cycle graduates in Civil Engineering may have the role of civil Construction Technician, carrying out activities based on the application of science, aiming at providing support and collaboration to:
- The design, supervision of works, estimation and testing of public works;
- Accounting activities related to simple civil construction, through the use of standardized methodologies;
- Various kinds of direct, instrumental and geometric surveys.

Skills:
Civil construction technicians possess adequate knowledge of:
-the principles, methods and tools for the modelling and calculation of structures, as well as the criteria underlying the design of structural elements and medium complexity structures, through the application of recurring patterns;
- the principles, methodologies and tools for calculating the project variables and for the design of medium complexity hydraulic works;
- the criteria and methods for the geometric design of road infrastructures and their safety;
- the criteria and methodologies for the survey, control, monitoring and representation of the structures and of the territory and of the basic methods in the processing of data relating to the plant and the implementation of medium complexity topo-cartographic surveys;
- the principles of the physical-mechanical characterization of the lands and the main methodologies for determining the relative parameters;
- The methods for conducting medium difficulty experimental tests and interpreting data in various sectors of Civil Engineering.

Professional opportunities:
The Civil Construction Technician can work in the following areas:
Private practice, public bodies with technical branches, public and private companies, engineering companies, civil construction industries.

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, which is prepared by the undergraduate under the guidance of one or more supervisors, of which at least one must be a 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 outline. The thesis work consists of a project or of an original theoretical or experimental research and represents an important opportunity for the acquisition of operational capabilities, for learning analysis tools and techniques, processing and interpretation schemes 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, and his/her communication skills. The discussion also aims at evaluating the student's general preparation in relation to educational content learned during the course.

Subjects 1 ° year	CFU	Sem.	Val.	SSD	TAF
15616 - CHEMISTRY *Bellardita(PA)*	6	1	V	CHIM/07	A
07873 - DESIGN AND CAD *Inzerillo(PA)*	9	1	V	ICAR/17	B
19109 - MATHEMATICAL ANALYSIS - INTEGRATED COURSE	12	Ann.	V		
- MATHEMATICAL ANALYSIS - MODULE 1 *Tornatore(PA)*	*6*	*1*		*MAT/05*	*A*
- MATHEMATICAL ANALYSIS - MODULE 2 *Tornatore(PA)*	*6*	*2*		*MAT/05*	*A*
04677 - ENGLISH LANGUAGE	3	1	G		E
03657 - APPLIED GEOLOGY *Rotigliano(PO)*	6	2	V	GEO/05	B
03675 - GEOMETRY *Favacchio(RD)*	6	2	V	MAT/03	A
13867 - PHYSICS 1 *Agnello(PO)*	9	2	V	FIS/03	C
17716 - TECHNOLOGY OF MATERIALS *Fiore(PA)*	6	2	V	ING-IND/22	C
	57				

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Subjects 2 ° year	CFU	Sem.	Val.	SSD	TAF
06313 - MECHANICS OF MATERIALS AND THEORY OF STRUCTURES *Palizzolo(PA)*	9	1	V	ICAR/08	B
07870 - PHYSICS II *Valenti(PO)*	6	1	V	FIS/01	A
04954 - RATIONAL MECHANICS *Sammartino(PO)*	9	1	V	MAT/07	A
03769 - HYDRAULICS *Ferreri(PA)*	9	2	V	ICAR/01	B
01463 - TECHNICAL ARCHITECTURE *Vinci(PA)*	9	2	V	ICAR/10	B
07626 - TOPOGRAPHY *Dardanelli(PA)*	6	2	V	ICAR/06	B
Free subjects	12				D
	60				

Subjects 3 ° year	CFU	Sem.	Val.	SSD	TAF
07189 - APPLIED CONSTRUCTIONS *La Mendola(PO)*	9	1	V	ICAR/09	B
09128 - ROAD DESIGN *Grana'(PO)*	9	1	V	ICAR/04	B
03318 - TECHNICAL PHYSICS	9	1	V		
- MODULE I *La Gennusa(PA)*	*6*	*1*		*ING-IND/11*	*B*
- MODULE II *La Gennusa(PA)*	*3*	*1*		*ING-IND/09*	*C*
17613 - TRANSPORTATION TECHNIQUE AND ECONOMICS AND VALUATION - INTEGRATED COURSE	12	Ann.	V		
- TRANSPORTATION TECHNIQUE AND ECONOMICS *Salvo(PA)*	*6*	*1*		*ICAR/05*	*B*
- ECONOMICS AND LAND VALUATION *Napoli(PA)*	*6*	*2*		*ICAR/22*	*C*
03699 - GEOTECHNICS *Ferrari(PO)*	9	2	V	ICAR/07	B
03787 - HYDROLOGY *Cannarozzo(PA)*	6	2	V	ICAR/02	B
05917 - FINAL EXAMINATION	3	2	V		E
Stage and others	6				F
	63				

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
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

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OPTIONAL SUBJECTS

Stage and others	CFU	Sem.	Val.	SSD	TAF
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

PROPAEDEUTICAL TEACHINGS

03699 - GEOTECHNICS
- 03657 - APPLIED GEOLOGY
- 06313 - MECHANICS OF MATERIALS AND THEORY OF STRUCTURES
- 03769 - HYDRAULICS

03769 - HYDRAULICS
- 19109 - MATHEMATICAL ANALYSIS - INTEGRATED COURSE

03787 - HYDROLOGY
- 03769 - HYDRAULICS

04954 - RATIONAL MECHANICS
- 19109 - MATHEMATICAL ANALYSIS - INTEGRATED COURSE

06313 - MECHANICS OF MATERIALS AND THEORY OF STRUCTURES
- 03675 - GEOMETRY
- 04954 - RATIONAL MECHANICS

07189 - APPLIED CONSTRUCTIONS
- 06313 - MECHANICS OF MATERIALS AND THEORY OF STRUCTURES

07626 - TOPOGRAPHY
- 19109 - MATHEMATICAL ANALYSIS - INTEGRATED COURSE

09128 - ROAD DESIGN
- 07626 - TOPOGRAPHY
- 07873 - DESIGN AND CAD

17716 - TECHNOLOGY OF MATERIALS
- 15616 - CHEMISTRY