



UNIVERSITÀ DEGLI STUDI DI PALERMO

Department: Engineering

A.Y. 2023/2024

DEGREE COURSE IN TECHNIQUES FOR CONSTRUCTION AND TERRITORY - TECHNIQUES FOR BUILDINGS AND TERRITORY -

Characteristics



Educational objectives

The Degree Course prepares for the profession of Graduate Surveyors, qualified technicians in the civil and territorial construction and infrastructure sector, through a professionalizing programme, including laboratory practice as well as a significant practical internship at companies, organizations and professional offices in the sector.

The Degree Course trains professionals with a cultural profile concentrated on three main cores: land surveying, construction, and appraisal. The contents taught also include energy efficiency, works and construction safety, building protection, building monitoring, occupational safety, real estate valuation and asset management. The entire course will have a strong focus on digitization and IT management of projects and activities. In the teachings and, above all, in the laboratories, various computer programs useful for the activities of trained professionals will be taught: SW for CAD, BIM, GIS, topographic survey, energy certification as well as the advanced use of a spreadsheet, useful for carrying out technical calculations, reports, bills of quantities. The use of digital tools for land surveying and monitoring will be taught, such as topographic total stations (manual and motorized), GNSS geodetic receivers, scanning lasers, drones.

After a basic training in scientific disciplines, the course covers legislative aspects, valuation, yards operations, topographic survey, cadastre, representation, structural static structures and behaviours, building support and data management using GIS and BIM.

In particular, the first year prepares students for the basic disciplines and activities and includes:

Fundamentals of mathematics, physics, chemistry, graphic restitution, estimates and statics, supported by the first laboratories, aiming at to consolidating the contents.

The second year prepares students on specific issues, inherent to the building and construction process in its various forms, of new constructions and management of the existing with particular attention to energy aspects.

The third year mostly consists of workshops consolidating the knowledge and experience of previous years and of a professional internship providing students the skills that will help them to access the labour market.

Professional opportunities

Profile:

Construction and land technician

Functions:

These professionals work in the fields related to construction, building and the Territory. They carry out activities in synergy with engineers and architects for the construction of new buildings and public works. They also collaborate in the design of building recovery and retrofitting, with reference to safety, energy efficiency and internal environmental quality. They can also carry out activities in contexts related to the management and representation of the territory to survey the territory and the built environment.

These professionals:

- design and carry out topographic surveys and return the results in numerical or cartographic form using the most advanced technologies currently available.
- update the cadastral, state property and local authority databases.
- perform appraisals.
- organize and manage construction site and workplace activities, including drawing up building practices for the design and execution of the works.
- perform analysis and monitoring activities aimed at energy efficiency, energy certification and at the certification of the sustainability and healthiness of the environments.
- plan, direct and supervise the building works related to the structural, distributive and plant engineering aspects of modest buildings.
- support the monitoring and diagnostics of structures, infrastructures and the territory as well as ancillary systems.

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)

- perform assessments on aspects concerning the technical and economic feasibility, the calculation of costs as well as the production and construction process of construction works, ancillary systems and territorial transformations with the related functional elements, and manage the digital support tools for urban/architectural planning and design.

Skills:

The specific professional skills of these technicians enable them to operate directly on the territory in the civil and rural construction and infrastructure sectors.

In particular:

- the design of the topographic, cartographic and architectural survey, including the subsequent processing of data and graphic rendering (cartographic and georeferenced), through the use of the most advanced technologies available for survey and rendering.
- activities based on the use of digital methodologies to support urban/architectural planning and design.
- support activity for the monitoring and diagnostics of structures, infrastructures, and the territory as well as of ancillary systems.
- activities related to the management and updating of databases: cadastral, state property and local authorities.
- estimates.
- safety in the management of construction sites and workplaces, with drafting of practices for planning and execution.
- analysis and monitoring activities aimed at energy efficiency, energy certification and certification of the sustainability and healthiness of the environments.
- design, construction supervision and supervision of the structural, distributive and plant engineering aspects relating to modest constructions.

Furthermore. These professionals possess adequate knowledge of the aspects related to the technical and economic feasibility, the calculation of costs as well as the production and construction process of building works, ancillary systems and territorial transformations with the related functional elements.

Employment opportunities:

- Professional offices.
- Private companies (in technical, commercial or production facilities).
- Public Administration (in Urban Planning and Public Works Offices, Superintendencies and Regional Directorates of Cultural and Landscape Heritage, Local Authorities, Local Health Authorities, State Property Agencies, Land Agencies, Civil Engineering Offices, Fire Brigades, Civil Motorization offices, etc..)

Enrolment in a 2nd cycle degree is not a natural outlet for graduates of this course.

Final examination features

The final exam includes a practical assessment test (PPV) of the professional skills acquired during the the internship, aiming at ascertaining the suitability of the candidate to practice the profession, which precedes the final exam. The PPV evaluates the knowledge of the professional issues and the ability to solve one or more practical problems consistent with those analysed during the TPV (Evaluative Practice Internship). Students passes the PPV with the achievement of “pass” mark, which does not contribute to determining the degree mark, but gives access to the discussion of the degree thesis. The theme of the thesis is chosen by the student from a list by the Board of the Degree Course with its own resolution and published at the beginning of the Academic Year on the course website. Based on the indicated bibliography, during the interview students will have to demonstrate their ability to analyse, deepen and critically re-elaborate the proposed topic as well as being able to communicate effectively and professionally.

Subjects 1 ° year	CFU	Sem.	Val.	SSD	TAF
23544 - CONSTRUCTION AND TERRITORY SURVEY TECHNIQUES <i>Dardanelli(PA)</i>	6	1	V	ICAR/06	B
23545 - DIGITAL REPRESENTATION <i>Inzerillo(PA)</i>	6	1	V	ICAR/17	B
23541 - PRINCIPLES OF MATHEMATICS AND ELEMENTS OF GEOMETRY <i>Calabrese(PC)</i>	6	1	V	MAT/05	A
12447 - PRINCIPLES OF PHYSICS <i>Principato(PA)</i>	3	1	V	FIS/01	A
23550 - CAD AND BIM LABORATORY	6	1	G		F
23546 - CONSTRUCTION MATERIALS - LABORATORY	6	1	G		F
23549 - WORKS BUDGETING AND ACCOUNTING - LABORATORY	3	1	G		F
15069 - YARD SAFETY - WORKSHOP	6	1	G		F
04677 - ENGLISH LANGUAGE	3	1	G		E

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Subjects 1 ° year	CFU	Sem.	Val.	SSD	TAF
23542 - PRINCIPLES OF BUILDING MATERIALS CHEMISTRY <i>Dispensa(PO)</i>	3	2	V	CHIM/07	A
23548 - PRINCIPLES OF PRIVATE, ADMINISTRATIVE AND URBAN PLANNING LAW <i>Ventimiglia(PA)</i>	3	2	V	IUS/10	C
23543 - PRINCIPLES OF STRUCTURAL STATICS <i>Terravecchia(RD)</i>	6	2	V	ICAR/08	B
23547 - PRINCIPLES OF VALUATION AND REAL ESTATE APPRAISAL	6	2	V	ICAR/22	C

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Subjects 2 ° year	CFU	Sem.	Val.	SSD	TAF
23535 - BUILDING PROCESS AND RECUPERATION TECHNIQUES <i>Pennisi(PA)</i>	6	1	V	ICAR/11	B
23539 - ENERGETIC AND ENVIRONMENTAL ASSESSMENT <i>Cirrincone(RD)</i>	6	1	V	ING-IND/11	B
09130 - PRINCIPLES OF ARCHITECTURE	6	1	V	ICAR/14	B
23537 - PRINCIPLES OF BUILDING TECHNIQUE AND STRUCTURAL RECOVERY <i>La Mendola(PO)</i>	6	1	V	ICAR/09	B
23533 - PRINCIPLES OF ROAD CONSTRUCTION <i>Grana'(PO)</i>	6	1	V	ICAR/04	B
23540 - CONSTRUCTION TECHNIQUE LABORATORY	6	1	G		F
23585 - ENERGETIC AND ENVIRONMENTAL ASSESSMENT OF BUILDINGS	6	1	G		F
23534 - GEOMATICS LABORATORY	6	1	G		F
23398 - PRACTICAL EVALUATION INTERNSHIP (TPV) I	12	1	G		S

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Subjects 3 ° year	CFU	Sem.	Val.	SSD	TAF
23584 - CADASTRAL PROCEDURES	6	1	G		F
23538 - STRUCTURAL AND INFRASTRUCTURAL MONITORING - LABORATORY	3	1	G		F
23536 - TECHNICAL-ADMINISTRATIVE PROCEDURES FOR THE BUILDING INDUSTRY	3	1	G		F
23397 - PRACTICAL EVALUATION INTERNSHIP (TPV) II	36	1	G		S
05917 - FINAL EXAMINATION	3	2	V		E
Free subjects	6				D

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