



# UNIVERSITÀ DEGLI STUDI DI PALERMO

**Department: Engineering**

**A.Y. 2019/2020**

## **DEGREE COURSE IN BUILDING ENGINEERING, INNOVATION AND RETROFITTING - BUILDING ENGINEERING -**

### **Characteristics**



Class of Bachelor's Degree  
(BSc) on Building Sciences  
(L-23)



3 YEARS



PALERMO



FREE ACCESS



2226

### **Educational objectives**

Specific objectives:

The three years Degree course provides for a flexible path, either oriented on purely engineering aspects (Engineering curriculum), or integrated by aspects related to the Architecture of the building (Architecture curriculum).

In the Engineering curriculum, the first year provides students with the basic language of engineering and includes teachings in the fields of mathematics, physics, technical and compositional architecture, and the history of architecture; the second year completes the basic training started the first year and provides student with the typical languages of construction engineering, including teachings related to hydraulic plant engineering and technical installations, as well as teachings related to the structures, and teachings concerning urban planning and topography; the third year prepares the student on applications to construction engineering, in particular in the areas of structural design of new and the existing buildings. The third year is completed with two elective courses enabling students to deepen the legislation related to urban planning, to public works and/or facilities and/or to the roads serving residential areas and/or to project management and/or to restoration.

The second curriculum differs from the first one for the introduction of teachings with more specific architectural/town planning orientation. In particular, the course provides more teachings related to the history of architecture and architectural design. The third year is completed by two optional courses as in the case of the first curriculum.

The training is completed by the activities pursuant to Article 10 and by the final work, contributing, together with all the other courses providing for group activities, to the development of relational and contextual skills.

The degree course is divided into four learning areas. The first one is related to basic mathematical, chemical and physical scientific training; the second concerns general engineering training in the construction sector; the third concerns the specific building engineering training, the fourth one is dedicated to relational and contextual training.

### **Professional opportunities**

Profile:

Building, Innovation and Retrofitting Engineer:

The Building, Innovation and Retrofitting Engineer:  
can take on the function of

- 1) Technical designer of new and existing buildings
- 2) Technical designer
- 3) Surveyor
- 4) Construction yard management technician
- 5) Territorial planning Technician
- 6) Economic evaluator in the estimation processes

Skills:

Graduates mainly operate in the field of building design and in the construction of works on traditional and industrialized construction sites, for new construction or retrofitting interventions; in the management and organization of the building process, with respect to materials, products and components; in the field of survey and evaluation of the building heritage.

In relation to the function, graduates in Building Engineering, Innovation and Retrofitting are able to

- design and direct the construction work of new construction sites

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)

- design and manage the construction site works to be recovered
- design and coordinate safety on construction sites
- perform technical and administrative tests and verify the standards, functions and safety of the structures
- perform static calculations for simple reinforced concrete works, with the use of standardized methods
- prepare the tender specifications
- manage ordinary or extraordinary maintenance activities
- carry out surveys and executive drawings
- take care of relations with the client, the workers, the colleagues, the institutions.

Professional opportunities:

- Private practice
- Technician in companies selling products for the engineering industry
- Technician in Companies for the recovery of the existing building heritage, as well as for the construction of new buildings or parts of them (plants, structures, etc.)
- Technician in companies in the field of mechanical characterization of materials and structures
- Technician in Public Bodies dealing with building engineering, in terms of development and redevelopment of the territory and buildings (Municipality, Region, Civil Engineering, Superintendence, etc.)
- Teaching in elementary and primary schools
- Access to the 2nd cycle Degree in Building Engineering

### Final examination features

The final exam consists of a brief presentation by the student followed by an interview with the examining Board. The subject of the presentation and subsequent discussion is chosen by the student from a list of topics prepared by the Board of the Degree course with its own resolution and published, at the beginning of each academic year, on the course website. Based on the suggested bibliography, during the interview the student will have to demonstrate to be able 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
20424 - CONTEMPORARY HISTORY AND DESIGN - INTEGRATED COURSE	12	1	V		
- ARCHITECTURAL DESIGN Margagliotta(PA)	6	1		ICAR/14	B
- HISTORY OF CONTEMPORARY ARCHITECTURE Scaduto(PA)	6	1		ICAR/18	A
20403 - DESIGN AND ELEMENTS OF CAD	9	1	V		
- ELEMENTS OF CAD Mancuso(PO)	3	1		ING-IND/15	C
- DRAWING Inzerillo(PA)	6	1		ICAR/17	A
03675 - GEOMETRY Cirrito(PC)	6	1	V	MAT/03	A
19109 - MATHEMATICAL ANALYSIS - INTEGRATED COURSE	12	Ann.	V		
- MATHEMATICAL ANALYSIS 1 Tornatore(PA)	6	1		MAT/05	A
- MATHEMATICAL ANALYSIS 2 Triolo(PO)	6	2		MAT/05	A
04677 - ENGLISH LANGUAGE	3	1	G		E
03295 - PHYSICS 1 Agnello(PO)	9	2	V	FIS/03	C
01463 - TECHNICAL ARCHITECTURE Colajanni(PA)	9	2	V	ICAR/10	B

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Subjects 2 ° year	CFU	Sem.	Val.	SSD	TAF
07870 - PHYSICS II Valenti(PO)	6	1	V	FIS/01	A
06636 - STATICS Spada(PA)	6	1	V	ICAR/08	B

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Subjects 2 ° year	CFU	Sem.	Val.	SSD	TAF
17612 - TECHNICAL PHYSICS FOR THE BUILDING INDUSTRY <i>Peri(PA)</i>	9	1	V	ING-IND/11	B
07686 - TOWN PLANNING <i>Vinci(PA)</i>	6	1	V	ICAR/21	B
16742 - CHEMISTRY AND TECHNOLOGY OF MATERIALS <i>Fiore(PA)</i>	9	2	V	ING-IND/22	B
20405 - HYDRAULICS AND HYDRAULIC PLANTS <i>Termini(PO)</i>	6	2	V	ICAR/01	B
06313 - MECHANICS OF MATERIALS AND THEORY OF STRUCTURES <i>Giambanco(PO)</i>	9	2	V	ICAR/08	B
20404 - TOPOGRAPHIC SURVEY <i>Lo Brutto(PA)</i>	9	2	V	ICAR/06	B

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Subjects 3 ° year	CFU	Sem.	Val.	SSD	TAF
07189 - APPLIED CONSTRUCTIONS <i>Cavaleri(PO)</i>	9	1	V	ICAR/09	B
20406 - LANDS AND FOUNDATIONS MECHANICS <i>Zicarelli(PA)</i>	9	1	V	ICAR/07	B
20422 - BUILDING RECOVERY - INTEGRATED COURSE	12	2	V		
- BUILDING PROCESS AND BUILDING RECOVERY <i>Pennisi(PA)</i>	6	2		ICAR/11	B
- INNOVATIVE TECHNIQUES FOR STRUCTURAL RECOVERY <i>Colajanni(PA)</i>	6	2		ICAR/09	B
05917 - FINAL EXAMINATION	3	2	V		E
Optional subjects	6				C
Optional subjects II	6				B
Stage and others	3				F
Free subjects	12				D

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## OPTIONAL SUBJECTS

Stage and others	CFU	Sem.	Val.	SSD	TAF
09787 - OTHER EDUCATIONAL ACTIVITIES	3	1	G		F
07899 - PROFESSIONAL PRACTICE	3	1	G		F
Optional subjects	CFU	Sem.	Val.	SSD	TAF
12655 - PRINCIPLES OF ELECTRICAL EQUIPMENT <i>Mineo(RU)</i>	6	1	V	ING-IND/33	C
20409 - PROJECT MANAGEMENT <i>Giallanza(RD)</i>	6	1	V	ING-IND/17	C
Optional subjects II	CFU	Sem.	Val.	SSD	TAF
20410 - ELEMENTS OF ROAD DESIGN FOR SETTLEMENTS AND RESIDENTIAL AREAS <i>Celauro(PO)</i>	6	2	V	ICAR/04	B
20411 - TOWN PLANNING REGULATIONS AND PUBLIC WORKS <i>Ventimiglia(PA)</i>	6	2	V	IUS/10	B

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