



# DIDACTIC REGULATION

Civil Engineering and  
Environmental Engineering  
Degree Class L-7

Faculty of Engineering

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# DIDACTIC REGULATION FOR THE DEGREE COURSE IN CIVIL ENGINEERING AND ENVIRONMENTAL ENGINEERING

## Introduction and area of competence

1. The present Regulation shall regulate the didactic organization of the Degree Course in Civil Engineering and Environmental Engineering L-7 and, in particular, shall determine the elements required in the art. 12 of DM 270/04.
2. The present didactic Regulation of the Degree Course in Civil Engineering and Environmental Engineering L-7, pursuant to the Didactic Regulation of the University, shall be approved by the competent didactic structure by majority and shall be approved by the Technical-Supervisory Committee.

## I: PURPOSES AND DIDACTIC RULES

### Art. 1 - Premises

1. The Degree Course in Civil Engineering and Environmental Engineering (hereinafter referred to as DC) belongs to the Degree Class L-7 as provided for in D.M. 270/2004.
2. The administrative authorities of the DC shall be the Coordinator (hereinafter referred to as CCdL), the Council of the DC and the Commission for the Didactic Coordination (CCD):
  - a. the Coordinator, a teacher appointed by decision of the Technical-Supervisory Committee and shall hold a coordinating function;
  - b. the Commission for the Didactic Coordination, with the purpose of promoting and verifying the quality and the unity of the teachings of the DC;
  - c. The Council of the DC shall be comprised of teachers who are entitled to at least one teaching.
3. The didactic rules of the DC in Civil Engineering and Environmental Engineering along with its general framework of formative activities, shall be reported in the attachment forming part of the present Regulation (Attachments 1-4).
4. The present Regulation, pursuant to the academic Didactic Regulation, and to the other didactic regulations, shall regulate the didactic organization of the Degree Course on the elements which were not defined in the aforementioned Regulations.

## Art. 2 - Structure of the Degree Course

1. The DC belongs to the Faculty of Engineering.
2. The DC shall be organized in three years, shall provide for the acquisition of 180 credits (CFU) and aims to train engineers with good cultural foundations and an appropriate technical preparation allowing the insertion into the labor market, and to take on a technical/organizational role in the different contexts, typical of civil and environmental engineering, such as public administrations, companies, as well as private practice. Upon completion of the studies, after having acquired the 180 credits the students shall be conferred the following study title: “Doctor in Civil and Environmental Engineering”. The DC aims to provide to the students basic/characterizing/supplementary knowledge and competences in all the sectors of the engineering discipline; ability to apply the acquired knowledge in various contexts; proficiency in the English language. Such knowledge and competences shall allow the admission to the Master’s Degree in Engineering and a good command of the conceptual, methodological and technical tools for the exercise of the profession of Junior Engineer.
3. The didactic rules of the Degree Course in Civil and Environmental Engineering along with its general reference framework of formative activities, the CFU assigned to each formative activity, drawn up according to a framework defined by ministerial decree and with due regard for the requirements of ANVUR, are contained in **Attachment 1**, which forms an integral part of the present Regulation.
4. The course of study in Civil Engineering and Environmental Engineering includes formative activities groups in the following typologies:
  - a. basic formative activities;
  - b. characterizing formative activities;
  - c. supplementary formative activities;
  - d. formative activities chosen by the students;
  - e. formative activities related to the preparation of the final dissertation;
  - f. formative activities for the development of further linguistic competences, for eventual formative internships, informatics, telematic and relational abilities.
5. The course profiles of each formative activities shall be available on the website of the University, at the following “search for a member of the teaching staff”  
<https://www.uniecampus.it/en/students/search-for-a-member-of-teaching-staff/>

### Art. 3 - Specific formative objectives and description of the educational path

1. The main purpose of the course shall be to train engineers with good cultural foundations and a broad-spectrum technical preparation allowing them to operate in the field of civil and industrial construction, of infrastructure and local interventions with particular attention to the environmental restrictions and problems. In particular, as regards the learning path, in the first year shall be provided the basic teachings of mathematics, physics and chemistry. Added to this is the study of a foreign language, IT, and technical drawing, the universal language among the engineers. From the second year shall be implemented the characterizing and supplementary activities of civil and environmental engineering, to which shall be added some inter-disciplinary teachings. During the third year, finally, shall be provided teachings more strictly related to the professional practice, to which shall be added the optional teachings chosen by the students. During the last year, in addition, it is provided for the aspiring engineer to carry out an internship and a final dissertation.
2. The DC shall be organized in two curriculums:
  - a. Civil and Environmental Curriculum
  - b. Landscape Curriculum
3. The present Regulation shall be completed with five documents attached annually prepared in the process of activation of the DC:
  - a. In **Attachment 1** shall be indicated the general framework of the formative activities;
  - b. In **Attachment 2** shall be indicated the formative activities proposed along with the list of the teachings and the study plan;
  - c. In **Attachment 3** shall be indicated the regulation on internships.
  - d. In **Attachment 4** shall be indicated the Supplementary Formative Activities Syllabus;
4. All the information required by the current legislation such as the formative objectives of the course of study and the activated formative activities, the list of the teachers involved in the DC, shall be published on the University website and on the Course Profile.
5. The programmes for the teachings and the other formative activities along with the calendar of the examination session and the other forms of final verification shall be published before the beginning of the academic year.

6. The formative activities autonomously chosen by the student, provided for in Article 2 paragraph 4, letter d, shall be selected among the teachings indicated in **Attachment 2**.
7. For all the matters related to their academic career and their study plans, the students shall turn to their tutor, who shall be their reference point. The Degree Course, in fact, shall offer an ongoing orientation and tutoring service which avails itself of the assistance of tutors selected by the University and operating in conjunction with the coordinator and the Council of the Course of Study.
8. There are no planned preparatory activities with regard to the education path. Ç
9. The Study Plan of the Degree Course in Civil and Environmental Engineering provides for a curricular internship for the student, with the purpose of practicing the skills acquired in the labour market, thus completing the academic training. The curricular internship shall consist in a period of practical activity exclusively aimed at the attainment of the CFU needed for the completion of the educational path. The duration of activity of curricular internship for the students of the Degree Course in Civil Engineering and Environmental Engineering shall be of 150 hours, equivalent to 6 CFU. The objectives and the activities of curricular internship shall be regulated by the Regulation for the Curricular Internships for the Degree Course in Civil Engineering and Environmental Engineering (**Attachment 3**).

#### **Art. 4 - Learning Results**

1. The graduates of the Course of Study shall demonstrate the following knowledge and competences:

##### **Knowledge and comprehension**

The graduates in Civil and Environmental Engineering shall demonstrate knowledge and abilities to understand the fundamental aspects of the theory of structural mechanics, of planning and maintenance of structures and infrastructures, of control and monitoring of the territory and of soil conservation. In particular they shall demonstrate to know and understand: the theoretical and applicative aspects of mathematics and of the other basic sciences; the theoretical and practical aspects of design of the structures and infrastructures, of geotechnics, hydraulics, geomatics; the main methodologies and technologies shall be used for the planning and the management of the structural entities of the territory, with particular attention to the preservation of the landscape and of the

environment.

### **Applying knowledge and comprehension**

The graduates in Civil and Environmental Engineering shall acquire adequate skills in order to apply the mathematic methods characteristic of Civil and Environmental Engineering in order to describe and analyze engineering problems of different nature; they shall be able to plan and develop dedicated applications according to well-known schemes, also in cooperation with other professional figures, within the industrial or public sector. The acquisition of said skills shall be evaluated through the different forms of examination, the relationship with the internship tutor and the final dissertation.

### **Making judgements**

The graduates shall obtain advanced skills in collecting and developing autonomous critical opinions and judgements, including eventual connected reflections on economic or social topics. The application and technical-engineering teachings present in the study plan shall contribute to the students' training even through individual and group exercises, promoting the abilities to select, elaborate and interpret information, facts and circumstance, with the aim to produce an evaluation on the different situations. The activities of stage and internship, as well as the activities assigned by the supervisor for the final dissertation shall also contribute to the aforementioned purposes.

### **Communication Skills**

During their professional activities, especially if carried out in the civil and environmental areas of interest, the engineers have the necessity to communicate information, ideas, problems and solutions to technical interlocutors, which shall be specialists in other disciplines, or to non-technical interlocutors. The engineers in training shall have the possibility to practice and their communicative abilities, so that, whatever their innate talents are, they shall acquire communication skills more than enough for professional purposes. In the course of some highly characterizing teachings, the students are expected to carry out exercises followed by a collective discussion, in order to promote their involvement and get used to public confrontation. Even the examinations

shall be carried out so as to offer a chance to exercise and test the communication skills of each student.

### **Learning skills**

The first level graduate in engineering shall have the ability to carry out further university studies with full scientific maturity and with total autonomy. In this regard, the learning abilities shall be stimulated especially passing on to the students the methodological rigor of the basic teachings, aimed at developing the inclination to a logical reasoning firmly based on the scientific method and at practicing the ability to concentrate. The organization of the courses is such as to facilitate and encourage the student to an independent learning activity, which represents a significant part of the totality of the duration of the course. The learning ability shall be evaluated also by means of self-assessment tests during the learning process. Other important didactic activities provided by the Course of Study and which contributes significantly to the ability to learn of the students are the internships, the stages, both in Italy and broad, as well as the final dissertation.

## **Art. 5 – Professional profiles and sources of employment and education prospects**

The triennial education offered by the Course of Study guarantees to the graduate in Civil and Environmental Engineering an immediate insertion into the labour market in the manners provided for by the current national legislation. The triennial graduates in Civil and Environmental Engineering shall integrate into the labour market as freelance professionals in the area of civil engineering, as employees of the public authorities, of the companies of the service companies and of the industries involved in this sector of the production of materials and artefacts for the construction industry. Upon completion of the course of study, the Civil and Environmental engineers shall integrate into the labour market with the qualification of Junior Engineer and enrol in the – Section B. The Civil-Environmental Engineer shall operate as freelance professional or at an engineering company, assuming the roles and tasks involving planning, design, development, supervision of works, trial, environmental impact assessment, both in public and private contexts. They shall also work in the capacity of employee, at technical bodies of public territorial entities or at state enterprises, at design offices and construction sites, at companies producing components or



building systems or building components. In the recent years, the aforementioned field of activity has broadened due to the growing awareness with regard to accessibility, safety and quality of the constructions, to the wealth of the residential and working environments and energy efficiency in the buildings, as well as conservation and promotion of the public and private building stock and of environmental safeguard and assessment.

#### Art. 6 – Admission and enrolment

1. The students who intend to enrol in the DC shall be in possession of a secondary school certificate or another qualification attained abroad and recognized as suitable pursuant to the current legislation
2. Subject to the admission requirements, the DC shall provide for an initial evaluation of proficiency at Italian (morphology, syntax and lexicon) and of the basic knowledge of mathematics and physics. The possession of the aforementioned knowledge and competences evaluated with the modalities provided for in the following paragraph.
3. The knowledge and the competences provided for in the previous paragraph, shall be verified through non-selective tests. An eventual negative result of the non-selective tests on mathematics and physics shall not compromise the matriculation, the attendance to the courses and the satisfactory completion of the related examinations, without prejudice to what is provided for in paragraph 6 of the present article.
4. Nevertheless it shall imply the attribution of additional training requirements (OFA) aimed at the fulfilment of the highlighted flaws. The contents of the OFA are listed in the syllabus provided in **Attachment 4**. If the students are recognized already acquired CFU (Art.12) related to the Area 01 – *Mathematical and Information Science*, from and including MAT/01 to and including MAT/09, the competences related to mathematics shall be considered appropriate. Also the recognition of the CFU related to the Area 02 – *Physical Sciences*, in particular from FIS/01 to FIS/05, implies the possession of knowledge and competences related to Physics.
5. The test referred to in the previous paragraph shall be carried out with the procedures provided for by the Virtual Learning Environment (VLE) of the University.
6. The (OFA) assigned to the students who failed the non-selective test provided for in the previous paragraph, shall consist in the telematic attendance to the

remedial courses provided in the VLE of the University. The OFA, which shall be fulfilled within the first year of the course, provide for the successful completion of a test for each remedial course.

7. The successful completion of the remedial courses shall not imply the attribution of any formative credit.
8. There shall not be any limits to the possibility of enrolment as 'studente fuori corso', nor a maximum number of repeatable years.
9. The recognition of the CFU of the incoming students as well as the quantification of the minimum number of CFU that the students shall attain in an academic year in order to continue the course of study to another academic year, shall be established in the related Academic Regulations. The Committee for the Study Plans, appointed by the Council of the Degree Course, shall provide for the assessment of the applications for recognition of the previous academic career or of the individual courses equivalent to the teachings, which are part of the training offer of the Degree Course.

#### **Art. 7 – Examinations and tests**

1. For each formative activity shall be provided an examination, upon completion of the didactic activities represented by the learning objects present in the VLE.
2. The students shall acquire the CFU attributed to a particular formative activity only passing the examination.
3. The examination and the final evaluations needed for the attainment of the title shall be 19. For the purpose of the calculation shall be considered the following formative activities:
  - a. basic;
  - b. characterizing;
  - c. supplementary;

In addition to the aforementioned activities, shall be required the following formative activities:

- d. activities related to the final dissertation;
  - e. further linguistic knowledge, eventual formative internships, IT, telematic and relational abilities.
4. The examinations shall consist in a test structured in conformity with what is provided for in the "Regulation for the implementation of the examination" and with due regard for the following rules:

- a. The examination shall be organized so as to evaluate the knowledge, the comprehension, and the application of the examination subjects, demonstrating the proficiency of the student in the didactic units/thematic units of the related teaching.
  - b. The final evaluation shall take into account the results of the partial examinations, carried out with due regard for the Academic Regulations, in which case the teacher shall specify in the “course profile” the kind of activity, the modalities and the criteria of evaluation.
5. The professor in charge of the teaching, before the beginning of each academic year, and with due regard for the general regulation of the University, shall communicate the modalities for the examination, the assessment criteria and the possibility to carry out partial examinations. The manner in which the examination shall be carried out shall be the same for all the students with due regard for what has been established at the beginning of the academic year.
6. The eventual partial verifications shall not replace the final examination.
7. With regard to the implementation of the examinations shall be applicable the rules provided for by the Academic Regulation.

#### **Art 8 - Duration**

1. Shall be applicable the rules provided for by the Academic Regulation.

#### **Art 9 - Mobility and studying abroad**

1. The Degree Course in Civil and Environmental Engineering, in line with the provisions of the University shall promote the exchange of teachers and students through international cooperation and bilateral agreements. In this regard see the indications published on the website of the University on the International Cooperation and the Erasmus Policy at the following link:  
<https://www.uniecampus.it/ateneo/cooperazione-internazionale/index.html>.

#### **Art. 10 - Final Dissertation**

1. The final dissertation shall be written by the student with the supervision of a teacher of the Degree Course in Civil and Environmental Engineering L-7 or of an external teacher entitled to one of the teachings provided for the Degree Course in Civil Engineering LM-23, and eventually a co-supervisor. The elaboration of the final dissertation, shall begin at least six months before the date estimated for

the discussion, in order to guarantee its accuracy. The discussion of the final dissertation shall consist in the presentation of a written dissertation realized by the student under the guidance of a supervisor with due regard for and with the procedures provided for in the related Academic Regulations.

2. The final dissertation shall focus on any subject related to one or more formative activities of the following typology:

- a. basic;
- b. characterizing;
- c. supplementary;
- d. optional

provided for in art 2 paragraph 4, among those activated in the DC and registered in the student's study plan.

3. The final dissertation shall, in exceptional circumstances, be written in a foreign language, agreed upon in advance with the supervising teacher and with the Coordinator of the DC. In this case, the student shall draft a detailed summary of the dissertation in Italian.

4. The dissertation shall refer to the following typologies:

- a. a critical analysis of a particular research article or of a theoretical contribution;
- b. an in-depth theoretic and/or empirical analysis of a subject related to a particular teaching or to another didactic activity;
- c. a report on a practical experience (corroborated by theoretical and critical references).

5. The final dissertation, evaluated on the basis of well-defined parameters (such as difficulty, competence in the bibliographic research, autonomy, quality of the dissertation) shall be assigned a maximum of 6 points.

#### **Art. 11 - Attainment of the Degree**

The student shall be attain the Degree with at least 180 CFU and upon completion and discussion of the final examination (final dissertation).

1. With regard to the conditions for the admission to the final dissertation, the degree examination board, the implementation of the examination and the final grade see the Academic Regulation for the final dissertation.

2. The secretariat upon request, shall provide the graduate students with the Diploma Supplement, which shall describe the category, the level, the context,

the content and the status of the studies carried out in accordance with the standard eight-point plan developed on the initiative of the European Commission, the European Council and of the UNESCO.

## **II – OPERATIVE RULES**

### **Art. 12 - Obligations related to frequency**

1. The student shall be admitted to the examination related to a determined teaching only after having implemented all the online learning objects making up the course, except for expressed and motivated waivers provided for by the teachers, who shall clarify them in their teacher's profile.
2. The DC provides for the enrolment as part-time student, for all the qualified students, pursuant to what is regulated in the Academic Regulations.

### **Art. 13 - Enrolment to the following years, transfer and withdrawal from the studies**

1. See the rules provided for in the Academic Regulations.

### **Art. 14 - Recognition of incoming CFU**

1. See the general regulations provided for by the University; along with the opinion of the DC if the aforementioned regulation shall require so.

### **Art. 15 - Dispositions for the students**

1. The DC shall apply the rules provided for by the University regulating the frequency to the formative activities, the number of the credits to be acquired for the enrolment to the following course year; the requirements for the implementation of outsourcing education, and all the actions aimed at an effective learning. In this regard see the Student Regulation, the website page on the LDs and the Erasmus Policy of the University.

### **Art. 16 - Assessment of the Didactic Activity**

1. The DC shall implement forms of assessment of the quality of the didactic activities provided for by the current legislation with the modalities and the deadlines provided for by the University's Quality Assurance Committee.

### **Art. 17 - Flexibility of the learning pathway**

1. The Degree Course in Civil and Environmental Engineering, with the collaboration of the online tutors (OT) proposes orientation and tutoring activities in relation to the individual study plan, of the optional formative activities and with regard to the implementation of the curricular internship, promoting a student-centred approach

to learning focused on encouraging the assumption of an active role in the definition and in the time frame of the learning pathway. The DC shall promote a collaboration with the disciplinary tutors whom, coordinating with the teachers in charge of the course, shall have the task of supporting the preparation of the didactic materials and of the partial examinations, guaranteeing the possibility to implement flexible learning pathways. Finally, the student shall have the possibility to enrol in the DC and to take advantage of the formative offer at any time of the academic year and to carry out the examinations during the seven examination sessions, provided for in the academic calendar.

### **III – FINAL AND TRANSITIONAL REGULATIONS**

#### **Art. 18 - Amendments to the Regulation**

1. Any amendment to the present Regulation shall be proposed by the Coordinator of the DC or by at least one third of the members of the Council of the DC or at least one third of the members of the Council of the DC and shall be approved by absolute majority and, successively, by the Technical Supervisory Committee.
2. In case of failure to approve the amendment, the proponent shall send a response, along with a report describing its motivations directly to the Technical Supervisory Committee.
3. The modifications to the present regulation, subject to the verification of their conformity to the Academic Regulations shall be issued by Decree of the President of the Technical Supervisory Committee.
4. Eventual legislative acts compatible with the Academic Regulation and incompatible with what is stated in the present regulation shall be applicable even in the absence of an expressed modification, but shall determine the immediate beginning of the procedure provided for in the first paragraph of the present article.
5. Eventual interpretive or applicative problems resulting from the succession of the Regulations in the course of time shall be the subject of a specific assessment on the part of the DC.

#### **Art. 19 - Transitional regulations**

1. The present regulation shall be applicable from the academic year 2018/2019.

## Attachment 1

General frame work of the formative activities

BASIC ACTIVITIES			
subject area	sector	CFU	
		Min	Max
Mathematic, IT and Statistics	ING-INF/05 Data Processing Systems	33	33
	MAT/03 Geometry		
	MAT/05 Mathematical Analysis		
	MAT/07 Mathematical Physics		
Physics and Chemistry	CHIM/07 Basics of Technological Chemistry	18	18
	FIS/01 Experimental Physics		
<b>Minimum of credits reserved by the university provided for by the D.M. 36:</b>		51	
<b>Total Basic Activities</b>		51	51
CHARACTERIZING ACTIVITIES			
Subject Area: Civil Engineering		CFU	
Total of the credits to be assigned to the subject area		30	42
Group	Sector	min	max
C11	ICAR/06 Topography and Cartography	9	15
	ICAR/17 Design		
C12	ICAR/08 Building Science	21	27
	ICAR/09 Construction Technology		
	ICAR/10 Architecture		
Subject Area: Environmental and Territory Engineering		CFU	
Total of the credits to be assigned to the subject area		27	39
Group	Sector	min	max
C21	ICAR/02 Hydraulic and Maritime Structures and Hydrology	27	39
	ICAR/07 Geotechnics		
	ICAR/09 Construction Technology		
	ICAR/20 Technology in Urban Planning		
	BIO/07 Ecology		
Subject Area: Management Engineering		CFU	
Total of the credits to be assigned to the subject area		6	6
Group	Sector	min	max
C31	ING-IND/35 Economic-Management Engineering	6	6

<b>Subject Area: Safety Engineering and civil, environmental and territory protection</b>		<b>CFU</b>	
Total of the credits to be assigned to the subject area		9	9
<b>Group</b>	<b>Sector</b>	<b>min</b>	<b>max</b>
<b>C41</b>	ING-IND/11 Technical Environmental Physics	9	9
<b>Minimum of credits reserved by the university provided for by the D.M. 45:</b>		72	
<b>Total Characterizing Activities</b>		72	96
<b>SUPPLEMENTARY ACTIVITIES</b>			
<b>Subject Area</b>	<b>Sector</b>	<b>CFU</b>	
		<b>Min</b>	<b>Max</b>
Supplementary Formative Activities	ICAR/18 History of Architecture	18	18
	ICAR/19 Restoration		
	IUS/10 Administrative Law		
	IUS/09 – Principles of Public Law		
	GEO/05 Applied Geology		
<b>Total Supplementary Activities</b>		18	18
<b>OTHER ACTIVITIES</b>			
<b>Subject Area</b>		<b>CFU min</b>	<b>CFU max</b>
Optional Teachings		12	12
For the final dissertation and a foreign language (art. 10, paragraph 5, letter c)	For the final dissertation	6	6
	For the knowledge of at least one foreign language	3	3
Minimum of credits reserved by the university reserved by the University to the Activities provided for in art. 10, paragraph 5 lett. c		9	
Further formative activities (art. 10, comma 5, lettera d)	Further linguistic knowledge	-	-
	Informatic and telematic activities	-	-
	Formative internships and orientation	6	6
	Other knowledge useful for labour market insertion	-	-
Minimum of credits reserved by the university reserved by the University to the Activities provided for in art. 10, paragraph 5 lett. d		6	
For stages and internship at companies, private/public authorities, professional associations		-	-
<b>Total Other Activities</b>		27	27
<b>TOTAL CFU</b>			
<b>Total CFU for the attainment of the title</b>		180	
<b>Total range CFU of the course</b>		168	192



## Attachment 2

### List of formative activities and teachings (study plan)

#### CIVIL AND ENVIRONMENTAL CURRICULUM

Civil and Environmental Engineering				
SSD	Type of Activity	Subject Area	Teaching	CFU
<b>1st Year Course</b>				
FIS/01	B	Physics and Chemistry	PHYSICS	9
ING-INF/05	B	Mathematics, IT, and Statistics	BASICS OF IT	6
MAT/03	B	Mathematics, IT, and Statistics	ANALYTIC GEOMETRY	6
MAT/05	B	Mathematics, IT, and Statistics	MATHEMATICAL ANALYSIS	12
MAT/07	B	Mathematics, IT, and Statistics	RATIONAL AND STATIC MECHANICS	9
ICAR/17	C	Civil Engineering - Group C11	DESIGN	6
CHIM/07	B	Physics and Chemistry	APPLIED CHEMISTRY AND TECHNOLOGY OF MATERIALS	9
L-LIN/12		Other Activities	FOREIGN LANGUAGE: ENGLISH LANGUAGE	3
<b>2nd Year Course</b>				
ICAR/08	C	Civil Engineering - Group C12	STRUCTURAL MECHANICS	9
ICAR/10	C	Civil Engineering - Group C12	CONSTRUCTION TECHNOLOGY	6
ICAR/02	C	Environmental and territory engineering - Group C21	HYDRAULICS AND HYDRAULIC CONSTRUCTION	9
ICAR/07	C	Environmental and territory engineering - Group C21	GEOTECHNICS AND FOUNDATIONS	9
ING-IND/11	C	Safety engineering and civil, environmental, and territory protection - Group C31	TECHNICAL PHYSICS AND TECHNICAL SYSTEMS	9
GEO/05	A	Supplementary Formative Activities	APPLIED GEOLOGY	9
ICAR/19	A	Supplementary Formative Activities	BASICS OF ARCHITECTURAL CONSERVATION	9
<b>3rd Year Course</b>				
ICAR/09	C	Civil Engineering – Group C12	BUILDING PLANNING	12
ICAR/09	C	Civil Engineering - Group C21	THEORY AND PLANNING OF BRIDGES	9
ING-IND/35	C	Engineering Management - Group C31	BASICS OF ECONOMIC-MANAGEMENT ENGINEERING	6
ICAR/06	C	Civil Engineering - Group C11	TOPOGRAPHY	9
		Optional teachings	OPTIONAL TEACHINGS	12
		art. 10, paragraph 5, letter d	INTERNSHIP	6
	D	art. 10, paragraph 5, letter d	FINAL DISSERTATION	6
<b>OPTIONAL TEACHINGS (third year)</b>				
ICAR/10	C	Civil Engineering – Group C12	INDUSTRIALISED BUILDING SYSTEMS	6
ICAR/19	A	Supplementary Formative Activities	RESTORATION OF BUILDINGS	6
ICAR/09	A	Civil Engineering – Group C12	EXPERIMENTATION OF BUILDINGS	6
MAT/05	B	Mathematics, IT, and Statistics	NUMERICAL ANALYSIS	6
ING-IND/15			INFOGRAPHICS AND BIM	6
ICAR/09	C	Civil Engineering – Group C12	BASICS OF SEISMIC ENGINEERING	6
ICAR/04			BASICS OF INFRASTRUCTURE ENGINEERING	6

## LANDSCAPE CURRICULUM

<b>Civil and environmental engineering - L-7 – Landscape Curriculum</b>				
SSD	Type of activity	Subject Area	Teaching	CFU
<b>1st Year Course</b>				
FIS/01	B	Physics and Chemistry	PHYSICS	9
ING-INF/05	B	Mathematics, IT, and Statistics	BASICS OF IT	6
MAT/03	B	Mathematics, IT, and Statistics	ANALYTIC GEOMETRY	6
MAT/05	B	Mathematics, IT, and Statistics	MATHEMATICAL ANALYSIS	12
MAT/07	B	Mathematics, IT, and Statistics	RATIONAL AND STATIC MECHANICS	9
ICAR/20	C	Environmental and territory engineering – Group C21	REPRESENTATION TECHNIQUES	6
CHIM/07	B	Physics and Chemistry	APPLIED CHEMISTRY AND TECHNOLOGY OF MATERIALS	9
L-LIN/12		Other Activities	FOREIGN LANGUAGE: ENGLISH LANGUAGE	3
<b>2nd Year Course</b>				
ICAR/08	C	Civil Engineering - Group C12	STRUCTURAL MECHANICS	9
ICAR/19	A	Supplementary Formative Activities	BASICS OF ARCHITECTURAL CONSERVATION	9
ICAR/02	C	Environmental and territory engineering – Group C21	HYDRAULICS AND HYDRAULIC CONSTRUCTIONS	9
ICAR/07	C	Environmental and territory engineering – Group C21	GEOTECNICA E FONDAZIONI	9
ING-IND/11	C	Safety engineering and civil, environmental, and territory protection - Group C31	TECHNICAL PHYSICS AND TECHNICAL SYSTEMS	9
GEO/05	A	Attività formative affini o integrative	APPLIED GEOLOGY	9
ICAR/20	C	Environmental and territory engineering – Group C21	CITY PLANNING	6
<b>3rd Year Course</b>				
ICAR/09	C	Civil Engineering - Group C12	BUILDING PLANNING	12
BIO/07	C	Environmental and territory engineering – Group C21	ECOLOGY	9
ING-IND/35	C	Management Engineering - Group C31	BASICS OF ECONOMIC-MANAGEMENT ENGINEERING	6
ICAR/06	C	I Civil Engineering - Group C11	GEOMATICS	9
		Optional Teachings	OPTIONAL TEACHINGS	12
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	D	art. 10, paragraph 5, letter d	FINAL DISSERTATION	6
<b>OPTIONAL TEACHINGS (third year)</b>				
BIO/07	C	Environmental and territory engineering – Group C21	CONSERVATION OF NATURE AND OF ITS RESOURCES	6
GEO/05	A	Supplementary Formative Activities	GEOTECHNICAL SURVEY	6
ING-IND/12			MEASURES AND ASSESSMENT OF BUILDING EFFICIENCY	6
ICAR/10	C	Civil Engineering - Group C12	INDUSTRIALISED BUILDING SYSTEMS	6
ICAR/19	A	Supplementary Formative Activities	RESTORATION OF BUILDINGS	6
ICAR/04			BASICS OF INFRASTRUCTURE ENGINEERING	6
ING-IND/15			INFOGRAPHICS AND BIM	6
ICAR/09	C	Civil Engineering - Group C12	BASICS OF SEISMIC ENGINEERING	6

**REGULATION ON CURRICULAR INTERNSHIP  
BACHELOR'S DEGREE COURSES AND  
MASTER'S DEGREE COURSES IN:  
CIVIL AND ENVIRONMENTAL ENGINEERING (D.M. 270/04)  
INDUSTRIAL ENGINEERING (D.M. 270/04)  
COMPUTER ENGINEERING (D.M. 270/04)**

The Study Plan of the Bachelor's Degree Courses in Civil and Environmental Engineering (L7), Industrial Engineering (L9), Informatic Engineering (L8) and of the Master's Degree Courses in Civil and Environmental Engineering (LM23), Industrial Engineering (LM33), Computer Engineering (LM32) of Telematic University eCampus shall give special priority to the curricular internship, with aiming to have the students experiment their skills in the labour market as an addition to their academic education. The curricular internship shall consist in a period of practical activity aimed exclusively at the attainment of the CFU needed for the successful completion of the formative path of the degree courses and shall not constitute a professionalizing internship for the purpose of the state examinations for the registration to the professional registers (Register of the Engineers). The internship shall be carried out at public or private structures affiliated to the University, at eCampus University, at research centres of eCampus University or at other Italian or foreign Departments and Institutes of engineering disciplines, with the supervision of a didactic tutor (a member of the Internship Committee of the Faculty of Engineering of eCampus University) and of a company tutor (or a Teacher of the University) who shall guide the students during their internship period.

**Art. 1 – PURPOSES AND ACTIVITIES OF THE INTERNSHIP**

The curricular internship, aimed at the attainment of the academic title, is intended to promote the attainment of the following formative objectives:

- a) the comprehension of the links between theory and professional practice and the integration between theoretical knowledge, acquired in the Bachelor's Degree Courses in Civil and Environmental Engineering (L7), Industrial Engineering (L9), Computer Engineering (L8) and the Master's Degree in Civil and Environmental Engineering (LM23), Industrial Engineering (LM33), Computer Engineering (LM32), and the concrete applications of professional practice;
- b) learning the procedures and the methodologies typical of the profession of engineer;
- c) the progressive acquisition, under the close supervision of the tutor, of competences related to the professional role, in relation to the different labour contexts in which the engineers operate.

The internship activity shall amount to 25 hours per formative credit, in accordance with the requirement of the didactic offer.

In particular:

- Bachelor's Degree Course in Civil and Environmental Engineering (L7): n° 6 CFU amounting to 150 hours.
- Bachelor's Degree Course in Industrial Engineering (L9): n° 9 CFU 225 ore Corso di Laurea in Ingegneria Industriale (L9): n° 9 CFU amounting to 225 hours.
- Bachelor's Degree Course in Computer Engineering (L8): n° 6 CFU amounting to 150 hours.
- Master's Degree Course in Civil and Environmental Engineering (LM23): n° 6 CFU amounting to 150 hours.
- Master's Degree Course in Industrial Engineering (LM33): n° 3 CFU amounting to 75 hours.
- Master's Degree Course in Computer Engineering (LM32): n° 3 CFU amounting to 75 hours.

In order to allow a certain variety of experiences, the interns shall carry out their practical activity:

- a) At various public or private organizations – Companies, Authorities, Associations, Institutions, Academies, Research Centres – where the following activities are performed:
  - Planning, production, implementation, design, measures and controls, diagnostics in the industrial, civil and environmental, industrial, IT fields of expertise;
  - Research activity in the industrial, civil and environmental, industrial, IT fields of expertise;
- b) Within the various Courses of Study provided by the Faculties and the Research Centres of eCampus University, or by another University. In such case, the theoretical or technical-methodological internship activities shall be mainly oriented at the involvement of the interns in study and research activities, under the direct supervision of a Teacher of the Engineering Faculty.

The internship shall be programmed and follow an individual project, planned on the basis of a “training project” between intern and tutor specifying the mutual responsibilities and the respective tasks in the implementation of the project. Said individual project shall be viewed by the Internship Committee of the Faculty of Engineering of eCampus University.

For the purpose of the report of the completed internship activity, only the hours of effective implementation of the practical and didactic exercises shall be considered, not the hours of presence within the structure (shall be excluded for example the hours of stay in the accommodations, the breaks or the hours of stay in the in the structure before and after the practical activity).

The formative internship shall not be considered as an employment relationship.

The maximum overall duration of the period of internship shall be of 6 months. In the calculation of the aforementioned limit shall not be taken into account the periods of abstention or suspension of the internship. The maximum duration shall be 6 months included any potential waivers.

## **Art. 2 – ACCESS TO THE INTERNSHIP**

In order to begin the internship the student shall:

- Make mandatory and preventive contact with the Internship Office by email to the following address: [tirocinio.lettere@uniecampus.it](mailto:tirocinio.lettere@uniecampus.it);
- Having attained at least 100 CFU out of 180, if the intern is enrolled to I level Degree Course; or having attained at least 60 CFU out of 120, if the student is enrolled to a II level Degree Course;
- If the student wishes to carry out the internship at an external authority, please note that the relationship between the University and the host structure shall be regulated by a specific agreement. In case the structure where the student wishes to carry out the internship does not have an agreement with the University, it is mandatory to stipulate it before the beginning of the internship. The students shall signal eventual structures on the basis of their formative interests, after having verified the availability; the Internship Commission reserves the right to evaluate the eventual structures proposed by the students, while it is the responsibility of the Internship Office to directly contact the host subject in order to stipulate the Agreement;
- If the students wish to carry out their internship at an eCampus research centre or at other departments and/or research centres of other Universities, in the first case they shall identify a teacher within their Degree Course and verify their willingness to follow them as a tutor; in the second case they shall identify a teacher within the Degree Course equivalent to the course attended by the student at eCampus University.

## **Art. 3 – PLACE OF INTERNSHIP**

Shall be regarded as places of internship:

- **Public and private authorities, private companies, institutions, other university departments (both Italian and foreign) who shall stipulate an agreement with eCampus University.**

For the purpose of the stipulation of an agreement with the University, said authorities shall submit to the Internship Office:

- 1) **Indications inherent to the purposes and the organizational structure of the Authority (if the Authority is private, the statute of the Authority);**
- 2) **Detailed indications on the operational activity and/or of research at the structure and specific indications on the formative activities performed by the interns;**
- 3) **CV of the tutor.**

- **eCampus University or one of its research centres.**
- **In case the internship is carried out at one of the Faculties and Research Centres of eCampus University, the student shall have the possibility to carry out the related activities in “At Home” modality. In this modality, the activities shall be carried out also outside of the actual physical structure of eCampus University (for example at home, in public libraries, etc..), nevertheless the students required to declare in the attendance register the activities and the place where they are implemented. The aforementioned register shall be countersigned by the internal tutor who shall verify, as far as possible, the veracity of what has been declared.**

#### **Art. 4 –PURPOSES AND CHARACTERISTICS OF THE TUTORS**

The tutor shall follow the student during the internship period, agreeing on the practical modalities of its implementation, making sure that the internship is carried out appropriately and participating to the evaluation of the internship.

In the public/private entities the function of tutor shall be carried out by the personnel related to the occupational activities provided for in Art. 1, with an appropriate professional experience and capable of guaranteeing a stable relationship with the structure throughout the duration of the internship.

Within the University, shall carry out the function of tutor the teachers of the Bachelor’s Degrees and the Master’s Degrees and/or of the research centres.

#### **Art. 5 – RULES OF CONDUCT FOR THE INTERN**

The intern shall comply with what was agreed in the agreement between the University and the host, shall respect the disciplinary regulations, the organizational/safety/hygiene rules. During and after the internship the intern shall maintain the strictest confidence on the information acquired during the implementation of the internship. If the host adopts a code of conduct or an internal rule, the intern shall comply with it.

#### **Art. 6 – INSURANCE POLICIES**

The RC and INAIL insurance policies, necessary for the implementation of the internship, shall be at the expense of eCampus University.

#### **Art. 7 – TRAINING PROJECT**

The Training Project shall be a an actual contract between the intern and the host. The Formative Project shall contain personal information on the intern, the time and the place of the internship, information on the insurance policy, the name of the tutor/tutors.

In the Training Project shall be indicated the purpose of the internship and the modalities necessary in order to reach the target set (namely the competences that the intern wishes to attain at the end of the internship and how to achieve them).

The duration of the internship and the modalities of access to the facilities of the company shall be described in the Training Project, duly filled in before the beginning of each internship period.

The Internship Project shall be activated **only once the Agreement has been stipulated and only once the student has communicated** all the necessary information, personal and of the authority, for the implementation of the internship.

Once the aforementioned form has been filled in, the Internship Office shall send back to the student the Training Project countersigned by the functionary of the Office, along with the documents necessary for the implementation of the internship:

- **Register of the attendances ;**
- **Report on the internship period** (which shall be carried out by the intern upon the completion of the internship activities);
- **Evaluation report** (which shall be carried out by the company/university tutor at the end of the internship).

Once the internship has ended, all the documents shall be emailed to the Internship Office. The original forms shall be delivered to the Student Secretariat, along with the graduation application form.

## Attachment 4

Syllabus of the Supplementary Formative Activities.

### OFA SYLLABUS - MATHEMATICS

#### Sets

Sets, subsets, intersection, union, number sets (natural numbers, whole numbers, rational numbers, real numbers, complex numbers), Cartesian product.

#### Logic

Propositions, quantifiers, implications, negation, statements, formal proofs.

#### Algebra

Algebraic expressions, summations, product of a sequence, equations, equivalent equations, systems of equations, equivalent systems of equations, algebraic inequalities, equations and inequalities, absolute value equations and inequalities, irrational equations, irrational inequalities.

#### Polynomials

Monomials, polynomials, sum, product, degree, division of polynomials with one variable, Polynomial remainder theorem, zeros of polynomials in one variable, Ruffini's rule, multiplicity of zeros of a polynomial in one variable, rational zeros of polynomials with whole numbers coefficient, fundamental theorems of algebra, polynomial equations with one variable.

#### Functions and equivalence classes

Functions, image, counter image, injective functions, surjective functions, bijection, composition, inverse function, equivalence relation, equivalence class.

#### Lines and planes

Points, lines, planes, mutual position of two lines in a plane, mutual position of two planes in space, mutual position of two lines in space, position of a line with respect to a plane, sheaf of lines, sheaf of planes, cartesian coordinate system, implicit formula of a line in the plane, distance between two points, area, volume, circumference, ellipsis, hyperbola, parabola.

#### Exponentials and logarithms

Exponentials, logarithms, exponential equations, exponential inequalities, logarithmic equations, logarithmic inequalities.

#### Goniometry

Goniometric functions, goniometric formulas, inverse goniometric functions, goniometric equations, goniometric inequalities.

# OFA SYLLABUS - PHYSICS

## **Introduction**

the international system of units

## **Kinematics and dynamics of a material point**

Velocity and acceleration. Linear motion. Curvilinear motion. Newton's laws of motion. Impulse and momentum. Work. Power. Kinetic energy. Conservative force. Potential energy. Conservative principles. Elastic and inelastic collisions.

## **Kinetic theory of gases and Thermodynamics**

Perfect gases. Perfect gas law. Pressure and internal energy of gases. Temperature. Heat. Change of state. Latent heat. First law of thermodynamics. Thermodynamic transformations of perfect gas. Second law of thermodynamics. Entropy.

## **Electrostatics and electric current**

Electrical charge. Coulomb's law. Electric dipoles. Electrical field. Motion of point charges. Electrical conductor. conductors in electrostatic equilibrium. Electromagnetic induction. Electrostatic potential. Potential difference. Potential energy. Capacity of a condenser. Series and parallel capacitors. Electric current and motion of a charged particle. Ohm's Law and electrical resistance. Electromotive force and sources of electromotive force. Joule effect. Series and parallel circuits.