

Approved:
EPU Rector, Prof. M.Marinov

Educational Degree

«MASTER»

Form of Training: *Full-time*

Term of Training: *1.5 Academic Years (3 Semesters)*

Professional Direction

5.7. Architecture, Civil Engineering and Surveying

A C A D E M I C C U R R I C U L U M

SPECIALITY:

2020
**EARTHQUAKE
ENGINEERING**

I. TIME SCHEDULE

Year	Auditoria Workload	Exams	Practical Training	Industrial/Field Placement	Practice	Work on Diploma Thesis	Vacations	Total (Number of Weeks)
I	30	9	-	-	-	-	18	52
II	0	0	-	-	-	15	9	24

II. CURRICULUM

<p>ECTS code: (CE/GC)TNo</p> <ul style="list-style-type: none"> • CE – „Civil Engineering“; • GC - General University discipline • T – type of degree: B - “Bachelor”, M - “Master”; • No – serial number of discipline; <p>Lectures (L), Seminar Exercises (SE), Laboratory Exercise (LE), Practical Training/Fieldwork (PT), Auditoria Workload (total) (AT), Self-Study (SS) per week ; Exam (EX), Continuous Assessment (CA); Project Work (PW), Courseworks (Cw)</p>
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I SEMESTER

№	Discipline	Weekly Workload							Assessment				Code	ECTS
		L	SE	LE	PT	AT	SS	Total	E	CA	PW	Cw		
1	Introduction to the engineering seismology and seismic zoning. Signal processing.	2	0	2	0	4	5	9	1	0	0	1	CEMS101	5
2	Geotechnical aspects of the earthquake engineering.	2	1	1	0	4	5	9	0	1	0	1	CEMS102	5
3	Dynamics of structures. Main parameters of the seismic action (loading).	3	0	2	0	5	5	10	1	0	1	0	CEMS103	6
4	Engineering analysis. Seismic codes and provisions.	2	1	1	0	4	8	12	0	1	0	1	CEMS104	7
5	Restoration, strengthening and reappearing of structures for earthquake resistance.	3	0	2	0	5	4	9	1	0	1	0	CEMS105	5
6	Elective course I	2	0	0	0	2	1	3	0	1	0	0		2
Total		14	2	8	0	24	28	52	3	3	2	3		30

II SEMESTER

№	Discipline	Weekly Workload							Assessment				Code	ECTS
		L	SE	LE	PT	AT	SS	Total	E	CA	PW	Cw		
7	Design of concrete structures. Experimental methods in testing buildings and facilities.	3	3	0	0	6	6	12	1	0	1	0	CEMS206	7
8	Design of steel structures.	3	2	0	0	4	8	12	1	0	0	1	CEMS207	7
9	Special and infrastructure aspects of earthquake engineering.	3	2	1	1	8	5	13	0	1	1	1	CEMS208	7
10	Control systems and information management. Programs to reduce seismic risk.	3	0	2	0	5	7	12	1	0	0	1	CEMS209	7
11	Elective course II High technology materials in building practice in the light of Earthquake Engineering	2	0	0	0	2	1	3	0	1	0	0	CEMS214	2
Total		14	7	3	1	25	27	52	3	2	2	3		30

III SEMESTER

№	Discipline	Weekly Workload							Assessment				Code	ECTS
		L	SE	LE	PT	AT	SS	Total	E	CA	PW	Cw		
12	Elective course I	2	0	0	0	2	1	3	0	1	0	0		2
13	Elective course II	2	0	0	0	2	1	3	0	1	0	0		2
14	Diploma thesis*	0	5	0	0	5	40	45	official thesis' defense			CEMS310	26	
Total		4	5	0	0	9	42	51	0	2	0	0		30

Note: * The diploma thesis needs to contain chapters with elements of scientific research.

COMPULSORY ELECTIVE MODULES

An elective discipline is one of the following in the corresponding modules:

Elective module 1:

Discipline	Code
Introduction to the seismology.	CEMS106
Constructions of reinforced precast concrete.	CEMS107
Preservation of cultural heritage in seismic areas. Techniques for recovery.	CEMS108
Modern computational methods in construction design. Technical passports for buildings.	CEMS109

Elective module 2:

Discipline	Code
Theory and Methodology of reconstruction of buildings.	CEMS210
Geotechnical problems of buildings and facilities reconstruction.	CEMS211
Simulation and modeling of strong ground motion.	CEMS212
Reconstruction, restoration and conservation of cultural heritage buildings.	CEMS213
High technology materials in building practice in the light of Earthquake Engineering	CEMS214

Notes:

1. The curriculum of specialty “Earthquake Engineering” for educational degree ”Master” offers knowledge, which will improve the qualification of civil engineers with bachelor or master degree in the area of renovation, reconstruction and modernization of buildings and facilities. Buildings and facilities are renovated so as to increase their exploitation robustness and longevity, as well as to improve the microclimate parameters of living spaces in order to save energy. Students have the possibility to extend their knowledge of new and effective building materials and technologies.

2. The number of credits per semester is 30. They correspond to the weekly workload, the accomplishment of course projects and courseworks, and method of assessment.

3. Elective disciplines aim at improving the general training of students, depending on their individual needs and wishes. The workload of these disciplines is 30 hours of lectures and 15 hours of self-study per semester. The control of these subjects is realized through continuous assessment.

4. Student knowledge and skills are evaluated in accordance to a six-grade rating system: 6 – excellent; 5 – very good; 4 – good; 3 – satisfactory; 2 – fail. An exam or continuous assessment is considered successfully passed if the student has achieved a minimum result of 3 (satisfactory). The correlation between the Bulgarian evaluation system and ECTS grades is as following: A (5.50-6.00), B (4.50-5.50), C (3.50 -4.50), D (3.00-3.50), E (2.50-3.00), FX (2.25-2.50), and F (2.25- 2.00).

III. BASIC PARAMETERS OF THE CURRICULUM

Semester	Weekly Workload							Semester Workload				Assessment			
	L	SE	EL	PT	AT	Ss	Total	L	SE	EL	PT	E	CA	PW	Cw
I	14	10	0	0	24	28	52	210	150	0	0	3	3	2	3
II	14	10	0	1	25	27	52	210	150	0	15	3	2	2	3
III	4	5	0	0	9	42	51	60	75	0	0	0	2	0	0
Total	28	20	0	1	49	71	120	480	375	0	15	6	7	4	6

1. Term of study	1,5 years, 3 semesters
2. Auditoria Workload	
2.1. Total	855 hours
2.2. Lectures	480 hours
2.3. Seminar Exercises	375 hours
2.4. Laboratory Exercises	0 hours
3. Total number of disciplines	13
3.1. Compulsory	9
3.2. Elective	4
4. Control	
4.1. Exams	6
4.2. Continuous Assessment	4
4.3. Project Work	4
4.4. Course works	6

Head of the Master program:

I. Paskaleva

Head of the Civil Engineering program:

Prof. PhD Eng. I. Paskaleva

Acad. Eng. Yacho Ivanov, DSc

Annex I.

Assignment date:.....	ENDOSED BY:
Give in date of the thesis:.....	Head of the Program:.....
	<i>(Acad. Eng. Y. Ivanov, DsC, MBAS)</i>

Educational Dedree: **Master**
Speciality: **Earthquake Engineering**

**ASSIGMENT
FOR DIPLOMA THESIS**

First name, Surname:.....ID

Topic:

1. Hypothetical modeling of the seismic early warning system for Greece
2. Regional characterization of the site's ground conditions in Greece

1. Initial Information

1.1. Location GREECE

2. Information resources

2.1.

Primary bibliography

Internet sites

3. Content of the diploma thesis

3.1. Explanatory notes (text part)

3.2. Drawings

Diploma work Supervisor:

Student:

Head of the Department:

(Acad. Eng. Y. Ivanov, DsC, MBAS)

Notes:

According to the rules (N23) the student should do:

- ✓ **draft presentation 45 days before the official defending;**

- ✓ short written report 4-5 pages with main results from the diploma work 7 days before the official defending;
- ✓ the hard copy from the diploma work is presented 14 days before the day of defending meeting.

According to the rules (N23) EPU should do:

- ✓ the list with possible reviewers should be presented 14 days before the final day for presenting diploma work;
- ✓ the review is presented (hard copy) 1 month after the final day for presenting diploma work;
- ✓ pay the advisor as a minimum 4 hours (per week) consulting