

# ROMANIA

**MINISTRY OF EDUCATION, RESEARCH AND YOUTH**

**UNIVERSITY OF ORADEA**

**FACULTY OF ARCHITECTURE AND CONSTRUCTIONS**

## SYLLABUS

**Valid from the academic year 2009 – 2010**

**Field: SURVEY ENGINEERING**

**Major: TERRESTRIAL SURVEY AND CADASTRE**

*Duration of studies: 4 years – traditional learning*

**Diploma awarded: ENGINEER**

**RECTOR**

**PhD.Prof.Eng Cornel Antal**

**DEAN**

**PhD.Prof.Eng. Aurora Mancia**

**SYLLABUS**  
**1ST YEAR**

Code	Disciplines	Type	Semester I				Total no. of hrs.	Type of evaluation	Conditions	Credits	
			C	S	L	P					
<b>COMPULSORY SUBJECTS</b>											
UO-A.C.CD.01.01	Mathematical analysis	DF	2	2	-	-	56	Ex.	-	5	
UO-A.C.CD.01.02	Linear algebra	DF	2	2	-	-	56	Ex.	-	5	
UO-A.C.CD.01.03	Topography I	DS	4	-	4	-	112	Ex.	-	11	
UO-A.C.CD.01.04	Topographic drawing and maps editing I	DF	-	-	2	-	28	Cv.	-	2	
UO-A.C.CD.01.05	Geomorphology	DF	2	-	1	-	42	Cv.	-	2	
UO-A.C.CD.01.06	Optical instruments physics	DF	2	-	1	-	42	Cv.	-	3	
UO-A.C.CD.01.07	English language I	DC	-	2	-	-	28	Cv.	-	1	
UO-A.C.CD.01.08	Physical education and sports I	DC	-	-	1	-	14	Cv.	-	1	
	<b>TOTAL</b>		<b>14</b>	<b>5</b>	<b>9</b>	<b>-</b>	<b>378</b>		<b>-</b>	<b>30</b>	
	<b>TOTAL GENERAL</b>		<b>26</b>								

Code	Disciplines	Type	Semester II				Total no. of hrs.	Type of evaluation	Conditions	Credits	
			C	S	L	P					
<b>COMPULSORY SUBJECTS</b>											
UO-A.C.CD.02.01	Topography II	DS	4	-	2	2	112	Ex.+ Np	UO-A.C.CD.01.03	10	
UO-A.C.CD.02.02	Geometrical representations of topographic surfaces	DF	2	-	2	-	56	Ex.	-	4	
UO-A.C.CD.02.03	Topographic drawing and maps editing II	DF	-	-	2	-	28	Cv.	UO-A.C.CD.01.04	2	
UO-A.C.CD.02.04	Introductory course in computer use	DF	-	-	2	-	28	Cv.	-	2	
UO-A.C.CD.02.05	Analytical and differential geometry	DF	2	2	-	-	56	Ex.	-	3	
UO-A.C.CD.02.06	Drawing and infographics	DF	-	-	2	-	56	Cv.	-	2	
UO-A.C.CD.02.07	Soil protection	DF	2	-	-	-	28	Cv.	-	1	
UO-A.C.CD.02.08	Physical education and sports II	DC	-	-	1	-	14	Ex.	-	1	
UO-A.C.CD.02.09	English language II	DC	-	2	-	-	28	Cv.	-	1	
UO-A.C.CD.02.10	Topographic practice I	DS	-	-	-	-	80	Cv.	-	4	
	<b>TOTAL</b>		<b>10</b>	<b>4</b>	<b>11</b>	<b>2</b>	<b>486</b>		<b>-</b>	<b>30</b>	
	<b>TOTAL GENERAL</b>		<b>27</b>								

**Legend:** DF– fundamental discipline, DS – speciality discipline, DC– complementary discipline

**RECTOR,**  
**Phd.Prof.Eng. Cornel Antal**

**DEAN,**  
**Phd.Prof.Eng Aurora Mancia**

Field: **SURVEY ENGINEERING**  
 Major: **TERRESTRIAL SURVEY AND CADASTER**  
 Type of education: **TRADITIONAL LEARNING**  
 Duration: **4years**

Starting with the 1<sup>st</sup> year  
**It is approved**

**SYLLABUS**  
**2ND YEAR**

Code	Disciplines	Type	Semester III				Total no. of hrs.	Type of evaluation	Conditions	Credits	
			C	S	L	P					
<b>COMPULSORY SUBJECTS</b>											
UO-A.C.CD.03.01	General land cadastre I	DS	2	-	2	-	56	Ex.	-	5	
UO-A.C.CD.03.02	Works automation in cadastre	DS	2	-	2	-	56	Cv.	UO-A.C.CD.02.01	5	
UO-A.C.CD.03.04	Ellipsoidal geodesy	DS	2	-	1	-	42	Ex.	-	3	
UO-A.C.CD.03.05	Theory of geodesic surveys processing I	DD	2	-	1	-	42	Ex.	-	6	
UO-A.C.CD.03.06	Data base	DF	2	-	2	-	56	Cv	-	3	
UO-A.C.CD.03.07	Drawing and infographics	DF	-	-	2	-	28	Cv.	UO-A.C.CD.02.06	2	
UO-A.C.CD.03.08	Physical education and sports III	DC	-	-	1	-	14	Cv.	-	1	
UO-A.C.CD.03.09	English language III	DC	-	2	-	-	28	Cv.	-	1	
<b>OPTIONAL SUBJECTS</b>											
UO-A.C.CD.03.11	The technology of terrestrial information drawing/ Computer programming	DF	-	-	1	-	28	Cv.	-	2	
UO-A.C.CD.03.12	Discourse technique/ Elements of underground topography	DD	1	-	2	-	42	Cv.	-	2	
	<b>TOTAL</b>		<b>11</b>	<b>2</b>	<b>14</b>		<b>392</b>		<b>-</b>	<b>30</b>	
	<b>TOTAL GENERAL</b>		<b>27</b>								

Code	Disciplines	Type	Semester IV				Total no. of hrs.	Type of evaluation	Conditions	Credits	
			C	S	L	P					
<b>COMPULSORY SUBJECTS</b>											
UO-A.C.CD.04.01	General land cadastre II	DS	2	-	2	-	56	Ex.	UO-A.C.CD.03.01	5	
UO-A.C.CD.04.02	Cartographic projections	DS	2	-	1	-	42	Ex.	-	4	
UO-A.C.CD.04.03	Theory of geodesic surveys processing II	DD	2	-	2	-	56	Ex.	UO-A.C.CD.03.05	5	
UO-A.C.CD.04.04	General land legislation	DD	2	2	-	-	56	Cv.	-	3	
UO-A.C.CD.04.05	Hydro technical constructions and land improvement	DD	2	-	1	-	42	Cv.	-	2	
UO-A.C.CD.04.06	Physical education and sports IV	DC	-	-	1	-	14	Ex.	-	1	
UO-A.C.CD.04.07	English IV	DC	-	2	-	-	28	Cv.	-	1	
UO-A.C.CD.04.08	Topographic practice II	DS	-	-	-	-	80	Cv.	-	4	
<b>OPTIONAL SUBJECTS</b>											
UO-A.C.CD.04.09	Engineering graphics / Waves measurements physics	DF	2	-	2	-	56	Cv.	-	2	
UO-A.C.CD.04.13	Software applications for topography and cadastre/ Environment protection	DD	-	-	2	-	28	Cv.	-	3	
	<b>TOTAL</b>		<b>12</b>	<b>4</b>	<b>11</b>	<b>-</b>	<b>458</b>		<b>-</b>	<b>30</b>	
	<b>TOTAL GENERAL</b>		<b>27</b>								

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Starting with the 1<sup>st</sup> year  
**It is approved**

**SYLLABUS  
3RD YEAR**

Code	Disciplines	Type	Semester V				Total no. of hrs.	Type of evaluation	Conditions	Credits	
			C	S	L	P					
<b>COMPULSORY SUBJECTS</b>											
UO-A.C.CD.05.01	Mathematical geodesy	DD	2	-	-	2	56	Ex.+ Np.	-	3+ 2	
UO-A.C.CD.05.02	Topographic tools and instruments I	DD	2	-	2	-	56	Ex.	-	5	
UO-A.C.CD.05.03	Means of communication	DD	2	-	1	-	42	Ex.		3	
UO-A.C.CD.05.04	Geometrical basis of photogrammetry	DD	2	-	1	-	42	Ex.		2	
UO-A.C.CD.05.05	Specialized cadastral survey I	DS	2	-	2	-	56	Ex.	-	5	
UO-A.C.CD.05.06	Engineering and topographic surveys technique I	DD	2	-	2	-	56	Ex.	-	5	
<b>OPTIONAL SUBJECTS</b>											
UO-A.C.CD.05.07	Numerical methods in cadastre / Marketing	DD	1	1	-	-	28	Cv.	-	2	
UO-A.C.CD.05.08	Territory systematization / Accounting	DD	2	-	2	-	56	Ex.	-	3	
	<b>TOTAL</b>		<b>15</b>	<b>1</b>	<b>9</b>	<b>2</b>	<b>392</b>		<b>-</b>	<b>30</b>	
	<b>GENERAL TOTAL</b>		<b>27</b>								

Code	Disciplines	Type	Semester VI				Total no. of hrs.	Type of evaluation	Conditions	Credits	
			C	S	L	P					
<b>COMPULSORY SUBJECTS</b>											
UO-A.C.CD.06.02	Topographic tools and instruments II	DD	2	-	2	-	56	Ex.	-	4	
UO-A.C.CD.06.03	Engineering and topographic surveys technique II	DD	2	-	2	-	56	Ex.	UO-A.C.CD.05.06	4	
UO-A.C.CD.06.04	Specialized cadastral survey II	DS	2	-	-	2	56	Ex.+ Np.	UO-A.C.CD.05.05	3+ 2	
UO-A.C.CD.06.05	Photogrammetry and photo interpretation	DD	2	-	2	-	56	Ex.	UO-A.C.CD.02.04	4	
UO-A.C.CD.06.06	Spatial geodesic technologies I	DS	2	-	-	2	56	Ex.+ Np.	-	3+ 2	
UO-A.C.CD.06.07	Means of communication	DD	2	-	1	-	28	Ex		2	
UO-A.C.CD.06.08	Geodesic practice	DS	-	-	-	-	80	Cv.		4	
<b>OPTIONAL SUBJECTS</b>											
UO-A.C.CD.06.09	Urbanism / Buildings evaluation	DD	1	1	-	-	28	Cv.	-	2	
UO-A.C.CD.06.10	Technical expertise drawing up/ Professional ethics	DD	-	-	2	-	28	Cv.	-	2	
	<b>TOTAL</b>		<b>13</b>	<b>1</b>	<b>9</b>	<b>4</b>	<b>444</b>		<b>-</b>	<b>30</b>	
	<b>TOTAL GENERAL</b>		<b>27</b>								

**Legend:** DF– fundamental discipline, DS – speciality discipline, DC– complementary discipline

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Field: **SURVEY ENGINEERING**  
 Major: **TERRESTRIAL SURVEY AND CADASTRE**  
 Type of education: **TRADITIONAL LEARNING**  
 Duration: **4years**

Starting with the 1<sup>st</sup> year  
**It is approved**

**SYLLABUS  
4TH YEAR**

Code	Disciplines	Type	Semester VII				Total no. of hrs.	Type of evaluation	Conditions	Credits	
			C	S	L	P					
<b>COMPULSORY SUBJECTS</b>											
UO-A.C.CD.07.01	Analytical photogrammetry	DD	2	-	-	2	56	Ex.+ Np.	UO-A.C.CD.06.05	3+2	
UO-A.C.CD.07.02	Geographical informatics systems	DD	2	-	1	-	42	Cv.	-	3	
UO-A.C.CD.07.03	Special topographic surveys I	DD	2	-	1	-	42	Ex.	-	4	
UO-A.C.CD.07.04	Work automatization in cadastre	DS	2	-	3	-	70	Cv.	-	4	
UO-A.C.CD.07.05	Tracking lands and installations behaviour	DD	2	-	2	-	56	Ex.	-	4	
UO-A.C.CD.07.07	Spatial survey technologies II	DD	2	-	2	-	56	Cv.	UO-A.C.CD.06.06	5	
<b>OPTIONAL SUBJECTS</b>											
UO-A.C.CD.07.08	Urban hydraulics/ Elements of architecture	DD	1	-	1	-	28	Cv.	-	2	
UO-A.C.CD.07.06	Cadastral organization and evaluation / Economic statistics	DD	2	1	-	-	42	Ex.	-	3	
	<b>TOTAL</b>		<b>15</b>	<b>1</b>	<b>11</b>	<b>-</b>	<b>378</b>		<b>-</b>	<b>30</b>	
	<b>TOTAL GENERAL</b>		<b>27</b>								

Code	Disciplines	Type	Semester VIII				Total no. of hrs.	Type of evaluation	Conditions	Credits	
			C	S	L	P					
<b>COMPULSORY SUBJECTS</b>											
UO-A.C.CD.08.01	Land informational systems	DD	2	-	2	-	48	Ex.	UO-A.C.CD.06.02	3	
UO-A.C.CD.08.02	Special topographic elevations II	DD	2	-	1	-	36	Ex.	UO-A.C.CD.07.03	3	
UO-A.C.CD.08.03	Land assessment	DD	2	1	-	-	48	Cv.	-	3	
UO-A.C.CD.08.04	Digital photogrammetry and tele-detecting	DD	2	-	2	-	48	Ex.	UO-A.C.CD.07.01	5	
UO-A.C.CD.08.05	General course in constructions	DD	2	-	-	-	24	Ex.	-	2	
UO-A.C.CD.08.06	Topographic works management	DF	2	-	-	-	24	Cv.	-	3	
UO-A.C.CD.08.07	Cartographic modelling	DD	2	-	2	-	48	Ex.	-	3	
<b>OPTIONAL SUBJECTS</b>											
UO-A.C.CD.08.08	Soil protection/ Methods and techniques for presenting the projects	DD	2	-	1	-	48	Cv.	-	3	
UO-A.C.CD.08.09	Integration and international relations/Professional counselling in the carrier	DC	-	2	-	-	24	Cv.	-	1	
	<b>TOTAL</b>		<b>16</b>	<b>3</b>	<b>8</b>	<b>-</b>	<b>404</b>		<b>-</b>	<b>30</b>	
	<b>GENERAL TOTAL</b>		<b>27</b>								
UO-A.C.CD.08.07	Graduation paper elaboration	DS	-	-	24	-	96	-	-	4	

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**Phd.Prof.Eng Aurora Mancia**

Major: **TERRESTRIAL SURVEY AND CADASTRE**

Diploma awarded: **ENGINEER**

Duration of studies: **8 semesters**

Type of education: **traditional learning**

1. REQUIREMENTS FOR THE ENGINEER BACHELOR DEGREE

- 229 credits for the compulsory disciplines
- 11 credits for the optional disciplines
- 30 credits at the licentiate's degree exam (15 credits for the test evaluating the theoretical knowledge at the fundamental and specialty disciplines disciplinele fundamentale și de specialitate, 15 credits for the graduation paper presentation)
- Certificate of linguistic proficiency

In order to occupy a didactic position (gymnasium, highschool or higher education) the graduate has to possess a *Graduation certificate* issued by the Department for training and improvement of the didactic staff. In order to obtain this certificate, the graduate has to obtain the credits corresponding to the disciplines from the Pedagogic Seminar.

2. STUDY DISPLAY (in number of weeks)

Year of study	Didactic activities		Sessions of exams			Holiday		
	Semester I	Semester II	I	II	III	Winter	Spring****	Summer
Year I	14	14	4	4	2**	2	1	10
Year II	14	14	4	4	2**	2	1	10
Year III	14	14	4	4	2**	2	1	10
Year IV	14	12	4	2*	1***	2	1	10

\* - during the drawing up of the graduation paper

\*\* - fall, before the next academic year

\*\*\* - during the ending up of the graduation paper

3. NUMBER OF HOURS PER WEEK AT THE COMPULSORY AND OPTIONAL SUBJECTS

Year of study	Semester I	Semester II
Year I	27	27
Year II	27	27
Year III	27	27
Year IV	27	24*

\* Semester VIII consists of 8 weeks of didactic activity with 24 hours/weeks and 4 weeks assigned to writing the graduation paper with 24 hours/week

4. HOW TO CHOOSE THE OPTIONAL SUBJECTS

From each set of optional subjects, the student will choose one which becomes compulsory.

**Caption:**

DF – fundamental subjects	20%	DOb – compulsory subjects	78%
DS – specialty subjects	29%	DOp – optional subjects	12%
DD – subjects in the field	46%	DFa – facultative subjects	10%
DC – complementary subjects	5%		

5. GRADUATION EXAM

1. Establish the subject of the graduation project: semester 6
2. Drawing up the graduation project: semester 8
3. Graduation paper presentation: July – February
4. The structure of the graduation paper exam, with the following grading components:
  - a) Evaluation of the theoretical knowledge at the fundamental and optional subjects;
  - b) Graduation paper presentation.

*Legend:*

C – courses	S – seminars	Ex – exam	Cv – colloquium
L – practical works or/and laboratory	P – project	Pr – practice	Np – grade for project

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