



**THE UNIVERSITY OF CRAIOVA  
THE FACULTY OF HORTICULTURE  
THE DEPARTMENT OF HORTICULTURE AND FOOD SCIENCE**

**University of Craiova–Faculty of Horticulture**

**PACKAGE OF COURSES**

**HORTICULTURE  
SPECIALITY**

This package of courses for the Horticulture speciality from the University of Craiova/ The Faculty of Horticulture/ The Horticulture Department – Food Science, available for the academic year 2016-2017.

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## CURRICULUM

**THE UNIVERSITY OF CRAIOVA  
THE FACULTY OF HORTICULTURE**

Field of study: **Horticulture**  
Speciality: **Horticulture**  
Awarded diploma: **Bachelor's diploma**  
Programme type: **day**  
Duration of studies: **4 years**

## CURRICULUM

Academic year **2016 - 2017**

2017

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UNIVERSITY OF CRAIOVA  
 Faculty of Horticulture  
 Department: Horticulture and Food Science (D29)  
 Domain: Horticulture  
 Programme: Horticulture (HC)

Sem. I	Sem. II
Nr. weeks/sem.if = 14	

CURRICULUM – First year

Disciplina	Cod	FD D S C	OB OP F	Opt. 0/≥1	C1	S1	L1	P1	CT1	FV1	C2	S2	L2	P2	CT2	FV2
<b>DISCIPLINE OBLIGATORII SI OPTIONALE</b>																
Mathematics	D29HCL101	FD	OB	1	1	2			4	V						
Botany I	D29HCL102	FD	OB	1	2		2		6	E						
Soil Science (Pedology)	D29HCL103	FD	OB	1	2		2		6	E						
Energetic Base and Horticultural Mach	D29HCL104	D	OB	1	1		1		4	E						
Informatics	D29HCL105	FD	OB	1	1		2		3	V						
Agrochemistry	D29HCL106	D	OB	1	2		2		5	E						
Botany II	D29HCL207	FD	OB	1							2		2		4	E
Energetic Base and Horticultural Mach	D29HCL208	D	OB	1							2		2		4	E
Topography	D29HCL209	FD	OB	1							2		1	1	4	E/P
Chemistry	D29HCL210	FD	OB	1							2		2		4	E
Biophysics and Agrometeorology	D29HCL211	C	OB	1							2		1		4	E
Introduction In Horticulture	D29HCL212	S	OB	1							2		1		4	E
Practice	D29HCL213	S	OB	2										6.4	4	V
Foreign Language I	D29HCL214	C	OP	1		2			2	V		2			2	V
Foreign Language II	D29HCL215	C	OP	0		2			2	V		2			2	V
Physical Education	D29HCL216	C	OB	1		1			1*	A/R		1			1*	A/R
<b>TOTAL</b>					9	4	9	0	30		12	2	9	1	30	
<b>FACULTATIVE DISCIPLINES</b>																
<b>TOTAL</b>					0	0	0	0	0		0	0	0	0	0	
					22					24						

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Sem. I	Sem. II
Nr. weeks/sem. if ≠ 14	

CURRICULUM – Second year

Disciplina	Cod	FD D S C	OB OP F	Opt. 0/≥1	C1	S1	L1	P1	CT1	FV1	C2	S2	L2	P2	CT2	FV2
<b>DISCIPLINE OBLIGATORII SI OPTIONALE</b>																
Ecology and Environmental Protection	D29HCL317	FD	OB	1	2		2		4	E						
Microbiology	D29HCL318	FD	OB	1	2		2		5	E						
Plant Physiology	D29HCL319	FD	OB	1	2		2		5	E						
Community Agrarian Politics	D29HCL320	C	OB	1	1	1			4	V						
General Floriculture	D29HCL321	D	OB	1	2		2		5	E						
Experimental Design	D29HCL322	D	OB	1	1		2		4	V						
Agrophytotechny	D29HCL425	D	OB	1							2		2		4	E
General Entomology	D29HCL426	D	OB	1							2		2		4	E
General Phytopatology	D29HCL427	D	OB	1							2		2		5	E
Special Floriculture	D29HCL428	S	OB	1							2		2		5	E
Genetics	D29HCL429	F	OB	1							2		2		4	E
Micropropagation	D29HCL430	S	OB	1							2		2		4	V
Practice	D29HCL431	S	OB	2										6.4	4	V
Physical Education	D29HCL323	C	OP	0	1		1		3	V						
Accounting	D29HCL324	D	OP	1	1		2		3	V						
Tropical Horticulture	D29HCL432	C	OB	1		1			1*	A/R		1			1*	A/R
<b>TOTAL</b>					11	1	12	0	30		12	0	12	0	30	
<b>FACULTATIVE DISCIPLINES</b>																
<b>TOTAL</b>					0	0	0	0	0		0	0	0	0	0	
					24						24					

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Sem. I		Sem. II
Nr. weeks/sem. if ≠ 14		

**CURRICULUM –Third year**

Disciplina	Cod	FD D S C	OB OP F	Opt. 0/≥ 1	C1	S1	L1	P1	CT1	FV1	C2	S2	L2	P2	CT2	FV2	
<b>DISCIPLINE OBLIGATORII SI OPTIONALE</b>																	
General Vegetable Growing I	D29HCL533	D	OB	1	2		2		5	E							
General Fruit Tree Growing I	D29HCL534	D	OB	1	2		2		5	E							
General Viticulture I	D29HCL535	D	OB	1	2		2		4	E							
Ornamental Arboriculture and Landscape Architecture I	D29HCL536	D	OB	1	2		2		4	E							
Special Entomology	D29HCL537	S	OB	1	2		2		4	E							
Special Phytopathology	D29HCL538	S	OB	1	2		2		4	E							
General Vegetable Growing II	D29HCL641	D	OB	1							2		2		4	E	
General Fruit Tree Growing II	D29HCL642	D	OB	1							2		2		4	E	
General Viticulture II	D29HCL643	D	OB	1							2		2		4	E	
Ornamental Arboriculture and Landscape Architecture II	D29HCL644	D	OB	1							2		1	1	5	E	
Land Improvement	D29HCL645	S	OB	1							2		1	1	5	E	
Plant Breeding In Horticulture I	D29HCL646	D	OB	1							2		2		4	E	
Practice	D29HCL647	S	OB	2										6.4	4	V	
Flower Arrangement	D29HCL539	S	OP	1	1		1		4	V							
Communication Skills	D29HCL540	C	OP	0	1		1		4	V							
<b>TOTAL</b>					<b>13</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>30</b>		<b>12</b>	<b>0</b>	<b>10</b>	<b>2</b>	<b>30</b>		
<b>FACULTATIVE DISCIPLINES</b>																	
<b>TOTAL</b>					<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
					26												
												24					

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Sem. I	Sem. II
Nr. weeks/sem. if ≠ 14	10

CURRICULUM –Fourth year

Disciplina	Cod	FD D S C	OB OP F	Opt. 0/≥1	C1	S1	L1	P1	CT1	FV1	C2	S2	L2	P2	CT2	FV2
<b>DISCIPLINE OBLIGATORII SI</b>																
<b>OPTIONALE</b>																
Special Vegetable Growing I	D29HCL748	S	OB	1	2		2		5	E						
Pomology I	D29HCL749	S	OB	1	2		2		5	E						
Ampelography I	D29HCL750	S	OB	1	2		2		5	E						
Plant Breeding in Horticulture II	D29HCL751	D	OB	1	2		2		4	E						
Management	D29HCL752	D	OB	1	1	1			3	V						
Oenology I	D29HCL753	S	OB	1	2		2		4	E						
Technology of Horticultural Products	D29HCL754	S	OB	1	2		2		4	E						
Special Vegetable Growing II	D29HCL855	S	OB	1							2		2		4	E
Pomology II	D29HCL856	S	OB	1							2		2		4	E
Ampelography II	D29HCL857	S	OB	1							2		2		4	E
Oenology II	D29HCL858	S	OB	1							2		2		3	E
Technology of Horticultural Products	D29HCL859	S	OB	1							2		2		3	E
Marketing	D29HCL860	D	OB	1							1	1			2	V
Practice	D29HCL861	S	OB	2										8.57	10	V
<b>TOTAL</b>					<b>13</b>	<b>1</b>	<b>12</b>	<b>0</b>	<b>30</b>		<b>11</b>	<b>1</b>	<b>10</b>	<b>0</b>	<b>30</b>	
<b>FACULTATIVE DISCIPLINES</b>																
<b>TOTAL</b>					<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
					26					22						

**I<sup>st</sup> YEAR OF STUDY**  
**I<sup>st</sup> SEMESTER**

**MATHEMATICS**

**CODE:**D29HCL101

**CREDITS:** 4

**COURSE COORDINATOR:** PhD.Senior Lecturer Cătălin ȘTERBETI

**YEAR / SEMESTER:** I<sup>st</sup> Year / I<sup>st</sup> Semester

**HOURS PER WEEK:** 1 hour of course, 2 hours of practical works

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** fundamental

**COURSE OBJECTIVES:** Determination of lengths, areas and volumes of geometric objects. Solving specific problems of linear programming, such as crop distribution, setting feed ration for animal feed and working technology, based on matrix computing techniques. Knowledge of the fundamental concepts of probability theory, probabilistic computation rules, the main probability schemes, the notion of random variable. Knowledge of the main classical distribution laws. Statistical analysis of the phenomenon. Graphical representation of a statistical series. The distribution of statistical data and graphical representation, the synthesis of data with an indicator representing them, the determination of statistical indicators of populations and samples (for example, indicators of the variations and moments).

**TOPICS:** Measurement of lengths, areas and volumes. Linear programming. The calculus of probabilities. Elements of mathematical statistics

**TEACHING LANGUAGE :** Romanian

**KNOWLEDGE ASSESSMENT:** answers to exam 70%, final answers to works and homework 30%

**ASSESSMENT FORM:** verification

**REFERENCES.**

1. Balan V., Sterbeti C., Capitle de matematici aplicate. Programare liniara. Teoria probabilitatilor. Statistica matematica, Editura Reprograph, Craiova, 2005
2. Ceapoiu N.- Metode statistice aplicate in experimente agricole si biologice, Editura Agro-Silvica, Bucuresti, 1968
3. Hartia S., Programarea liniara in conducerea fermei agricole, Editura CERES, Bucuresti 1975
4. Holme A., Geometry. Our Cultural Heritage, Editura Springer, 2010
5. Lupescu T., Rosu A., Cerchez M., Programarea Matematica, Editura Militara, 1965
6. Ostermann A., Wanner G., Geometry by Its History, Editura Springer, 2012
7. Rumsinski L.Z.- Prelucrarea matematica a datelor experimentale, Editura Tehnica, Bucuresti, 1974
8. Stillwell J., Mathematics and Its History, Editura Springer, 2010

**BOTANY**

**CODE:** D29HCL102

**CREDITS:** 6

**COURSE HOLDER:** Lecturer, PhD, Daniel RĂDUȚOIU

**YEAR/SEMESTER:** I<sup>st</sup> year/ I<sup>st</sup> semester

**NUMBER OF HOURS PER WEEK:** 2 hours course, 2 hour practical course

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** main subject

**COURSE OBJECTIVES:** Ability to understand the morphological and structural characteristics of vascular plants, knowledge that will underpin the study of horticultural plants studied at the specializations of the following years of study. The ability to correlate the morphological and structural notions of horticultural plants in the technological process, in order to achieve productive performance results.

**THEMES:** Objective and methods of investigation. Botanical subdivisions. Development of botany in the world and in Romania. Plant cytology. Plant histology. Organography. The plant organs. Vegetative and reproductive organs.

**LANGUAGE OF INSTRUCTION:** Romanian

**KNOWLEDGE ASSESSMENT:** Final theoretical exam 70%, final practical exam 30%.

**ASSESSMENT TYPE:** exam

**BIBLIOGRAPHY:**

- 1.ANDREI M., 1978. Anatomia plantelor. Edit. Did. și Ped. București.
- 2.ANDREI M., 1997. Morfologia generală a plantelor. Edit. Enciclopedică București.
- 3.ANDREI M. și colab., 2003. Practicum de Morfologia și anatomia plantelor. Edit. St. Agricole București.
- 4.BAVARU A., BERCU R., 2002. Morfologia și anatomia plantelor. Edit. Expono Constanța.
- 5.BURĂSCU P., 2002. Botanică, vol. I Morfologia plantelor. Edit. Univ. din Oradea.
- 6.COSTACHE I., 2009. Botanica I. Vol. 1. Morfologia și Anatomia plantelor. Fundația-Editura „Scrisul Românesc”. Craiova.
- 7.DELIU C., 1992. Morfologia și anatomia plantelor, vol. I. Edit. Univ. Babeș – Bolyai, Cluj Napoca.
- 8.SIMEANU V., POPESCU GH.,1980. Morfologia și anatomia plantelor. Reprografia Univ. din Craiova.

**PEDOLOGY**

**CODE:** D29HCL103

**CREDITS:** 6

**COURSE HOLDER:** Senior Lecturer, PhD, GRECU FLORINA

**YEAR/SEMESTER:** 1st year/ 1st semester

**NUMBER OF HOURS PER WEEK:** 2 hours course, 2 hours practical course

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** main subject

**COURSE OBJECTIVES:** The knowing of natural factors of soil genesis, the way of evolution and the main features of soil;The characterization of soil types in Romania and the establishing of suitability for several crops and ways of cropping; Laboratory determinations of main features of soils.

**THEMES:** The object and the role of Pedology, its importance for agricultural production development. Pedogenesis factors and their role in soil genesis. The genesis and composition of mineral part of the soil. The genesis and composition organic part of the soil. The genesis and composition of soil profile. The physical and physical – size features of soil. The hydric – physical, air and thermic features of soil. The chemical features of soil. The classification and description of soils from Romania. The mapping and quality evaluation of agricultural lands.

**LANGUAGE OF INSTRUCTION:** Romanian

**KNOWLEDGE ASSESSMENT:** exam answers 70%, answers at practical course during semester 30 %.

**ASSESSMENT TYPE:** exam

**BIBLIOGRAPHY:**

- 1.FLOREA N., MUNTEANU I. 2003. Sistemul Român de taxonomie a solurilor. Editura Estfalia București;
- 2.MIHALACHE M., ILIE L. 2008. Pedologie - Solurile României, Editura Do-Minor București.
3. PAULETTE LAURA, 2008.Pedologie, Editura Todesco, Cluj-Napoca.
- 4.POPESCU, C., VASILE D., GRECU FLORINA, 2008. Pedologie – Bonitare funciară, Aplicații Practice, Editura Universitaria, Craiova.
- 5.POPESCU, C., GRECU FLORINA,2013. Pedologie – Geneza, alcătuirea și proprietățile solurilor, Editura Sitech Craiova.
- 6.POPESCU, C., GRECU FLORINA, 2014. Pedologie – Clasificarea și caracterizarea solurilor României, Editura Sitech Craiova.

**THE ENERGY BASE AND HORTICULTURAL MACHINES II**

**CODE:** D29HCL104

**CREDITS:** 4

**COURSE HOLDER:** PhD Assoc. Professor Mihnea GLODEANU

**YEAR/SEMESTER:** I<sup>st</sup> year/ I<sup>st</sup> semester

**NUMBER OF HOURS PER WEEK:** 1 hours course, 1 hours practical course

**NUMBER OF WEEKS:** 14



**COURSE TYPE:** domain

**COURSE OBJECTIVES:** knowledge of the construction and operation of horticultural machinery and equipment and also the complex influences that are established between their working organs, with soil and plants; knowledge the optimization of the working parameters of the formed aggregates and their role in establishing differentiated technologies; establishing the machine system according to the biological features of the cultivated plants, the values of the ecological factors and the environment protection.

**THEMES:** Presenting some notions regarding: mechanization technologies; soil working machines; machines for preparing the germinating bed; sowing machines; planting machines; machinery and equipment for the application of fertilizers and amendments; plant protection machinery; horticultural crop maintenance machines; horticultural crops harvesting machines; vegetable harvesting machines; fruit and grape harvesting machines; machinery for conditioning and preserving horticultural products; operation of horticultural machines.

**LANGUAGE OF INSTRUCTION:** Romanian

**KNOWLEDGE ASSESSMENT:** answers to exam 60%, final answers to Laboratory works 40%

**ASSESSMENT TYPE:** exam

**BIBLIOGRAPHY:**

1. Alexandru T, M.Glodeanu, 2009, Exploatarea mașinilor agricole. Editura Sitech, Craiova.
2. Alexandru T., 2005, Mașini horticole, Editura Sitech, Craiova.
3. Alexandru T., 2001, Calculul și construcția mașinilor de recoltat I, Reprografia Universității din Craiova. 2
4. Glodeanu M, Alexandru T, Bădescu M, Sărăcin I., 2002, Mașini și echipamente agricole. Editura Aius, Craiova.
5. Glodeanu M, Alexandru T, Boruz S., Sărăcin I, 2015, Mașini agricole și horticole I – tipuri reprezentative, reglaje, Editura Sitech, Craiova.

## INFORMATIC

**CODE:** D29HCL105

**CREDITS:** 3

**COURSE COORDINATOR:** PhD. Associate Professor ROȘCA DOINA

**YEAR/SEMESTER:** I<sup>st</sup> Year / I<sup>st</sup> Semester

**HOURS PER WEEK:** 1 hour of course, 2 hours of practical works

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** fundamental discipline

**COURSE OBJECTIVES:** Acquiring the knowledge and skills necessary to use the computer as a working tool; Creating skills in using program packages dedicated to specific tasks: word processing, tables, charts, databases; Ability to solve problems specific to the specialization by using dedicated IT packages; Creating computer models for solving horticultural problems

**TOPICS:** Windows operating systems - overview Microsoft WORD: Create/save/open /close file; Page Setup: page margins, page sizes, page orientation header and footer options View Print Preview; Move/copy/paste; Select text; Search and replace, move to document; View Document; Header and footer preview - header and footer creation, ruler, toolbars; Insert to file: page numbers; Page breaks/section breaks; Footnotes; Insert and edit a drawing, diagram, object, text box; Text formatting - specifying all formatting attributes; Create lists numbered/ with bullets/hierarchies; Application borders and shadows; Formatting text in columns, specifying TAB positions and leader characters; Insert table, work with tables. Creating drawings: Drawing toolbar; Inserting equations in the document.

**TEACHING LANGUAGE :** Romanian

**KNOWLEDGE ASSESSMENT:** answers to exam 70%, final answers to Laboratory works 30%

**ASSESSMENT TYPE:** verification

**REFERENCES:**

1. Doina Roșca, 2003. Informatică managerială, Editura Universitaria, Craiova.
2. Mircea Băduț, 2003. Informatica în management, Editura Alabastră, Cuj Napoca.
3. Steve Johnson, 2008. Microsoft Office Word 2007, Editura Niculescu.
4. \*\*\* Microsoft Office documentation

## AGROCHEMISTRY

**CODE:**D29HCL106

**CREDITS:** 5

**COURSE COORDINATOR:** PhD.Associate Professor. Ana Maria DODOCIOIU

**YEAR / SEMESTER:** I<sup>st</sup> Year / I<sup>st</sup> Semester

**HOURS PER WEEK:** 2 hours of course, 2 hours of practical works

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** specialized

**COURSE OBJECTIVES:** Knowledge of the chemical composition of plants in order to establish the necessary elements nutritive for their nutrition and doses of chemical fertilizers and organic.Knowledge of the agrochemical soil in order to harmonize existing soil nutrients in crop plants and filling requirements deficit by fertilizers.Knowledge of the acids soil, alkaline and those anthropogenic degraded to establish measures to improve their agrochemical and fertilization

**TOPICS:** Purpose and development of agrochemistry, agrochemicals, Fundamentals of fertility in relation to horticultural plant biology, The soil as a source of nutrients for horticultural plants, Ionic composition improvement and raising the productive potential of acids soils, saline and alkaline, Fertilizers as a means to increase horticultural production and maintenance of soil fertility, Control of soil fertility status for horticultural plants by agrochemical methods, Principles and methods of rational use of fertilizers in fruit growing, viticulture and vegetables.

**TEACHING LANGUAGE :** Romanian

**KNOWLEDGE ASSESSMENT:** answers to exam 80%, final answers to Laboratory works 20%

**ASSESSMENT FORM:** exam

### REFERENCES

- 1.Dodocioiu Ana Maria, M. Susinski, R. Mocanu, 2009. Agrochemistry, Sitech Publishing House, Craiova.
- 2.Avarvarei I., Velicica Davidescu, Mocanu R., Goian M., Rusu M.,1977. Agrochemistry Sitech Publishing House Craiova.
- 3.Davidescu D.,Velicica Davidescu, 1985. Horticulture Agrochemistry, RSR Academy Publishing House
- 4.Rusu M. et al., 2005. Treaty of Agrochemistry, Ceres Publishing House, Bucharest.

## II<sup>nd</sup> SEMESTER

### BOTANY

**CODE:** D29HCL207

**CREDITS:** 4

**COURSE HOLDER:** Lecturer, PhD, Daniel RĂDUȚOIU

**YEAR/SEMESTER:** 1<sup>st</sup> year/ II<sup>st</sup> semester

**NUMBER OF HOURS PER WEEK:** 2 hours course, 2 hour practical course

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** main subject

**COURSE OBJECTIVES:** Studying and recognizing the main vascular plants, assimilating the main methods of plant investigation; Recognition of the main groups of the studied organisms; Differentiation between the main groups of the studied organisms; Knowledge of the ecology of the analyzed species and the presentation of the practical and scientific importance of plants.

**THEMES:** Introduction: Definition and object of study; Research methods; Systematic units (taxa); Plant nomenclature; Short history; Classification systems. Regnum Plantae sensu lato: What are plants (Plantae)?; Taxonomic considerations; The diversity of green plants sensu stricto; Phylogeny; Green algae: Charophyta. General characters; The importance of green algae. Regnum Plantae sensu strictissimo: Diversity and classification; Bryophytes - Non-vascular plants; Tracheophytes (Cormobionta, Tracheobionta) - Plantae vasculares: The origin and meaning of tracheophytes evolution; General characters; Systematic. Phyl. Pteridophyta (Ferigi) and Spermatophyta (gimnosperm and angiosperms); General characters, scientific and practical importance. Representatives.

**LANGUAGE OF INSTRUCTION:** Romanian

**KNOWLEDGE ASSESSMENT:** Exam answers 70%, final answers to practical laboratory work 10%, periodic testing by practical control exercises 10%, 5% continuous testing, activities like topics / essays / translations / projects, etc.

**ASSESSMENT TYPE:** exam

**BIBLIOGRAPHY:**

1. BUIA AL. & al., 1965. Botanica agricolă, vol. I și II., Edit. Agro-Silvică, București
2. CIOCĂRLAN V., 2000. Flora ilustrată a României. Pteridophyta et Spermatophyta. 1038 pag. Edit. Ceres, București.
3. COSTACHE I., 2009 Botanica I. Vol. 1. Morfologia și Anatomia plantelor. Fundația-Editura „Scrisul Românesc”. Craiova. 337 pag.
4. PĂUN M. & al., 1980. Botanica. Edit. Did. și Ped., București.
5. POPESCU GH., 2000. Botanica. Edit. Universitaria, Craiova.
6. WOESE, C.R., O. KANDLER, & M.L. WHEELIS, 1990. Towards a natural system of organisms: Proposal for the domains Archaea, Bacteria, and Eucarya.

## THE ENERGY BASE AND HORTICULTURAL MACHINES II

**CODE:** D29HCL208

**CREDITS:** 4

**COURSE HOLDER:** PhD Assoc. Professor Mihnea GLODEANU

**YEAR/SEMESTER:** I<sup>st</sup> year/ II<sup>st</sup> semester

**NUMBER OF HOURS PER WEEK:** 2 hours course, 2 hours practical course

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** domain

**COURSE OBJECTIVES:** knowledge of the construction and operation of horticultural machinery and equipment and also the complex influences that are established between their working organs, with soil and plants; knowledge the optimization of the working parameters of the formed aggregates and their role in establishing differentiated technologies; establishing the machine system according to the biological features of the cultivated plants, the values of the ecological factors and the environment protection.

**THEMES:** Presenting some notions regarding: mechanization technologies; soil working machines; machines for preparing the germinating bed; sowing machines; planting machines; machinery and equipment for the application of fertilizers and amendments; plant protection machinery; horticultural crop maintenance machines; horticultural crops harvesting machines; vegetable harvesting machines; fruit and grape harvesting machines; machinery for conditioning and preserving horticultural products; operation of horticultural machines.

**LANGUAGE OF INSTRUCTION:** Romanian

**KNOWLEDGE ASSESSMENT:** answers to exam 60%, final answers to Laboratory works 40%

**ASSESSMENT TYPE:** exam

**BIBLIOGRAPHY:**

1. Alexandru T, M.Glodeanu, 2009, Exploatarea mașinilor agricole. Editura Sitech, Craiova.
2. Alexandru T., 2005, Mașini horticole, Editura Sitech, Craiova.
3. Alexandru T., 2001, Calculul și construcția mașinilor de recoltat I, Reprografia Universității din Craiova.
4. Glodeanu M, Alexandru T, Bădescu M, Sărăcin I., 2002, Mașini și echipamente agricole. Editura Aius, Craiova.
5. Glodeanu M, Alexandru T, Boruz S., Sărăcin I, 2015, Mașini agricole și horticole I – tipuri reprezentative, reglaje, Editura Sitech, Craiova.

## TOPOGRAPHY

**CODE:** D29HCL209

**CREDITS:** 4

**COURSE HOLDER:** PhD, Professor, CĂLINA Aurel

**YEAR/SEMESTER:** I<sup>st</sup> year/ II<sup>st</sup> semester

**NUMBER OF HOURS PER WEEK:** 2 hours course, 2 hours field work + project

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** field knowledge

**COURSE OBJECTIVES:** Elaborate a long-term or short-term action plan for the landscaping of a space; Executing distance and surface measurements; Preparation of topographical plans; Use of topographic devices; Rebuilding plans and maps; Measuring level differences and calculating points altitudes; Elaboration of quoted plans and drawing of level curves; Explanation of calculation formulas specific to trace and control work; Choosing the best solutions, depending on the concrete situation in the field, for the design and control of the engineering works; Design and construction of support networks for topographic surveys, cadastral surveys and other engineering works. Making topographical surveys specific to topographic and themed plans and maps.

**THEMES:** General notions of topography; Units of measurement in topography; The topographic circle and trigonometric functions; Orientations and coordinate axes; Errors in topography; Marking and signaling points; The measurement of the angles and distances; Closed planimetric traverse method; Planimetric traverse method supported over known points; Picking up the details; Intersection and retrointersection; Drawing up plans; Calculation and detachment of surfaces; Leveling survey; Methods of geometric leveling; Trigonometric leveling; Leveling of the surfaces; Representation of relief.

**LANGUAGE OF INSTRUCTION:** Romanian

**KNOWLEDGE ASSESSMENT:** answers to exam 50%, periodical assessment through practical tests 20%, continuous assessment throughout semester 30%.

**ASSESSMENT TYPE:** exam

**BIBLIOGRAPHY:**

1. Călina A., și colab., 2010. Topografie generală și inginerească, Ediția a II<sup>a</sup>, Editura Sitech, Craiova.
2. Ionescu P. și colab., 1975. Topografie generală și inginerească, Editura Didactică și Pedagogică, București.
3. Leu I. și colab., 2002. Topografie și Cadastru, Editura Universul, București.
4. Mureșan D., Budiu V., 1988. Topografie și Desentehnic, Tipogr. Agronomia Cluj-Napoca.
5. Ursea V. și colab., 1986. Topografie de construcții, Curs Institutul de Construcții, București.
6. \*\*\*\*Ediție îngrijită de Cons. Fac. de Geodezie, 2002. Măsurătoriterestre – Fundamente - Vol. I, II, III, Edit. Matrix Rom, București.

## CHEMISTRY

**CODE D29HCL210**

**CREDITS:** 4

**COURSE HOLDER:** Senior Lecturer, PhD, Ileana COJOCARU

**YEAR/SEMESTER:** 1<sup>st</sup> year/ 1<sup>st</sup> semester

**NUMBER OF HOURS PER WEEK:** 2 hours course, 2 hours practical course

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** fundamental

**COURSE OBJECTIVES:** Familiarization with notions related to the structure of atom and classification of elements; Understanding the electronic configuration of elements, and their atomicity. Acquiring the necessary knowledge in order to understand the different types of chemical bonds.

**THEMES:** Atoms. Atomic structure. Classification of elements. Molecules. Chemical bonds. Chemical thermodynamics. Chemical equilibriums. Solutions. Ionic equilibriums. Notions of chemical kinetics. Catalysis. Colloid status of matter. Oxidation and reduction.

**LANGUAGE OF INSTRUCTION:** Romanian

**KNOWLEDGE ASSESSMENT:** exam answers 70%, final answers for workshops 30%

**ASSESSMENT TYPE:** exam

**BIBLIOGRAPHY:**

1. Cojocaru Ileana, Chimie Analitică, Lucrări Practice de Laborator, Editura Sitech, Craiova, 2009.
2. Popescu V., I. Cojocaru, Chimie Generală, Editura Sitech, Craiova, 2009.
3. Pleniceanu M., C. Spînu, Chimie generală, Tipografia Universității din Craiova, 2006.
4. Pleniceanu M., M. Isvoranu, Analize fizico-chimice, Tipografia Universității din Craiova, 2003.
5. Pleniceanu M., Chimie analitică calitativă și cantitativă, Editura Universitaria, Craiova, 1995.
6. Spînu Cezar, Maria Pleniceanu, Chimie generală, Editura Universitaria, Craiova, 2007.

## BIOPHYSICS AND AGROMETEOROLOGY

**CODE:**D29HC211

**CREDITS:** 4

**COURSE COORDINATOR:** Lecturer Dr. Rodica Aurelia Cimpoiașu

**YEAR / SEMESTER:** I<sup>st</sup> Year / II<sup>st</sup> Semester

**HOURS PER WEEK:** 2 hours of course, 1 hour of practical works

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** complementary

**COURSE OBJECTIVES:** Knowledge of specific applications living and research equipment with importance in biophysics and agricultural meteorology; explain the phenomena, the processes, applications and devices according to the main meteorological parameters, environmental characteristics; interpret the evolution of the system based on changes in environmental factors.

**TOPICS:** Matter organisation. Elements of spectroscopy. Contact phenomena between liquid and solid. Molecular transport phenomena. Diffusion and osmosis. Introduction in biological thermodynamics. The physical structure of the atmosphere. Solar radiation in the atmosphere and the ground. Thermal regime of the soil and air. Condensation and water vapor condensation products. Rain fall. The climate of Romania and of Europe.

**TEACHING LANGUAGE :** Romanian

**KNOWLEDGE ASSESSMENT:** answers to exam 60 %, periodic answers to practical work 20 %, results to periodic control works 20 %.

**ASSESSMENT FORM:** exam

### REFERENCES

- 1.R.Țițeica, I. Popescu, 1973.General Physics, vol. 1-3, Technical Publishing House, Bucharest.
- 2.G. C. Moisil, 1988.Romanian Academy Publishing House, Bucharest.
- 3.Al. Nicula, 1982.Electricity and Magnetism, Didactic and Pedagogical Publishing House, Bucharest.
- 4.Dragomirescu Elena, Liviu Enache, 1992.Biophysics, Bucharest.
- 5.Cimpoiasu Rodica,2010. Practical work. Biophysics and Meteorology, Alma Publishing House, Craiova.
- 6.P. Gheorghe, 1988.Introduction to Meteorology and Climatology, Bucharest.

## INTRODUCTION IN HORTICULTURE

**CODE:** D29HCL212

**CREDITS:** 4

**COURSE COORDINATOR:** Senior Lecturer, PhD, Nicolae LASCU

**YEAR / SEMESTER:** I<sup>st</sup> Year / II<sup>st</sup> Semester

**HOURS PER WEEK:** 2 hours of course, 1 hour of practical works

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** specialized (OPU)

**COURSE OBJECTIVES:** Introduction to the science of horticultural plant cultivation. Understanding the fundamental principles of plant physiology and botany combined with skills and intuition in the use of these scientific principles

**TOPICS:** Getting Started. Plant Structure. Classification of horticultural plants. Plant growth. Reproductive development. Vegetative development of horticultural plants. Multiplication of horticultural plants

**TEACHING LANGUAGE :** Romanian

**KNOWLEDGE ASSESSMENT:** answers to exam 80%, final answers to Laboratory works 20%, referrals, themes 10%

**ASSESSMENT FORM:** exam

### REFERENCES

1. Cosmulescu Sina. 2010. Introducere in horticultură. Suport de curs.
2. Indrea Dumitru, Apahidean Alex Silviu. 2004. Ghidul cultivatorului de legume. Editura Ceres
3. Stanică Florin, Braniște Nicolae. 2011. Ghid pentru pomicultori. Editura Ceres
4. Dejeu Liviu. 2009. Viticultura practică. Editura Ceres

## SPECIALTY PRACTICE

**CODE:** D29HCL213

**CREDITS:** 4

**COURSE HOLDER:** Senior Lecturer, PhD, Nicolae LASCU

**YEAR/SEMESTER:** 1<sup>st</sup> year/ II<sup>st</sup> semester

**NUMBER OF HOURS PER WEEK:** 30 hours practical course

**NUMBER OF WEEKS:** 3

**COURSE TYPE:** main subject

**COURSE OBJECTIVES:** The purpose of practical training is to form skills and abilities appropriate to the specific activities of horticulture. Acquiring the applied skills of the knowledge obtained at the specialized courses regarding the field identification of the horticultural species, cultivating, harvesting and preserving them, the recognition and description of the soil profile, the field study of some soil properties, the identification of the plant nutrition disorders horticulture, knowledge of the equipment used in surveying, how to work with them and the execution of measurements of distances and surfaces.

**THEMES:** Methods of collecting and preserving vascular plants to achieve herbaceous plants. Identification of the main morphological types of roots, stems, leaves, flowers and fruits. Identification of different plants encountered on the ground by means of dicotomic keys. Soil analysis on the ground: location of the soil profile; Orientation of the soil profile; Execution of the soil profile; The description of the soil profile determining morphological properties: (number, sequence and thickness of horizons, color, texture and structure of horizons, porosity, compactness, neoformations and soil inclusions, appreciation of soil humidity, appreciation of humus content, characterization of plant nutrition status Fertilization of plants grown on nutrient substrates Presentation of the equipment used in surveying and how to work with them Surveying of distances and surfaces measurements Practical knowledge of the fields of activity in horticulture, floricultural plants, fruit trees, leguminous plants and vine under Morphological, structural, multiplication and lifecycle, and training of practical skills.

**LANGUAGE OF INSTRUCTION:** Romanian

**KNOWLEDGE ASSESSMENT:** the practice book and the exam answers 100 %.

**ASSESSMENT TYPE:** verification

**BIBLIOGRAPHY:**

- 1.Călina A. și colab., 2014. Topografie inginerească. Editura Sitech, Craiova
- 2.Costache I., 2011. Practicum de Botanică I. Editura Universitaria Craiova.
- 3.Dodocioiu Ana Maria, Susinski M., Mocanu R., 2009. Agrochimie. Editura Sitech, Craiova.
- 4.Popescu C., Grecu Florina, 2011. Pedologie - Lucrări practice. EdituraUniversitaria, Craiova.

## ENGLISH I

**CODE:** D29HCL214

**CREDITS:** 2

**COURSE COORDINATOR:** Ph.D, Senior Lecturer, Bărbuceanu Costina Denisa

**YEAR / SEMESTER:** I<sup>st</sup> Year / I<sup>st</sup> Semester

**HOURS PER WEEK:** 2 hours of seminar

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** OPTIONAL

**COURSE OBJECTIVES:** Improving the ability to understand spoken English and specific vocabulary texts written in English, using a reference material especially designed for students of the Faculty of Horticulture, but also for those who want to learn ESP vocabulary in context. Practice of important vocabulary and grammar practice, tackle four skills, reading, listening, speaking and writing, explain specific vocabulary, and grammar lessons which are thought in detail, with exercises that give students useful practice in this particular area. True or false exercises, gap filling, matching the words with their definition, translations, in context dialogues and lessons with key bolded words are really selected for students to understand and use it correctly. Deepening the main grammar rules of English in a modern way, problematic, requiring students to learn but also to think.Consolidation of skills to dialogue, describe, report. Emphasizing the practical nature of learning, the course is ment to stimulate students' interest in written and spoken language, to improve knowledge and communication in English.

**TOPICS:** Focus on language: Present Tense Simple/ Continuous, Vocabulary: Horticulture is the branch of agriculture that deals with the art, science, technology, and business of growing plants. It also is the study of plants. It includes the cultivation of medicinal plants, fruits, vegetables, nuts, seeds, herbs, sprouts, mushrooms, algae, flowers, seaweeds and non-food crops such as grass and ornamental trees and plants.

**TEACHING LANGUAGE :** English

**KNOWLEDGE ASSESSMENT:** exam answers 80%, theoretical and practical checking 20%

**ASSESSMENT FORM:** Checking

**REFERENCES**

1. Cerăceanu, Denisa-Costina, English for Biology Students, Editura Universitaria, Craiova, 2007
2. Gălățeanu –Firnoagă, Georgiana; Parks, Debora, Exerciții și teste de gramatică engleză, Editura Paralela 45, București, 2003.
3. Chilărescu, Mihaela; Paidos Constantin, Proficiency in English, Institutul european, 2001
4. Pawlowska, Barbara, Kempinski, Zbigniew, Teste de limba engleză, Editura Teora, București, 1997
5. Nedelcu, Carmen, English Grammar, Editura Universitaria, Craiova, 2004

## FRENCH I

**CODE:** D29HCL215

**CREDITS:** 2

**COURSE COORDINATOR:** Ph.D, Senior Lecturer Ileana Mihaela CHIRIȚESCU

**YEAR / SEMESTER:** I<sup>st</sup> Year / I<sup>st</sup> Semester

**HOURS PER WEEK:** 2 hours of seminar

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** OPTIONAL

**COURSE OBJECTIVES:** Improving the ability to understand spoken French and specific vocabulary texts written in French, using a reference material especially designed for students of the Faculty of Horticulture, Horticulture Specialization, but also for those who want to learn vocabulary in context. Practice of important Horticulture vocabulary and grammar practice, tackle four skills, reading, listening, speaking and writing, explain specific vocabulary, and grammar lessons which are thought in detail, with exercises that give students useful practice in this particular area. True or false exercises, gap filling, matching the words with their definition, translations, in context dialogues and lessons with key bolded words are really selected for students to understand and use it correctly. Deepening the main grammar rules of French in a modern way, problematic, requiring students to learn but also to think.

Consolidation of skills to dialogue, describe, report. Emphasizing the practical nature of learning, the course is ment to stimulate students' interest in written and spoken language, to improve knowledge and communication in French.

**TOPICS:** Focus on language, Vocabulary: Landscape. Scale and heterogeneity (incorporating composition, structure, and function). Patch and mosaic. Boundary and edge. Ecotones, ecoclines, and ecotopes. Disturbance and fragmentation. Theory. Application. Research directions.

**TEACHING LANGUAGE :** French

**KNOWLEDGE ASSESSMENT:** exam answers 80%, theoretical and practical checking 20%

**ASSESSMENT FORM:** Checking

**REFERENCES**

1. Chirițescu, Ileana Mihaela, Le Français pour les agronomes, les horticulteurs et les chimistes, Editura Universitaria, Craiova, 2016.
2. Bernard Maurice, Saison André, Avond Guy, Le Bail Helene, Chimie, Éditions Fernard Nathan, Paris, 1979.
3. Dincă, Daniela Liliana, Syntaxe de la phrase noyau en français contemporain, Editura Universitaria, Craiova, 2006.
4. Fournier, Jean; Lafarge, Alain; Bastide, Maurice; Mouchel, Gérard; Vredon, Renée – Français 6<sup>e</sup> Lire, Observer, s'Exprimer, Bordas, Paris, 1981.
5. Negreanu, Aristița, Dicționar de expresii francez-român Dicex, ediția a III-a revizuită și adăugită, Editura All Educațional, București, 2007.
6. Riess, Jean, Premiers pas vers un sang artificiel (une application des fluorocarbures), extrait d'un article paru dans le courrier du CNRS, n° 18, 1975.

- 7.\*\*\*Mon cahier de révisions, CE1, Éditions Éclairs de Plume, 2010.
- 8.\*\*\*Les cahiers de révisions, CM1, Éditions Éclairs de Plume, 2010.
- 9.\*\*\*Cahier de révisions, CE1, Éditions Éclairs de Plume, 2010.
- 10.\*\*\*Cahiers de révisions, CE2, Éditions Éclairs de Plume, 2010.

## ENGLISH II

**CODE:** D29HCL214

**CREDITS:** 2

**COURSE COORDINATOR:** Ph.D, Senior Lecturer, Bărbuceanu Costina Denisa

**YEAR / SEMESTER:** I<sup>st</sup> Year / II<sup>nd</sup> Semester

**HOURS PER WEEK:** 2 hours of seminar

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** Optional

**COURSE OBJECTIVES:** Improving the ability to understand spoken English and specific vocabulary texts written in English; using a reference material especially designed for students of the Faculty of Horticulture, but also for those who want to learn ESP vocabulary in context. Practice of important vocabulary and grammar practice, tackle four skills, reading, listening, speaking and writing, explain specific vocabulary, and grammar lessons which are thought in detail, with exercises that give students useful practice in this particular area. True or false exercises, gap filling, matching the words with their definition, translations, in context dialogues and lessons with key bolded words are really selected for students to understand and use it correctly. Deepening the main grammar rules of English in a modern way, problematic, requiring students to learn but also to think. Consolidation of skills to dialogue, describe, report. Emphasizing the practical nature of learning, the course is ment to stimulate students' interest in written and spoken language, to improve knowledge and communication in English.

**TOPICS:** Plant conservation, landscape restoration, landscape and garden design, construction, and maintenance, and arboriculture. Inside agriculture, horticulture contrasts with extensive field farming as well as animal husbandry.

**TEACHING LANGUAGE :** English

**KNOWLEDGE ASSESSMENT:** exam answers 80%, theoretical and practical checks 20%

**ASSESSMENT FORM:** Checking

### REFERENCES

1. Cerăceanu, Denisa-Costina, English for Biology Students, Editura Universitaria, Craiova, 2007
2. Gălățeanu –Firnoagă, Georgiana; Parks, Debora, Exerciții și teste de gramatică engleză, Editura Paralela 45, București, 2003.
3. Chilărescu, Mihaela; Paidos Constantin, Proficiency in English, Institutul european, 2001
4. Pawlowska, Barbara, Kempinski, Zbigniew, Teste de limba engleză, Editura Teora, București, 1997
5. Nedelcu, Carmen, English Grammar, Editura Universitaria, Craiova, 2004

## FRENCH II

**CODE:** D29HCL214**CREDITS:** 2

**COURSE COORDINATOR:** Ph.D, Senior Lecturer Ileana Mihaela CHIRIȚESCU

**YEAR / SEMESTER:** I<sup>st</sup> Year / II<sup>nd</sup> Semester

**HOURS PER WEEK:** 2 hours of seminar

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** Optional

**COURSE OBJECTIVES:** Improving the ability to understand spoken French and specific vocabulary texts written in French; using a reference material especially designed for students of the Faculty of Horticulture, Horticulture Specialization, but also for those who want to learn vocabulary in context. Practice of important Horticulture vocabulary and grammar practice, tackle four skills, reading, listening, speaking and writing, explain specific vocabulary, and grammar lessons which are thought in detail, with exercises that give students useful practice in this particular area. True or false exercises, gap filling, matching the words with their definition, translations, in context dialogues and lessons with key bolded words are really selected for



students to understand and use it correctly. Deepening the main grammar rules of French in a modern way, problematic, requiring students to learn but also to think. Consolidation of skills to dialogue, describe, report. Emphasizing the practical nature of learning, the course is ment to stimulate students' interest in written and spoken language, to improve knowledge and communication in French.

**TOPICS:** Topological ecology Organism-centred. Analysis of social-ecological systems using the natural and social sciences and humanities. Ecology guided by cultural meanings of lifeworldly landscapes.

**TEACHING LANGUAGE :** French

**KNOWLEDGE ASSESSMENT:** exam answers 80%, theoretical and practical checks 20%

**ASSESSMENT FORM:** Checking

**REFERENCES:**

1. Chirișescu, Ileana Mihaela, Le Français pour les agronomes, les horticulteurs et les chimistes, Editura Universitaria, Craiova, 2016.
2. Bernard Maurice, Saison André, Avond Guy, Le Bail Helene, Chimie, Éditions Fernard Nathan, Paris, 1979.
3. Dincă, Daniela Liliana, Syntaxe de la phrase noyau en français contemporain, Editura Universitaria, Craiova, 2006.
4. Fournier, Jean; Lafarge, Alain; Bastide, Maurice; Mouchel, Gérard; Vredon, Renée – Français 6e Lire, Observer, s'Exprimer, Bordas, Paris, 1981.
5. Negreanu, Aristița, Dicționar de expresii francez-român Dicex, ediția a III-a revizuită și adăugită, Editura All Educațional, București, 2007.
6. Riess, Jean, Premiers pas vers un sang artificiel (une application des fluorocarbures), extrait d'un article paru dans le courrier du CNRS, n° 18, 1975.
7. \*\*\*Mon cahier de révisions, CE1, Éditions Éclairs de Plume, 2010.
8. \*\*\*Les cahiers de révisions, CM1, Éditions Éclairs de Plume, 2010.
9. \*\*\*Cahier de révisions, CE1, Éditions Éclairs de Plume, 2010.
10. \*\*\*Cahiers de révisions, CE2, Éditions Éclairs de Plume, 2010.

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## PHYSICAL EDUCATION I

**CODE:** D29HCL216

**CREDITS:** 1

**COURSE HOLDER:** Senior Lecturer, Ph D, Daniel CIOCĂNESCU

**YEAR/SEMESTER:** 1st year/ 1st semester

**NUMBER OF HOURS PER WEEK:** 1 hour practical course

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** main subject

**COURSE OBJECTIVES:** Discipline aims at forming the theoretical, practical and methodical skills for individual or group practice for a healthy lifestyle; Awareness of students about the role and importance of practicing physical exercise.

**THEMES:** Athletics: school elements of jumping and running; Application paths combined with treadmills; Application paths combined with jumping elements; Application paths combined with equilibrium, escalation, climbing, etc.: Sports games: volleyball, badminton; Bilateral games under similar competitions conditions.

**LANGUAGE OF INSTRUCTION:** Romanian

**KNOWLEDGE ASSESSMENT:** Assessment through practical tests 80%, continuous assessment throughout semester 20%

**ASSESSMENT TYPE:** A/R

**BIBLIOGRAPHY:**

1. Barbu D., 2010. Fotbal. Curs de bază pentru studenți. Craiova, Edit. Universitaria
2. Dragomir, M., Albină, A., 2006. Atletism în școală, Ed. Universitaria, Craiova
3. Dragnea A. C-tin. și colab, 2006. Educație fizică și sport - teorie și didactică. Ed. FEST, București.
4. Ortanescu Dorina, 2008. Gimnastica – componentă a educației fizice școlare, Ed. Universitaria, Craiova
5. Orțănescu Dorina, 2008, Gimnastica- componentă a educației fizice școlare, Ed. Universitaria Craiova
6. Rață G., Ghe. Rață ,2008. Educația fizică și metodică predării ei – Editura PIM, Iași.
7. Ungureanu, A. 2009. Metodica educației fizice și sportului - Editura Universitaria, Craiova.
8. Țifrea, C., 2002. Teoria și metodică atletismului - Editura Doreco, București.

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## PHYSICAL EDUCATION II

**CODE:** D29HCL216

**CREDITS:** 1

**COURSE HOLDER:** Senior Lecturer, PhD, Daniel CIOCĂNESCU

**YEAR/SEMESTER:** 1st year/ 2nd semester

**NUMBER OF HOURS PER WEEK:** 1 hour practical course

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** main subject

**COURSE OBJECTIVES:** Discipline aims at forming the theoretical, practical and methodical skills for individual or group practice for a healthy lifestyle; Awareness of students about the role and importance of practicing physical exercise.

**THEMES:** Gymnastics: Front and Band Exercises; Gymnastics Aerobics / Fitness; Application trails combined with treadmills; Application paths combined with equilibrium, escalation, climbing exercises; Sports games: basketball; Sports game: football; Bilateral games under similar competition conditions.

**LANGUAGE OF INSTRUCTION:** Romanian

**KNOWLEDGE ASSESSMENT:** Assessment through practical tests 80%, continuous assessment throughout semester 20%

**ASSESSMENT TYPE:** A/R

### **BIBLIOGRAPHY:**

- 1.Barbu D., 2010. Fotbal. Curs de bază pentru studenți. Craiova, Edit. Universitaria
- 2.Dragomir, M., Albină, A., 2006. Atletism în școală, Ed. Universitaria, Craiova
- 3.Dragnea A. C-tin. și colab.,2006. Educație fizică și sport - teorie și didactică. Ed. FEST, București.
- 4.Ortanescu Dorina, 2008. Gimnastica – componentă a educației fizice școlare, Ed.Universitaria, Craiova
- 5.Orțănescu Dorina, 2008. Gimnastica- componentă a educației fizice școlare, Ed. Universitaria Craiova
- 6.Rață G., Ghe. Rață, 2008. Educația fizică și metodică predării ei – Editura PIM, Iași.
- 7.Ungureanu, A. 2009. Metodica educației fizice și sportului - Editura Universitaria, Craiova.
- Țifrea, C., 2002. Teoria și metodică atletismului - Editura Doreco, București.

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## SECOND YEAR HORTICULTURE

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### FIRST SEMESTER

#### ECOLOGY AND ENVIRONMENT PROTECTION

**CODE:** D29HCL317

**CREDITS:** 4

**COURSE HOLDER:** Associate Professor, PhD, Liviu Cristian MĂRĂCINEANU

**YEAR/SEMESTER:** II<sup>st</sup> year / I<sup>nd</sup> semester

**NUMBER OF HOURS PER WEEK:** 2 hours course, 2 hours practical course

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** fundamental

**COURSE OBJECTIVES:** Knowledge of the structure, functions and relations of natural and anthropic ecosystems, knowledge of the impact of anthropogenic activities on the environment, knowledge of environmental protection

**THEMES:** Laws and ecological principles, ecosystem (structure, functions, dynamics), environmental degradation, nature protection

**LANGUAGE OF INSTRUCTION:** Romanian

**KNOWLEDGE ASSESSMENT:** examination answers 50 %, final answers for workshops 50%,

**ASSESSMENT TYPE:** examination

**BIBLIOGRAPHY:**

- 1.COTIGĂ C., 2000, Ecology and Environment protection. Sitech Publishing House, Craiova
- 2.NEACȘU P., OLTEANU I., OLTEANU E., 2000, Ecology and legal protection of the environment, Universitaria Publishing House, Craiova
- 3.ȘCHIOPU D. and others, 2002, Ecology and Environment protection. Ion Ionescu de la Brad Publishing House, Iași

**MICROBIOLOGY****CODE:** D29HCL318**CREDITS:** 5**COURSE COORDINATOR:** PhD. Professor . POPA Daniela**YEAR/ SEMESTER:** II<sup>nd</sup> YEAR / I<sup>st</sup> SEMESTER**NUMBER OF HOURS PER WEEK:** 2 hours of course, 2 hours of practical works**NUMBER OF WEEKS:** 14**SUBJECT TYPE :** fundamental/ compulsory**COURSE OBJECTIVES:** Learning morphological, metabolic and reproduction features of important microorganisms in agriculture**TOPICS:** Characterization of the major groups of microorganisms: viruses, bacteria, yeasts, molds. Chemical composition of microorganisms. Enzymatic equipment of bacteria and yeasts. Nutrition of microorganisms; Forming the skill to execute and interpret microscopic preparations.**TEACHING LANGUAGE:** Romanian**KNOWLEDGE ASSESSMENT:** answers to exam 35%, Active participation in courses. 10% Written assessment (during the semester): questionnaire 10%, Final written assessment (in the exams session) 35%, Active participation in seminars 10%**ASSESSMENT FORM:** exam**REFERENCES:**

- 1.Popa,A., Popa Daniela, Dragomir Felicia, 2002.Microbiologie generală. Ed. Universitaria.
- 2 Dragomir Felicia, Popa Daniela, 2008. Microbiologie. Microbiologie practică. Ed. Universitaria.

**PLANT PHYSIOLOGY****CODE:**D29HCL319**CREDITS:** 5**COURSE HOLDER:** Lecturer dr. Ion NICOLAE**YEAR/SEMESTER:** II<sup>st</sup> Year / I<sup>nd</sup> SEMESTER**NUMBER OF HOURS PER WEEK:** 2 hours course, 2 hours practical course**NUMBER OF WEEKS:** 14**COURSE TYPE:** fundamental**COURSE OBJECTIVES:** Knowledge and interpretation of the physiological processes of plants and acquiring practical skills for the experimental demonstration of the main vital plant manifestations.**THEMES:** Plant cell physiology. Water exchange between the plant cell and the external environment. Plant water regime (Absorption, transport and elimination of water by plants). Mineral Nutrition. Photosynthesis. Synthesis, transport and storage of organic substances in plants. Aerobic respiration and anaerobic respiration. Plant growth and plant development. Plant orientation and growth movements.**LANGUAGE OF INSTRUCTION:** Romanian**KNOWLEDGE ASSESSMENT:** answers to exam course 70 % and answers to Laboratory works 30 %**ASSESSMENT TYPE:** exam**BIBLIOGRAPHY:**

1. Boldor O. and others, 1982. Plant Physiology. Didactical and Pedagogical Publishing. Bucharest.
2. Boldor O. and others, 1983. Plant Physiology-course practical. Didactical and Pedagogical Publishing. Bucharest.
3. Burzo I. and others, 1999. Plant physiology of culture. vol. I. The Editorial Poligraphic Science Enterprise. Chișinău.
4. Milică C. and others, 1982. Vegetal physiology. Didactical and Pedagogical Publishing. Bucharest.
5. Nicolae I., 2008. Plant Physiology. Sitech Publishing. Craiova.

6. Nicolae I., 2008. Practicum of vegetal physiology. Sitech Publishing. Craiova.
7. Nicolae I., 2010. Physiology of horticultural plants. Sitech Publishing. Craiova.
8. Peterfi Șt., Sălăgeanu N., 1972. Plant physiology. Didactical and Pedagogical Publishing. Bucharest.
9. Simeanu V., Olimid V., 1990. Practical Guide to Plant Physiology. Reprography University of Craiova.
10. Șumălan R., 2006. Vegetal physiology. Eurobit Publishing. Timisoara.

## **COMMON AGRICULTURAL POLICIES**

**CODE:** D29HCL320

**CREDITS:** 4

**COURSE HOLDER:** Professor GIUGEA Nicolae PhD

**YEAR/SEMESTER:** II<sup>st</sup> year/ I<sup>st</sup> semester

**NUMBER OF HOURS PER WEEK:** 1 hours course, 1 hours practical course

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** complementary

**COURSE OBJECTIVES:** Knowledge of the objectives, premises and tools for implementing agricultural policies, knowledge of institutions involved in the implementation of agricultural policies

**THEMES:** Stages of European construction. Institutions of the U.E. involved in the promotion and implementation of common agricultural policies. Types of European Policies: Common Agricultural Policy  
Current measures to support Romanian agriculture

**LANGUAGE OF INSTRUCTION:** Romanian

**KNOWLEDGE ASSESSMENT:** examination answers 50 %, final answers for workshops 50%,

**ASSESSMENT TYPE:** colloquium

**BIBLIOGRAPHY:**

1.ZAHIU L. and others., 2006, Agriculture of the European Union under the impact of the Common Agricultural Policy. Publishing House Ceres, Bucharest;

2.ZAHIU L., DACHIN A., 2009, Comparative agro-food policies. Economic Publishing House, Bucharest.

## **GENERAL FLORICULTURE**

**CODE:** D29HCL321

**CREDITS:** 5

**COURSE HOLDER:** Ph.D, Senior Lecturer, Manuela Adriana Manda

**YEAR/SEMESTER:** II<sup>nd</sup> year/ I<sup>st</sup> semester

**NUMBER OF HOURS PER WEEK:** 2 hours course, 2 hours practical course

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** domain

**COURSE OBJECTIVES:** Aim of the discipline is to provides students with specialized knowledge regarding the biologic and ecologic features of floral plants, classification of floral plants, the bond between the origin and the needs of plants regarding the environmental factors, propagation methods, production technologies, harvesting, preserving and selling of ornamental plants.

**THEMES:** Definition, object of study, history and importance. The present state of ornamental plants' cultivation. Morphological and biological features. Classification of floral plants. The needs of floral plants towards ecologic factors and the reciprocal relationships that take place in the development of biologic cycle. Propagation of floral plants (generative and vegetative). Growing technology of ornamental plants in the field and in protected spaces. Harvesting, conditioning, preserving and selling of ornamental plants (cut flowers and pots).

**LANGUAGE OF INSTRUCTION:** Romanian

**KNOWLEDGE ASSESSMENT:** exam answers 60%; test results for practical course 40 %.

**ASSESSMENT TYPE:** exam

**BIBLIOGRAPHY**

1. Anton Doina, 2003 – Floricultura generala. Ed. Universitaria. Craiova.

2. Anton Doina, Carmen Nicu, 2006 - Inmultirea plantelor decorative. Ed. Universitaria, Craiova.

3. Costache Marcel, T. Roman, 2001 - Ghid pentru recunoasterea si combaterea bolilor si daunatorilor la plantele floricole si ornamentale. Ed. Gea.
4. Mandă Manuela, 2015 – Note de curs.
5. Nicu Carmen, Anton D., 2004 - Floricultură generală. Îndrumător de lucrări practice. Ed. Reprograph.
6. Șelaru Elena, 2007 - Cultura florilor de grădină. Ed. Ceres.
7. Toma Florin, 2009 – Floricultura generala. Ed. INVEL Multimedia.

## **EXPERIMENTAL DESIGN**

**CODE:** D29HCL322

**CREDITS:** 4

**COURSE COORDINATOR:** Prof. Dr. Mihai BOTU

**YEAR/SEMESTER:** 2nd/ Ist

**HOURS PER WEEK:** 1 hour of course, 2 hours of laboratory

**NUMBER OF WEEKS:** 14

**TYPE OF COURSE:** Domain

**COURSE OBJECTIVES:** Knowledge of the role, importance and particularities of design of experiments in horticultural research. Defining research objectives, methodologies and techniques, set up experiments, data collection and inference. Capitalization of experimental results.

**TOPICS:** Role, importance, objectives and particularities of experimental design in horticultural research. Design of experiments and methodology in horticultural research. Extraction of samples for analysis. Measurement errors in field experiments. Methods of setting up monofactorial and polyfactorial trials (randomized blocks, Latin square, Latin rectangle, balanced square lattice). Parameters and estimators in statistics (variance, standard deviation, coefficient of variation, correlation, regression). Statistical hypothesis testing, F, *t* and Duncan tests. Analysis of variance, interpretation and use of experimental results.

**TEACHING LANGUAGE:** Romanian

**KNOWLEDGE ASSESSMENT** 70% of the final grade represent the response to the written theoretical questions and 30% of the final grade the answers to laboratory tests.

**ASSESSMENT FORM:** Verification

**REFERENCES:**

1. Botu I., Botu M. 1994. Metode și tehnici de cercetare în pomicultură. Ed. Conphys. Rm. Vâlcea.
2. Botu I., Botu M. 2003. Biostatistică și design experimental în agricultură și biologie. Ed. Conphys. Rm. Vâlcea.
3. Botu I., Botu M. 2010. Tehnică experimentală în horticultură și ecologie (Elemente de bază). Ed. Conphys, Rm. Vâlcea.
4. Ceapoiu N. 1968. Metode statistice în experiențele agricole și biologice. Edit. Agrosilvică. București.
5. Sokal, R.R., Rohlf, F.J. 1994. Biometry: The Principles and Practices of Statistics in Biological Research. 3rd Edition. W. H. Freeman.
6. Zar, J.H, 1998. Biostatistical Analysis. 4th Edition. Prentice Hall.

## **II<sup>nd</sup> SEMESTER**

### **AGROPHYTOTECHNIE**

**CODE:** D29HCL425

**CREDITS:** 4

**COURSE COORDINATOR:** PhD Associate Professor. Olaru Liviu

**YEAR/ SEMESTER:** II<sup>nd</sup> YEAR/ II<sup>nd</sup> SEMESTER

**NUMBER OF HOURS PER WEEK:** 2 hours of course, 2 hours of practical works

**NUMBER OF WEEKS:** 14

**SUBJECT TYPE:** Fundamental/ Compulsory

**COURSE OBJECTIVES:** Relations between factors of vegetation, soil and cultivated plants as well as agrotechnic methods to control these factors, conventional and unconventional systems of tillage with different tools and agricultural machinery ( plow, harrow, baking, leveling, combined cultivator, rotary,

roller, chisel, paraplow etc), presents weeds and agro-phytotechnical, physical, biological and chemical methods that combat them; particularly through the rational use of herbicides, crop rotation, differentiated agrotechnique, agricultural systems etc., to know the importance, systematic and soils for each cultivated plant, biological requirements regarding the climate and soil and crop technology for private and organised agriculture as associations or companies.

**TOPICS:** The study of plant lives' factors, determining methods by which they can be directed, learning the requirements of various species of cultivated plants and establishing the means for satisfying these requirements in order to obtain productions as big as possible as well as of superior quality.

**TEACHING LANGUAGE:** Romanian

**KNOWLEDGE ASSESSMENT :** Answers at the exam 60 %, final answers at practical laboratory works 40 %

**ASSESSMENT FORM:** exam

**REFERENCES:**

Bâlțeanu Gh., Bârnaure V., 1989 -Phytotechnie, Ceres Publishing House, Bucharest

Ceapoi N. și colab., 1984 - Wheat, Academy Publishing House, Bucharest

Pop L. și colab., 1977 – Agro-phytotechnical On Sandy Soils, Ceres Publishing House, Bucharest.

Șarpe N., Strujan Gh., 1981 – Chemical Control of Weeds in Field Crops, Ceres Publishing House, Bucharest.

Gangioveanu I., Olaru L. 1999- Phytotechnie, Universitaria Publishing House, Craiova

## GENERAL ENTOMOLOGY

CODE: D29HCL426

CREDITS: 4

COURSE COORDINATOR: Professor PhD. Ion MITREA

YEAR/SEMESTER: II<sup>nd</sup> YEAR/ II<sup>nd</sup> SEMESTER

NUMBER OF HOURS PER WEEK: 2 hours of course, 2 hours of practical works

NUMBER OF WEEKS: 14

TIPUL DISCIPLINEI: from the field of activity

COURSE OBJECTIVES: Learning and accumulating knowledge on some aspects of systematics, morphology, anatomy, biology, ecology, attack mode, host plants, control as well as the recognition of major pests of horticultural plants.

TOPICS: Introductory notions, External morphology of insects, Insects anatomy and physiology, Insects biology, Insects ecology, Insects systematics, General features of mites, crustaceans, nematodes, molluscs and damaging vertebrate, Prevention methods of control against animal pests of horticultural plants.

TEACHING LANGUAGE: Romanian

KNOWLEDGE ASSESSMENT: answers at the exam 70 %, Testing practical skills along the semester 10%, final answers at practical laboratory works 20 %

ASSESSMENT FORM: exam

REFERENCES:

1.I. Ghizdavu și colab., Agricultural Entomology, E.D.P. Bucharest, 1997.

2.I. Mitrea, Agricultural Entomology, Universitaria Publishing House, Craiova, 2005.

3.I. Mitrea, C. Stan, O. Țucă, *Entomology, vol. 1*, Reprograph Publishing House, Craiova, 2010.

4.I. Rosea și colab., Integrated control of weeds diseases and crop pests. Did. And Pedag Publishing House. R.A. Bucharest, 2000.

5.I. Rosca, I. Oltean, I. Mitrea, și colab. Treaty of General and Specific Entomology, Alpha MDN Publishing House, Buzău, 2011

## GENERAL PHYTOPATHOLOGY

CODE: D29HCL427

CREDITS: 5

COURSE COORDINATOR: PhD. Professor . Rodi MITREA

YEAR/SEMESTER : II<sup>nd</sup> YEAR / II<sup>nd</sup> sem.

NUMBER OF HOURS PER WEEK: 2 hours of course, 2 hours of practical works

NUMBER OF WEEKS: 14

SUBJECT TYPE: from the field of activity

**COURSE OBJECTIVES:** Learning and accumulating knowledge on some aspects of biological characteristics of the main types of pathogens, the role of interaction parasite- plant , host-environment in the pathogenesis process, mechanisms of plant resistance to diseases and protection means for plants in the context of integrated control.

**TOPICS:** General notions about diseases (disease classification, interface of plant host –parasite and successive phases of disease), Changes in the plants during the pathogenesis process (biochemical, physiological and anatomical- morphological). Parasitism from its origins to the present and its consequences; Parasitic traits of pathogens, Pathogen agents epidemiology, conservation and transmission of infectious inoculum, Plant resistance to diseases (before the infection, after the infection). General characteristics of phytopathogenic viruses, mycoplasmas and phytopathogenic bacteria, of phytopathogenic fungi, General prevention technologies and intergated control of horticultural plant diseases, Protection measures of the agro-ecosystem and the prevention of poisoning in phyto-sanitary works.

**TEACHING LANGUAGE:** Romanian

**KNOWLEDGE ASSESSMENT:** answers at the exam 70 %, final answers at practical laboratory works 30 %

**ASSESSMENT FORM:** exam

**REFERENCES:**

- 1.Eliade, Eugenia, 1990. Phytopathology, Ed. II, University of Bucharest Typography.
- 2.Mitreă, Rodi, 2004. Phytopathology, Universitaria Publishing House, Craiova.
- 3.Mitreă, Rodi, 2005. Parasites of Plants, Universitaria Publishing House, Craiova.
- 4.Mitreă, Rodi, 2006. Main diseases of the major horticultural species, Universitaria Publishing House, Craiova.
- 5.Tănase, C., Şesan, Tatiana, Eugenia, 2006. Current Concepts in Fungs Taxonomy, Univ."A.I. Cuza" Publishing House, Iaşi.

## SPECIAL FLORICULTURE

**CODE:** D29HCL428

**CREDITS:** 5

**COURSE COORDINATOR:** Associate Professor, PhD, Carmen NICU

**YEAR / SEMESTER:** II<sup>nd</sup> year/ II<sup>nd</sup> semester

**NUMBER OF HOURS PER WEEK:** 2 hour of course, 2 hours of practical works

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** specialized

**COURSE OBJECTIVES:** Knowledge of flower species cultivated in the field and greenhouses. Factors that influence the productivity and quality of flower plants. Knowledge of the establishment and maintenance works of floral crops. Ways of use in outdoor and indoor spaces, according to ecological requirements, growth particularities and decorative features.

**TOPICS:** Annual, biennial, perennial hemicryptophyte and geophyte flower species used in different floral compositions in green spaces. Crops in greenhouses. Species grown in the soil of the greenhouse for the production of cut flowers. Species decorative through flowers, leaves, fruits, cultivated in pots (biological particularities, morphological and decorative features, ecological requirements, culture technology, use).

**TEACHING LANGUAGE:** Romanian

**KNOWLEDGE ASSESSMENT:** Exam answers 60%, final answers to practical works 40%.

**ASSESSMENT FORM:** *exam*

**REFERENCES:**

- 1.Anton Doina, Nicu Carmen, 2005. Floricultură specială. Culturi floricole în câmp. Vol.I. Ed. Universitaria, Craiova.
- 2.Anton Doina, Nicu Carmen, Mandă Manuela, 2009. Floricultură specială. Culturi floricole în spații protejate. Vol. II. Ed. Universitaria, Craiova.
- 3.Şelaru Elena, 2002. Culturi pentru flori tăiate. Editura Ceres, București.
- 4.Toma F., 2009. Floricultură și Artă florală. Vol. 4. Specii utilizate pentru decorul parcurilor și grădinilor. Editura INVEL-Multimedia, București.
- 5.Toma F., 2009. Floricultură și Artă florală. Vol. 3. Specii utilizate ca plante în ghivece pentru decorul interioarelor. Editura INVEL-Multimedia, București.

## GENETICS

**CODE:** D29HCL429

**CREDITS:** 4

**COURSE COORDINATOR:** PhD. Lecturer Elena BONCIU

**YEAR / SEMESTER:** 2<sup>st</sup> Year / 2<sup>st</sup> Semester

**HOURS PER WEEK:** 2 hours of course, 2 hours of practical works

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** Fundamental discipline

**COURSE OBJECTIVES:** Understanding the genetic phenomenon characteristic of the horticultural species for deepening the concepts of genes, chromosomes, heredity, variability and possible use for practical purposes. Understanding mechanisms of the transmitting hereditary information and genetic recombination as a source of variability to plants. Knowledge, through scientifically substantiated information, of the structure and function of genetic material at the horticultural species.

**TOPICS:** The development of genetics as a science. Methods of research in genetics. Mendelian laws of heredity and their practical importance. The components of the cell with role in heredity of plants. The division of the cell, the manifestation of heredity and variability in the development of mitosis and meiosis at horticultural species. Genetic mechanisms of horticultural plant propagation. Nucleic acids and their role in heredity of plants. Genetic code and protein synthesis. Mutations and mutagenesis, source of variability in horticultural species. Improvement of horticultural species through the creation of transgenic organisms.

**TEACHING LANGUAGE:** Romanian

**KNOWLEDGE ASSESSMENT:** answers to exam 80%, final answers to Laboratory works 20%

**ASSESSMENT FORM:** exam

### REFERENCES

1. Bonciu Elena, 2014, Elemente de bioinginerie agricolă, Editura Sitech Craiova.
2. Bonciu Elena, Paula Iancu, 2011, Noțiuni de bioinginerie și biotehnologii. Strategii și aplicații, Editura Sitech Craiova.
3. Voica, N. et al., 2008, Manipularea informației genetice și biotehnologiile, Editura Sitech Craiova.
4. Voica, N. et al., 2007, Genetica în actualitate, Editura Universitaria Craiova.

## MICROPROPAGATION

**CODE:** D29HCL430

**CREDITS:** 4

**COURSE COORDINATOR:** Professor Dr. Sina Cosmulescu

**YEAR / SEMESTER:** : II<sup>nd</sup> year/ II<sup>nd</sup> semester

**HOURS PER WEEK:** Course – 2 hours / Seminar - 2 hours

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** domain

**COURSE OBJECTIVES:** Acquiring the knowledge required to apply *in vitro* techniques in plant breeding programs. Knowledge of *in vitro* techniques applications for plant cloning, germplasm conservation and for producing secondary metabolites.

**TOPICS:** Cultures of *in vitro* plant tissues (definition, history, fields of application). Tissue culture Laboratory. Operational phases in micropropagation techniques and morpho-physiological processes. Regeneration of plants from vegetative structures. Somatic embryogenesis. Creating and using variability. *In vitro* preservation.

**TEACHING LANGUAGE:** Romanian

**ASSESSMENT FORM:** Exam (60% written examination, 40% periodic evaluation)

### REFERENCES:

1. Cosmulescu Sina. 2002. Aplicații ale biotehnologiilor în pomicultură. Editura Reprograph.
2. Cachiță Cosma Doina. 1987. Metode *in vitro* la plantele de cultură – baze teoretice și practice. Editura Ceres.
3. Hoza D. 1997. Biotehnologii pomicole. Reprografia USAMV București.
4. Roșu Ana. 1999. Elemente de biotehnologii vegetale – aplicații în ameliorare. Editura Ametist 92.



## PRACTICE

**CODE:** D29HCL431

**CREDITS:** 4

**COURSE COORDINATOR:** PhD. Associate Professor Dinu Maria

**YEAR/ SEMESTER:** II<sup>nd</sup> YEAR / II<sup>st</sup> SEMESTER

**NUMBER OF HOURS PER WEEK:** 30 hours of practical works

**NUMBER OF WEEKS:**3

**SUBJECT TYPE :** main subject

**COURSE OBJECTIVES:** The purpose of practical training is to develop skills and competences appropriate to the activities of the horticulture field. Acquiring the applied skills of the knowledge obtained at the specialized courses, regarding the identification of the horticultural species, their cultivation, the recognition and control of diseases and pests, the soil microbiology, the harvesting and the preservation of the production.

**TOPICS:** Identification and control of the main diseases specific to horticultural plants; Identification and pest control of horticultural plants; Soil microbiological analysis; Biological features and culture technology of some floral species; Horticultural crop culture in vitro; Practical knowledge of the fields of activity in horticulture, floricultural plants, fruit trees, vegetables and vine under morphological, structural, multiplication and lifecycle, and practical skills training.

**TEACHING LANGUAGE:** Romanian

**KNOWLEDGE ASSESSMENT:** the practice book and the exam answers 100 %.

**ASSESSMENT FORM:** verification

**REFERENCES:**

1. Anton Doina, Nicu Carmen, 2005. Floricultură specială. Culturi floricole în câmp. Vol. I. Editura Universitaria, Craiova.
2. Mitrea, Rodi, 2006 – Main diseases of the major horticultural species, Universitaria Publishing House, Craiova.
3. I. Mitrea, C. Stan, O. Țucă, *Entomology*, vol. 1, Reprograph Publishing House, Craiova, 2010.
4. Hoza D.1997. Biotehnologii pomicole. Reprografia USAMV București.
5. Dragomir Felicia, Popa Daniela: " Microbiologie. Microbiologie practica". Ed. Universitaria, 2008.

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## PHYSICAL EDUCATION IV

**CODE:** D29HCL432

**CREDITS:** 1

**COURSE HOLDER:** Senior Lecturer, PhD, Daniel CIOCĂNESCU

**YEAR/SEMESTER:** 2nd year/ 1st semester

**NUMBER OF HOURS PER WEEK:** 1 hour practical course

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** main subject

**COURSE OBJECTIVES:** Discipline aims at forming the theoretical, practical and methodical skills for individual or group practice for a healthy lifestyle; Awareness of students about the role and importance of practicing physical exercise.

**THEMES:** Fitness - optimization of physical condition; utilitarian-applicative skills; Exercises for the development of general strength; Exercises for speed development; Exercises for the development of coordination capacity; Sports games: handball, table tennis; Bilateral games under similar competition conditions.

**LANGUAGE OF INSTRUCTION:** Romanian

**KNOWLEDGE ASSESSMENT:** Assessment through practical tests 80%, continuous assessment throughout semester 20%

**ASSESSMENT TYPE:** A/R

**BIBLIOGRAPHY:**

1. Barbu D., 2010. Fotbal. Curs de bază pentru studenți. Craiova, Edit. Universitaria
2. Dragomir, M., Albină, A., 2006. Atletism în școală, Ed. Universitaria, Craiova
3. Dragnea A. C-tin. și colab, 2006. Educație fizică și sport - teorie și didactică. Ed. FEST, București.
4. Ortanescu Dorina, (2008). Gimnastica – componentă a educației fizice școlare, Ed. Universitaria, Craiova

5. Orțănescu Dorina, 2008. Gimnastica- componentă a educației fizice școlare, Ed. Universitaria Craiova
6. Rață G., Ghe. Rață , 2008. Educația fizică și metodică predării ei – Editura PIM, Iași.
7. Ungureanu, A. ,2009. Metodica educației fizice și sportului - Editura Universitaria, Craiova.
8. Țifrea, C., 2002. Teoria și metodică atletismului - Editura Doreco, București.

## **THIRD YEAR HORTICULTURE FIRST SEMESTER**

### **GENERAL TRUCK FARMING I**

**CODE:** D29HCL533

**CREDITS:** 5

**COURSE COORDINATOR:** PhD. Associate Professor Dinu Maria

**YEAR/SEMESTER:** III<sup>nd</sup> year/ I<sup>nd</sup> semester

**HOURS PER WEEK:** Course – 2 hours/Seminar – 2 hours

**NUMBER OF WEEKS:** 14

**TYPE OF COURSE:** domain

**COURSE OBJECTIVES:** Knowledge of vegetable species, their food and economic importance and the development and use of conventional vegetable production technologies; The current state of the organization of vegetable growing in our country and in the world, as well as the way of utilization of the vegetable production.

**TOPICS:** Elements specific to the classic vegetable cultivation system, the current situation and the prospects for the development of vegetable growing. Biological and ecological characteristics of vegetable species. Knowledge of vegetable plants, grouping them according to the practical importance and the way of multiplication for their cultivation. Knowledge of the relations of vegetable plants with vegetation factors, in order to establish practical and applicative elements of classical culture technologies.

**TEACHING LANGUAGE :** Romanian

**KNOWLEDGE ASSESSMENT:** answers to exam 75%, control paper 25%

**ASSESSMENT FORM:** exam

**REFERENCES:**

1. Maria Dinu, 2008 .Legumicultură generală elemente practice .Editura Scrisul românesc,Craiova
2. Ruxandra Ciofu și colab.,2004. Tratat de legumicultură, Editura Ceres,Bucuresti
3. Chilom Pelaghia,2002. Legumicultura generală . Edit. Reprograph, Craiova
4. Chilom Pelaghia, Maria Dinu,2002. Ghid practic de Legumicultura. Editura Reprograph, Craiova,
5. Chilom Pelaghia, Dinu Maria,2003. Aplicații practice în legumicultura. Editura Reprograph, Craiova.

### **FRUIT GROWING**

**CODE:** D29HCL534

**CREDITS:** 5

**COURSE COORDINATOR:** Professor Dr. Sina Cosmulescu

**YEAR / SEMESTER:** III<sup>nd</sup> year/ I<sup>nd</sup> semester

**HOURS PER WEEK:** 2 hours of course, 2 hours of practical works

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** domain

**COURSE OBJECTIVES:** Knowledge of the particularities of the fruit tree ecosystem, of the relationships of the fruit species with the environmental factors and the other components of biocenosis. Assimilation of the technology for producing the fruit propagation material.

Assimilation of technology for the setting-up and maintenance of different types and systems of fruit tree plantations.

**TOPICS:** Definition, object, terminology, importance, history. Classification of fruit tree species. Morphology, anatomy and physiology of fruit tree plants. The individual life cycle of the fruit tree plants. Annual cycle of fruit tree plants. Initial and final pheno-phases of vegetative organs and fruit organs. Relationship between growth and fruit-setting in the individual and annual cycle of fruit tree plants.

**TEACHING LANGUAGE:** Romanian

**ASSESSMENT FORM:** Exam (60% written examination, 40% periodic evaluation)

**REFERENCES:**

1. Baci A. 2005. Pomicultură generală. Editura Universitaria, Craiova.
2. Baci A., Godeanu I., 2000. Producerea materialului săditor pomicol. Editura Universitaria.
3. Cosmulescu S. 2005. Protecția mediului în ecosisteme pomicole. Editura Sitech, Craiova.
4. Cosmulescu S. 2008. Ecologia sistemelor antropice pomicole. Editura Sitech, Craiova.
5. Godeanu I. 1981. Pomicultura generală. Îndrumător de lucrări practice. Reprografia Universității din Craiova.

## GENERAL VITICULTURE I

**CODE:** D29HCL535

**CREDITS:** 4

**COURSE COORDINATOR:** PhD. Associate Professor Dorin Constantin COSTEA

**YEAR / SEMESTER:** III<sup>rd</sup> Year / I<sup>th</sup> Semester

**HOURS PER WEEK:** 2 hours of course, 2 hours of practical works

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** domain

**COURSE OBJECTIVES:** Acknowledging the importance, the current and future status of viticulture both as science and practical business; Awareness of the morphological, anatomical and physiological traits of grapevines for the understanding of the mechanisms leading to the grapevine growth and ripening; Awareness of grapevine requirements under given climate factors with the purpose of establishing grapevine cultivating areas and production guidelines, which are required for the development of quality and efficient viticulture; Learning about climate categories in viticulture with view to linking climate factors with growth, ripening and maturation phases of grapevines.

**TOPICS:** Definitions, importance, particularities, History and development of the viticulture; Morphological and anatomical vine particularities; Biological and physiological vine particularities; Ecological particularities; Viticultural climatology; Establishment of varieties cultivation areas and production directions

**TEACHING LANGUAGE :** Romanian

**KNOWLEDGE ASSESSMENT:** answers to exam 80%, final answers to Laboratory works 20%

**ASSESSMENT FORM:** exam

**REFERENCES**

1. Costea Dorin Constantin, 2006. Regimul hidric al viței de vie, Editura Universitaria Craiova
2. Costea Dorin, 2016 Viticultură generală II – support de curs, Universitatea din Craiova
3. Cichi Daniela Doloris 2006. Modificările termice din ecosistemul viticol (cauze, efecte asupra vitei de vie, studii), Editura Universitaria Craiova
4. Olteanu I., 2000. Viticultură, Editura Universitaria Craiova
5. Olteanu I, Mărăcineanu LC, 2007. Agroecosistemele viticole și protecția mediului, Editura Sitech, Craiova

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## ORNAMENTAL ARBORICULTURE

**CODE:** D29HCL536

**CREDITS:** 4

**COURSE HOLDER:** PhD Senior Lecturer Gruia Marius

**YEAR/SEMESTER:** III<sup>rd</sup> Year / I<sup>st</sup> Semester

**NUMBER OF HOURS PER WEEK:** 2 hours of course, 2 hours of practical course

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** domain

**COURSE OBJECTIVES:** Knowledge of the importance of growing ornamental trees and bushes. Knowledge of the main biological, ecological, ornamental and technological features of ornamental trees and bushes in the sense of familiarizing with the possibilities of using in green areas.

**THEMES:** The biological bases of ornamental arboriculture. The technological bases of ornamental arboriculture. Production of planting material for ornamental species. The presentation of morphologic and landscape characters, ecology and ways of using ornamental wood species in green areas.

**LANGUAGE OF INSTRUCTION:** Romanian

**KNOWLEDGE INSTRUCTION:** 70 % of the exam answers, 30 % of the final answers to workshops

**ASSESSMENT TYPE:** exam

**BIBLIOGRAPHY:**

1. Iliescu Ana-Felicia, 2002. Cultura arborilor și arbuștilor ornamentali, Edit. Ceres.
2. Iliescu Ana Felicia 2003. Arboricultura Ornamentala, Editura Ceres, Bucuresti
3. Parnia P, s.a., 1992. Producerea, pastrarea si valorificarea materialului saditor pomicol si dendrologic, Ed. Ceres Bucuresti

## SPECIAL ENTOMOLOGY

**CODE:** D29HCL537

**CREDITS:** 4

**COURSE HOLDER:** Senior Lecturer, PhD, Cătălin STAN

**YEAR/SEMESTER:** 3 st year/ 2 st semester

**NUMBER OF HOURS PER WEEK:** 2 hours course, 2 hours practical course

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** main subject

**COURSE OBJECTIVES:** Knowledge of systematics, morphology, anatomy, biology, ecology, and pest control in major horticultural crops. Recognizing the main pests of horticultural plants and the damage they produce. Knowing appropriate plans for phytosanitary measures and remedies recommended in the prophylaxis and fight against the main pests of horticultural plants in conjunction with reducing environmental pollution in carrying out chemical treatments against pests.

**THEMES:** Biology, ecology, systematic and control of the polyphagous pests, Biology, ecology, systematic and control of the cereals pest, Biology, ecology, systematic and control of the legumes pests, Biology, ecology, systematic and control of the technical plants pests, Biology, ecology, systematic and control of the vegetable pests, , Biology, ecology, systematic and control of the fruits trees pests, Biology, ecology, systematic and control of the vines pests, Biology, ecology, systematic and control of the flowering and ornamental plants pests, Biology, ecology, systematic and control of the forest trees, Biology, ecology, systematic and control of the agri-food products stored pests, Harmful and useful vertebrates for agriculture.

**LANGUAGE OF INSTRUCTION:** Romanian

**KNOWLEDGE ASSESSMENT:** exam answers 80%, periodical assessment through practical tests 20%.

**ASSESSMENT TYPE:** exam

### **BIBLIOGRAPHY:**

1. MITREA I., 2005. Entomologie agricolă, Editura Universitaria Craiova.
2. MITREA I., C. STAN, O. ȚUCĂ, 2008. Entomologie vol. 1, Editura Reprograph Craiova.
3. MITREA I., C. STAN, O. ȚUCĂ, 2010. Entomologie generala, Editura Reprograph Craiova.
3. ROȘCA I., I. OLTEAN, I. MITREA, M. TALMACIU, C. STAN și colab., 2011, "Tratat de Entomologie generală și specială", Editura Alpha MDN, Buzău.
4. ROSCA I., C. STAN si colab., 2008. Protecția biodiversității în principalele agroecosisteme, Edit. TOTAL Publishing, București.
5. PERJU T., BIRICA S. 2006. Legislatie fitosanitara si de mediu. Edit. AcademicPres Bucuresti.
6. SIMERIA GH., 2001. Combaterea biologică în „sens strict” a patogenilor și dăunătorilor plantelor, Editura Mirton, Timișoara.
7. SIMERIA GH., 2003. Profilaxia și terapia integrată a bolilor și dăunătorilor plantelor, vol. II, Editura Mirton, Timișoara.
8. TONCEA I., STOIANOV R. 2002. Metode ecologice de protecție a plantelor. Edit. Științelor agricole, București.

## FITOPATOLOGIE SPECIALĂ

### II<sup>nd</sup> SEMESTER

## GENERAL TRUCK FARMING II

**CODE:** D29HCL533

**CREDITS:** 4

**COURSE COORDINATOR:** PhD. Associate Professor Dinu Maria

**YEAR/SEMESTER:** III<sup>nd</sup> year/ II<sup>nd</sup> semester

**HOURS PER WEEK:** Course – 2 hours/Seminar – 2 hours

**NUMBER OF WEEKS:** 14

**TYPE OF COURSE:** domain

**COURSE OBJECTIVES:** Knowledge of vegetable species, their food and economic importance and the development and use of conventional vegetable production technologies; The current state of the organization of vegetable growing in our country and in the world, as well as the way of utilization of the vegetable production.

**TOPICS:** The technology of producing vegetable seedlings; Establishment of vegetable crops in free field, protected and forced; Methods and epochs for the establishment of vegetable crops; General and special maintenance of vegetable species in the three crop systems; Harvesting and harvesting of vegetable production.

**TEACHING LANGUAGE :** Romanian

**KNOWLEDGE ASSESSMENT:** answers to exam 75%, control paper 25%

**ASSESSMENT FORM:** exam

**REFERENCES:**

1. Maria Dinu, 2008 .Legumicultură generală elemente practice .Editura Scrisul românesc,Craiova
2. Ruxandra Ciofu și colab.,2004. Tratat de legumicultură, Editura Ceres,Bucuresti
3. Chilom Pelaghia,2002. Legumicultura generală . Edit. Reprograph, Craiova
4. Chilom Pelaghia, Maria Dinu,2002. Ghid practic de Legumicultura. Editura Reprograph, Craiova,
5. Chilom Pelaghia, Dinu Maria,2003. Aplicații practice în legumicultura. Editura Reprograph, Craiova.

## **FRUIT GROWING II**

**CODE:** D29HCL642

**CREDITS:** 4

**COURSE COORDINATOR:** Professor Dr. Sina Cosmulescu

**YEAR / SEMESTER:** III<sup>nd</sup> year/ II<sup>nd</sup> semester

**HOURS PER WEEK:** 2 hours of course, 2 hours of practical works

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** domain

**COURSE OBJECTIVES:** Knowledge of the particularities of the fruit tree ecosystem, of the relationships of the fruit species with the environmental factors and the other components of biocenosis. Assimilation of the technology for producing the fruit propagation material. Assimilation of technology for the setting-up and maintenance of different types and systems of fruit tree plantations.

**TOPICS:** Ecology of fruit trees and fruit shrubs. Production of fruit propagating material. Land organization and planting of fruit trees. Maintenance of fruit tree plantations. Harvesting and capitalisation of fruit production.

**TEACHING LANGUAGE:** Romanian

**ASSESSMENT FORM:** Exam (60% written examination, 40% periodic evaluation)

**REFERENCES:**

1. Baci A. 2005. Pomicultură generală. Editura Universitaria, Craiova.
2. Baci A., Godeanu I., 2000. Producerea materialului săditor pomicol. Editura Universitaria.
3. Cosmulescu S. 2005. Protecția mediului în ecosisteme pomicole. Editura Sitech, Craiova.
4. Cosmulescu S. 2008. Ecologia sistemelor antropice pomicole. Editura Sitech, Craiova.
5. Godeanu I. 1981. Pomicultura generală. Îndrumător de lucrări practice. Reprografia Universității din Craiova.

## **GENERAL VITICULTURE II**

**CODE:** D29HCL643

**CREDITS:** 4

**COURSE COORDINATOR:** PhD. Associate Professor Dorin Constantin COSTEA

**YEAR / SEMESTER:** III<sup>rd</sup> Year / II<sup>nd</sup> Semester

**HOURS PER WEEK:** 2 hours of course, 2 hours of practical works

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** specialized

**COURSE OBJECTIVES:** Awareness of grapevine multiplying means and cultivation technologies with the purpose of promoting technologies aligned with durable development principles; Use of knowledge for accurate implementation of vineyard setup and maintenance works during early years through ripening; Learning about vineyard maintenance technology after ripening time.

**TOPICS:** Propagation of grapevines, Technological bases of fruit viticultural plantations setting up, Maintenance of young viticultural plantations; Care and exploitation of fruit viticultural plantations, Correction of trophic resources; Phytosanitary protection of viticultural plantations; Harvesting table grapes, Harvesting wine grapes

**TEACHING LANGUAGE :** Romanian

**KNOWLEDGE ASSESSMENT:** answers to exam 80%, final answers to Laboratory works 20%

**ASSESSMENT FORM:** exam

**REFERENCES:**

1.D,C Costea, Daniela Cichi, 2008. Cultura viței de vie in condițiile modificărilor climatice, edit Arves, Craiova.

2.Costea Dorin Constantin, 2006. Regimul hidric al viței de vie, Editura Universitaria Craiova.

3.Costea Dorin, 2016 Viticultură generală II – support de curs, Universitatea din Craiova.

4.Ion Olteanu, Daniela Cichi, D.C.Costea, C.L. Mărăcineanu, 2002. Viticultură specială – zonare, ampelografie, tehnologii specifice, Editura Universitaria Craiova.

5.Olteanu I., 2000. Viticultură, Editura Universitaria Craiova.

## LANDSCAPE ARCHITECTURE

**CODE:** D29HCL644

**CREDITS:** 5

**COURSE HOLDER:** PhD. Senior Lecturer Marius Catalin GRUIA

**YEAR/SEMESTER:** III<sup>rd</sup> year/ II<sup>nd</sup> semeste

**NUMBER OF HOURS PER WEEK:** 2 hours of course, 1 hour of practical course, 1 hour of project

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** specialized

**COURSE OBJECTIVES:** Knowledge of the specialized terminology and the principles regarding the decoration of green areas. Knowledge of the main types of green areas and their features. Acquire the fundamental notions regarding the theory, art and technique of landscape. The general presentation of the notions regarding the projection, decoration and maintenance of green areas.

**THEMES:** The importance and functions of green spaces. Evolution and styles in landscape architecture. Classification of green spaces. Composition principles used in Landscape Architecture. Structural elements of green spaces. General concepts for designing green spaces. General notions about green spaces arrangement and maintenance.

**LANGUAGE OF INSTRUCTION:** Romanian

**KNOWLEDGE ASSESSMENT:** 70 % of exam answers, 30% of final answers to workshops

**ASSESSMENT TYPE:** exam

**BIBLIOGRAPHY:**

1.Iliescu Ana-Felicia, 2002.Arhitectura Peisageră, Edit.Ceres 2002.

2.Iliescu Ana Felicia 2003.Arboricultura Ornamentală, Editura Ceres, Bucuresti

3.Peter Mc Hoy, 2008.Amenajarea grădinii, Ghid complet al amenajării unei grădini, Edit Aquila.

4The Royal Horticultural Society, 2008. Enciclopedia of gardening, Editor-Christopher Brickellx.

## LAND IMPROVEMENTS

**CODE:** D29HCL645

**CREDITS:** 5

**COURSE HOLDER:** Lecturer, PhD, Mihaela BĂLAN

**YEAR/SEMESTER:** 3<sup>rd</sup> year/ 2<sup>nd</sup> semester

**NUMBER OF HOURS PER WEEK:** 2 hours of course, 1 hour of practical course, 1 hour of project

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** main subject

**COURSE OBJECTIVES:** Knowledge and understanding of the importance of land improvement works; Knowledge and understanding of the phenomena related to the drainage and drainage of agricultural lands, the arrangement of accumulation basins and irrigation systems, dams, etc. Knowledge of methods of design, execution and maintenance of land improvement works.

**THEMES:** Object of discipline. The importance and features of land improvement works. Brief history of land improvement improvements. Soil erosion. Definitions, importance and spread of the erosion process in the world and in Romania. Mechanism of water erosion process. Determinants of soil erosion. Damage caused by soil erosion. Studies necessary for the preparation of soil erosion control projects. Mapping and research of soil erosion. Preventing and combating soil erosion on sloping arable land. Prevention and control of soil erosion in vineyards. Preventing and combating soil erosion in fruit plantations. Preventing and combating deep erosion. Insect erosion formations, their development and work to combat deep erosion. Preventing and combating wind erosion. Land landslides. Measures to prevent and combat them. Storage tanks for agriculture. Classification of storage basins. Components of an accumulation. Studies necessary for the design of storage basins. Conditions for the location of accumulation basins. Determining the water volume of the storage tank. Dam. Classification of dams. Main issues to solve when designing dams made of soil. Studies needed to prepare irrigation projects. Water consumption of agricultural crops. Watering methods. Irrigation systems - types of irrigation facilities. Water sources for irrigation. Irrigation water quality. Operation and maintenance of irrigation systems. Landfilling of agricultural land. Draining through open channels. Drainage drainage. Special drainage methods.

**LANGUAGE OF INSTRUCTION:** Romanian

**KNOWLEDGE ASSESSMENT:** exam answers 50%, final answers for workshops 30%, periodical assessment through practical tests 20%

**ASSESSMENT TYPE:** colloqui

**BIBLIOGRAPHY:**

1. Bălan Mihaela, 2017. Îndrumător de lucrări practice și de elaborare a proiectului de combatere a eroziunii solului. Ed. Sitech. Craiova.
2. Bălan Mihaela, Craioveanu Ghe., Carigoiu Violeta, 2011. Aspecte privind eroziunea solurilor din Județul Gorj. Ed. Universitaria. Craiova.
3. Lulea C., Popescu C.V. și colab. 2009. Îmbunătățiri funciare. Ed. IV. Editura Universitaria. Craiova.
4. Lulea C., 2000. Ghid pentru proiectarea și executarea unor lucrări antierozionale pe terenurile situate în pantă. Editura Universitaria. Craiova.
5. Lulea C., 2000. Ghid pentru proiectarea și executarea lucrărilor de desecări, îndiguiri, acumulări de apă și irigații. Editura Universitaria. Craiova.
6. Savu. P, Bucur D., 2002. Organizarea și amenajarea teritoriului agricol cu lucrări de îmbunătățiri funciare. Editura „Ion Ionescu de la Brad” Iași.

## HORTICULTURAL PLANT BREEDING I

**CODE:** D29HCL646

**CREDITS:** 4

**COURSE COORDINATOR:** Prof. Dr. Mihai BOTU

**YEAR/SEMESTER:** III rd/II nd

**HOURS PER WEEK:** 2 hours of course, 2 hours of laboratory

**NUMBER OF WEEKS:** 14

**TYPE OF COURSE:** Domain

**COURSE OBJECTIVES:** Knowledge of the role, importance and need for genetic improvement of horticultural plants in ensuring food safety and sustainable human society. The role and importance of horticultural genetic resources for use in plant breeding. Establishment of specific breeding objectives and horticultural plant genetic improvement. Conventional and modern methods of transformation and selection of new genotypes and their implications.

**TOPICS:** Importance and role of plant breeding. Current situation and future national and global trends. Cytogenetic bases, ontogenetic and reproduction of horticultural plant breeding. General and specific objectives of horticultural plant breeding. Horticultural genetic resources - role and importance; collection, evaluation, conservation and use of genetic resources. Conventional methods used in horticultural plant breeding (selection, hybridization, selfing, mutagenesis, poliploidy). Modern methods used in horticultural plant breeding. Genetic engineering.

**TEACHING LANGUAGE:** Romanian

**KNOWLEDGE ASSESSMENT:** 75% of the final grade represent the response to the written theoretical questions and 25% of the final grade the answers to practical laboratory questions.

**ASSESSMENT FORM:** Colloquium

**REFERENCES:**

1. Acquah G. 2012. Principles of Plant Genetics and Breeding, 2nd Edition. Wiley-Blackwell.
2. Botu I., 1994. Ameliorarea plantelor horticole - Curs Litografiat. Universitatea din Craiova.
3. Botu I., Botu M., 1999. Ameliorarea plantelor horticole. Îndrumător de lucrări practice, vol. I. Universitatea din Craiova.
4. Botu M, 2008. Metode convenționale și moderne în ameliorarea plantelor horticole. Ed.Conphys, Rm.Vâlcea.
5. Cociu V., Botu I., Șerboiu L., 1999. Progrese în ameliorarea plantelor horticole din România. Vol. I - Pomicultura,. Ed. Ceres, București.
6. Poehlman M.J., Sloper A.D., 1995. Breeding Field Crops. Iowa State Press. Fourth Edition, USA.

## SPECIALTY PRACTICE

**CODE:** D29HCL647

**CREDITS:** 4

**COURSE COURSE:** Prof. univ. Dr. Gheorghe ACHIM

**YEAR / SEMESTER:** 3rd / 2nd Semester

**NUMBER OF HOURS/WEEK:** 30 hours - practical

**NUMBER OF WEEKS:** 3

**TYPE OF COURSE:** specialized discipline

**OBJECTIVES OF PRACTICE:** The practical training aims to apply the theoretical knowledge acquired in specialized courses in the field of horticulture; Recognition of species and varieties in order to apply you hnologiilor field; Application of technological sequences depending on species or variety particularities.

**THEMATICS OF THE COURSE:** Cuts training, maintenance and fruiting species horticultural seeds; Training, maintenance and fructifying groves in stormy horticultural species; Cuts training, maintenance and fruiting shrubs and trees from nuts; Training, maintenance and fructification in vineyards; Applying green operations to horticultural species (vegetables, vines, fruit trees, dendrological plants, flowers, etc.); Working on seasonal horticultural species (seeding, planting, transplanting, pinching, books in it, grafted, etc.).

**LANGUAGE:** Romanian

**KNOWLEDGE MANAGEMENT AND TIN P met:** examination practice - 90% and the drawing - completing the specification of the practice - 10%.

**ASESSMENT METHODS:** practical examination.

**REFERENCES:**

1. Achim Gh., 2016. Pomologie (note de curs), Univ. din Craiova.
2. Cepoiu N., ș.a. 2005. Pomicultura practică , Editura Ceres, București;
3. Cichi Daniela Doloris, ș.a., 2010. Ghid ampelografic al soiurilor de struguri pentru masă. Editura Universitaria Craiova.
4. Cosmulescu Sina., Baci A., 2003. Îndrumător pentru lucrările practice la disciplina de Pomologie .Tipografia Universității din Craiova.
5. Drăgănescu M., 2002. Pomologie. Ed. Mitron, Timișoara;
6. Giorgota M., Nicolae L., 2010. Legumicultură specială, Ed. Reprograph Craiova;
7. Isac Il., ș.a. 2001. Ghidul micului pomicultor . Ed. Pământul Pitești;
8. Negrilă A., 1983. Pomicultura pe înțelesul tuturor. Editura Ceres, București;
9. Nicu Carmen, Anton Doina., 2004. Floricultură generală. Îndrumător de lucrări practice. Ed. Reprograph Craiova.
10. Radu Gh., 1997. Legumicultură specială. Îndrumător pentru lucrări practice E.U.C Craiova.
11. Șeiculescu M., ș.a. 2004. Tehnologie modernizată de producere a vițelor altoite în câmp. Ed.Conphys. Rm.Vâlcea .



## FLORAL ART

**CODE:** D29HCL539

**CREDITS:** 4

**COURSE HOLDER:** Ph.D, Senior Lecturer, Manuela MANDĂ

**YEAR/SEMESTER:** III<sup>rd</sup> year/ II<sup>st</sup> semester

**NUMBER OF HOURS PER WEEK:** 1 hour course, 1 hour practical course

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** domain

**COURSE OBJECTIVES:** Knowledge of the history of floral art; the materials used in the creation of floral arrangements; the styles, principles and ways of arranging flowers.

**THEMES:** The art of arranging flowers in different historical epochs. The vegetal material used in floral arrangements. Harvesting, maintenance and processing of fresh or dry vegetal material. Pots, materials, accessories and techniques used in floral art design. Western floral art. – the principles of floral composition and the used styles. Eastern floral art. – basic principles of Ikebana arrangements.

**LANGUAGE OF INSTRUCTION:** Romanian

**KNOWLEDGE ASSESSMENT:** 50% of answers to exam; 20% of involvement in practical activities, 30% of drawing up a project.

**ASSESSMENT TYPE:** colloquy

### BIBLIOGRAPHY

1. Anton Doina, 2003. Arta aranjarii florilor. Ed. Reprograph Craiova.
2. Anton Doina, 2003. Floricultura generală. Ed. Universitaria Craiova.
3. Anton Doina, Carmen Nicu, Manuela Manda, 2007. Floricultura speciala. Vol. II. Culturi floricole în spații protejate. Editura Universitaria Craiova.
4. Cantor Maria, Erzsebet Buta, 2010. Artă florală, Ed. Todescu, Cluj – Napoca.
5. Selaru Elena, 2004. Arta Florala. Ed Ceres.
6. Toma Florin, 2009. Floricultura și Artă florală; vol. V: Artă florală; Ed. Invel Multimedia.

## FOURTH YEAR HORTICULTURE

### FIRST SEMESTER

#### SPECIAL VEGETABLE GROWING I

**CODE:** D29HCL748

**CREDITS:** 5

**COURSE HOLDER:** Senior Lecturer, PhD, Nicolae LASCU

**YEAR/SEMESTER:** IV<sup>th</sup> year/ I<sup>th</sup> semester

**NUMBER OF HOURS PER WEEK:** 2 hours course, 2 hours practical course

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** main subject

**COURSE OBJECTIVES:** Knowledge of vegetable species and cultivation in order to develop and use production technologies in different crop systems (unprotected field, protected and fortified crop) for a sustainable horticulture. Knowledge of aspects regarding seed production technologies and biological material for cultivation of vegetable species.

**THEMES:** Knowledge and deepening of botanical and biological particularities, as well as the ecological requirements of vegetable species, in relation to cultivation technologies. Establishing differentiated technologies according to botanical and biological particularities of vegetable species, ecological factor values, and cultivation systems. Botanical and biology features, ecological requirements, crop technology and seed production of tuberous roots and tubers vegetable species, vegetable species of the onion group, the vegetable species from which the leaves are used, the vegetable species of cabbage, and the vegetable species from which they are consumed use the pods, capsules and seeds (leguminous species)

**LANGUAGE OF INSTRUCTION:** Romanian

**KNOWLEDGE ASSESSMENT:** exam answers 70%, final answers of test for practical laboratory work 30%.

**ASSESSMENT TYPE:** exam

**BIBLIOGRAPHY:**

1. Ciofu Ruxandra și colab. Tratat de Legumicultura, Edit. Ceres, București, 2004.
2. Giorgota M., Nicolae L. Legumicultură specială, Vol. 1, Edit. REPROGRAF, Craiova, 2010.
3. Indrea D., și colab. Cultura legumelor, Edit. Ceres, București, 2007.
4. Horgoș Arsenie și colab. Elemente de inginerie tehnologică în legumicultură Vol. II Fertilizarea, irigarea și protecția fitosanitară a culturilor de legume. Edit. Eurostampa, Timișoara, 2015.
5. Horgoș Arsenie și colab. Elemente de inginerie tehnologică în legumicultură Vol. III Aspecte tehnologice practice de producere a răsadurilor și de cultivare a speciilor de legume în diferite sisteme de cultură. Edit. Eurostampa, Timișoara, 2015.
6. Popescu V., Popescu Angela. Cultura în sere, solarii și răsadnițe, Edit. Ceres, București, 2012.

## POMOLOGY I

**CODE:** D29HCL749

**CREDITS:** 5

**COURSE COORDINATOR:** Prof. PhD. Gheorghe ACHIM

**YEAR / SEMESTER:** IV / semester I

**HOURS PER WEEK:** 2 hours course, 2 hours practical work

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** specialty

**COURSE OBJECTIVES:** Study of trees organographies, as identifier element of varieties and their behavior in the growth and fruiting process. The requirements of different species of fruit to biotype factors in order of their environmentally and zoning. Knowledge of particularities and intensity of physiological processes in connection with varieties of environmental factors and methods to optimize their relationship through differentiated technologies of cultivated species in areas with temperate climate in order to obtain maximum yields of good quality fruits at the minimum prices. Study of fruit rootstocks, behavior of varieties on different rootstocks, compatibility and force – of rootstock-variety combination. Highlighting the qualities and faults of varieties of fruit tree.

**TOPICS:** The variety and assortment – determinant factors in production area. Research methods used in the study of varieties and the effects of differentiated technologies; Importance, current situation and perspective on the world and national pome species (apple, pear, quince, etc.). Biological and technological peculiarities of pome species (apple, pear, quince, etc.).

**LANGUAGE OF TEACHING:** Romanian

**KNOWLEDGE ASSESSMENT:** answers to exam - 80%, final answers to practical laboratory work - 20%.

**FORM OF ASSESSMENT:** EXAM

**REFERENCES:**

1. Achim Gh., 2010. Pomologie (note de curs), Universitatea din Craiova;
2. Cosmulescu Sina, Baci A., 2003. Îndrumător pentru lucrări practice la disciplina Pomologie, Tipografia Universității din Craiova;
3. Drăgănescu Em., 2002. Pomologie, Editura Mirton - Timișoara, România;
4. Ghena N., Braniște N., 2003. Cultura specială a pomilor, Editura Matrixrom, București, România;
5. Popescu M. ș.a., 1992. Pomicultură (generală și specială), Editura Didactică și Pedagogică, RA, București, România.

## AMPELOGRAPHY I

**CODE:** D29HCL750

**CREDITS:** 5

**COURSE HOLDER:** Associate Professor Daniela Doloris CICHI, PhD

**YEAR/SEMESTER:** IV<sup>nd</sup> Year / I<sup>st</sup> Semester

**NUMBER OF HOURS PER WEEK:** 2 hours course, 2 hours practical works

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** specialized

**COURSE OBJECTIVES:** Knowledge of *Vitis* varieties and species in order to develop and use sustainable viticulture technologies; Knowledge of vineyard areas and production directions of varieties for the development of a quality viticulture and economic efficiency;

**THEMES:** Ampelography as a science (definitions, terminology, history, objectives, links of ampelography with other sciences); The variety with its genetic, agrobiological, productive and quality attributes; Biotype, clone, vineyard assortment; Methodologies for description, recognizing and identifying of *Vitis* varieties and species, in accordance with OIV (International Office of the Vine and Wine), U.P.O.V. (International Union for the Protection of New Varieties of Plants) and I.P.G.R.I. (International Plant Genetic Resources Institute); Types of ampelographic descriptors; Zoning of the Romanian viticultural area according to the ecological offer.

**LANGUAGE OF INSTRUCTION:** Romanian

**KNOWLEDGE ASSESSMENT:** answers to exam -70 %, analysis of student products and interventions in laboratory activities - 10 %, participate in making and presenting the portfolio (Reports/homework/projects) - 20 %

**ASSESSMENT FORM:** Exam

**REFERENCES:**

1. Cichi Daniela Doloris, Popa Camelia, Necula Cezarina, 2010, Ghid ampelografic al soiurilor de struguri pentru masă . Editura Universitaria, Craiova.
2. Cichi Daniela Doloris, D,C Costea, 2008, Soiuri de viță-de-vie cultivate și cultivabile în România, Editura Arves, Craiova, 300 p.;
3. Cotea V.D., Barbu N.N., Grigorescu C.C., Cotea V.V., 2007, Podgoriile și vinurile României, Ed. Academiei Române, București, 390 p.
4. Popa A., Dicu C., 2010, Viticultura și vinurile României, Edit. Alma, Craiova;
5. Olteanu I., Daniela Cichi, Costea D., Mărcineanu L., 2002, Viticultură specială (ampelografie, zonare, tehnologii specifice), Ed. Universitaria Craiova, 2002, 473 p

## HORTICULTURAL PLANT BREEDING II

**CODE:** D29HCL751

**CREDITS:** 4

**COURSE COORDINATOR:** Prof. Dr. Mihai BOTU

**YEAR/SEMESTER:** IV<sup>th</sup>/ Ist

**NUMBER OF HOURS PER WEEK:** 2 hours of course, 2 hours of laboratory

**NUMBER OF WEEKS:** 14

**TYPE OF COURSE:** Domain

**COURSE OBJECTIVES:** Knowledge of the most important breeding results of major horticultural crops cultivated in Romania and abroad. Knowledge and learning the peculiarities of the production of horticultural seed and planting material of superior biological categories according to the Romanian legislation and EU directives.

**TOPICS:** Organization and management of breeding works in horticultural crops. Breeding of vinegrapes, apples, plums, tomatoes, peppers, cabbage, onions, roses, carnations - current national and international requirements, guidelines and trends in improving the vinegrapes, apples, plums, tomatoes, peppers, cabbage, onions, roses and carnations cultivars. Biological basis and breeding objectives, cytology, germplasm resources. Production of seed and planting material of superior biological categories. Protection of plant breeding rights.

**TEACHING LANGUAGE:** Romanian

**KNOWLEDGE ASSESSMENT:** 75% of the final grade represent the response to the written theoretical questions and 25% of the final grade the answers to practical laboratory questions.

**ASSESSMENT FORM:** Colloquium

**REFERENCES:**

1. Acquah G. 2012. Principles of Plant Genetics and Breeding. 2nd Edition. Wiley-Blackwell.
2. Botu I., 1994. Ameliorarea plantelor horticole - Curs Litografiat. Universitatea din Craiova.

3. Botu I., Botu M., 1999. Ameliorarea plantelor horticole. Îndrumător de lucrări practice, vol. I., Universitatea din Craiova.
4. Botu M., 2008. Metode convenționale și moderne în ameliorarea plantelor horticole. Ed. Conphys, Rm. Vâlcea.
5. Cociu V., Botu I., Șerboiu L., 1999. Progrese în ameliorarea plantelor horticole din România. Vol. I - Pomicultura., Ed. Ceres, București.
6. Janick J., Moore. J.N., 1975. Advances in Fruit Breeding. Purdue University Press, USA.
7. SESTRĂȘ, R., 2004, AMELIORAREA speciilor horticole, Ed. AcademicPres, Cluj-Napoca.

## MANAGEMENT

**CODE:**D29HCL752

**CREDITS:** 3

**COURSE COORDINATOR:** PhD. Associate Professor. Radu Lucian PÂNZARU

**YEAR / SEMESTER:** IV<sup>st</sup> Year / I<sup>st</sup> Semester

**HOURS PER WEEK:** 1 hours of course, 1 hours of seminar

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** field

**COURSE OBJECTIVES:** Knowledge of the notions of the economic agent in terms of its organization, its functionality, the way of implementation of the modern management techniques and methods.

**TOPICS:** The role of the food industry in the production of food for human consumption, Introductory management, Running management in modern management, Production capacity and optimal ways of use in the food industry, Creation and development of technical-material basis in the food industry, Organization and management of production Nutrition, Organization of food industry production by types of enterprises, Technical and economic forecasting in the food industry, Human resource management in the food industry, Labor normalization in the food industry

**TEACHING LANGUAGE :** Romanian

**KNOWLEDGE ASSESSMENT:** answers to exam 70%, final answers to seminars 30%

**ASSESSMENT FORM:** verification

### REFERENCES

1. Koontz h., 1984, Management, Mc. Graw Hill Book Company;
2. Manolescu Gh., 1995, Management financiar, Editura Economică, București;
3. Neagu Cibela , 2004, Managementul firmei, Editura Tritonic, București;
4. Mullis L., 1995, Management and Organisational Behaovir – Pitman, London;
5. Oancea Margareta, 2007, Managementul gestiunea economică și strategia unităților agricole, Editura Ceres, București;
6. Pană D., Pană D. D., 1995, Îndrumător de lucrări practice pentru Management și Marketing în industria alimentară, Editura Sitech, Craiova;
7. Pânzaru R.L., Medelete D. M., Ștefan G., 2007, Elemente de management și marketing în agricultură, Editura Universitaria, Craiova;
8. Pânzaru R. L., 2017, Management – note de curs, Universitatea din Craiova;
9. Ursachi I., 2001, Management, Editura ASE, București;
10. X X X, 2001, Ghidul indicatorilor economici, Editura Teora, București.

## OENOLOGY I

**CODE:**D29HCL753

**CREDITS:** 4

**COURSE COORDINATOR:** PhD. Associate Professor. Constantin BADUCA

**YEAR/SEMESTER:** IV<sup>st</sup> Year/I<sup>st</sup> Semester

**HOURS PER WEEK:** 2 hours of course, 2 hours of practical works

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** specialized

**COURSE OBJECTIVES:** Knowledge of the biological, biochemical and technological bases of modern winemaking

**TOPICS:** The raw material used in the wine industry; The technical and material basis of the winery

industry; The grape processing technology and the production of must; The chemical and biochemical composition of the grape must; The microflora specific to the wine industry; Antiseptic and antioxidant substances used in the wine industry; Biochemical and biophysical nature phenomena that occur in the conversion of must to wine; The chemical composition of wines

**TEACHING LANGUAGE:** Romanian

**KNOWLEDGE ASSESSMENT:** answers to exam 80%, final answers to Laboratory works 20%

**ASSESSMENT FORM:** exam

**REFERENCES**

1. Băducă Cîmpeanu C., 2016. Oenologie. Bazele științifice și tehnologice ale vinificației. Editura Universitaria, Craiova
2. Peynaud. E., Blouin J., 2006. Connaissance et travail du vin. 4<sup>e</sup> édition. Édition Dunod, Paris.
3. Ribereau Gayon P., Dubourdieu., Doneche B., Lonvaud A., 2005. Traité d'œnologie. Tome I. Microbiologie du vin. Vinifications. Édition Dunod, Paris.
4. Ribereau Gayon P., Glories Y., Maujean A., Dubourdieu D., 2012. Traité d'œnologie. Tome II. Chimie du vin. Stabilisation et traitements. Édition Dunod, Paris.

## **TECHNOLOGY OF HORTICULTURAL PRODUCTS (FRUITS AND VEGETABLES) I**

**CODE:** D29HCL754

**CREDITS:** 4

**COURSE COORDINATOR:** PhD. Associate Professor. Mira Elena IONICĂ

**YEAR / SEMESTER:** IV<sup>th</sup> Year / I<sup>st</sup> Semester

**HOURS PER WEEK:** 2 hours of course, 2 hours of practical works

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** specialized

**COURSE OBJECTIVES:** Knowledge of the main directions of the fresh preservation of the horticultural products

**TOPICS:** Characterization of horticultural production. The main properties of the fruits and vegetables. Metabolic processes occurring in fruits and vegetables after harvesting. The quality of the fruits and vegetables. Methods for determining the quality of the fruits and vegetables. Knowledge of the technological flow of fresh preservation of the fruits and vegetables by species. Develop an action plan and implement it in relation to the tasks defined by the job description

**TEACHING LANGUAGE :** Romanian

**KNOWLEDGE ASSESSMENT:** answers to exam 70%, final answers to Laboratory works 30%

**ASSESSMENT FORM:** exam

**REFERENCES:**

1. Mira Elena Ionică, 2013. Preservation of agricultural and horticultural raw materials used in the food industry, Universitaria Publishing House.
2. Mira Elena Ionică, 2014. Methods of analyzing and controlling the quality of fresh and diverse processed fruits and vegetables, Universitaria Publishing House.

## **II<sup>nd</sup> SEMESTER**

### **SPECIAL VEGETABLE GROWING II**

**CODE:** D29HCL855

**CREDITS:** 4

**COURSE HOLDER:** Senior Lecturer, PhD, Nicolae LASCU

**YEAR/SEMESTER:** IV<sup>th</sup> year/ II<sup>th</sup> semester

**NUMBER OF HOURS PER WEEK:** 2 hours course, 2 hours practical course

**NUMBER OF WEEKS:** 10

**COURSE TYPE:** main subject

**COURSE OBJECTIVES:** Knowledge of vegetable species and cultivation in order to develop and use production technologies in different crop systems (unprotected field, solariums and greenhouse) for a

sustainable horticulture. Knowledge of aspects regarding seed production technologies and biological material for cultivation of vegetable species.

**THEMES:** Botanical and biological particularities, ecological requirements, the technology of cultivation and seeds production of the Solanaceae Family of vegetable species from which fruits are consumed. Botanical and biology features, ecological requirements, crop technology and seed production of Cucurbitaceae family of vegetable. Cultivation of vegetable species used for flavoring and seasoning. Cultivation of perennial vegetable species

**LANGUAGE OF INSTRUCTION:** Romanian

**KNOWLEDGE ASSESSMENT:** exam answers 60%, final answers of test for practical laboratory work and activities such as projects 40%.

**ASSESSMENT TYPE:** exam

**BIBLIOGRAPHY:**

1. Ciofu Ruxandra și colab. – Tratat de Legumicultura, Edit. Ceres, București, 2004.
2. Dumitrescu M., și colab. – Producerea legumelor, Tipar ARTPRINT, București, 1998
3. Giorgota M., Nicolae L. - Legumicultură specială, Vol. 1, Edit. REPROGRAF, Craiova, 2010.
4. Indrea D., și colab. – Cultura legumelor, Edit. Ceres, București, 2007
5. Horgoș Arsenie și colab. – Elemente de inginerie tehnologică în legumicultură Vol. II Fertilizarea, irigarea și protecția fitosanitară a culturilor de legume. Edit. Eurostampa, Timișoara, 2015
6. Horgoș Arsenie și colab. – Elemente de inginerie tehnologică în legumicultură Vol. III Aspecte tehnologice practice de producere a răsadurilor și de cultivare a speciilor de legume în diferite sisteme de cultură. Edit. Eurostampa, Timișoara, 2015
7. Popescu V., Popescu Angela – Cultura în sere, solarii și răsadnițe, Edit. Ceres, București, 2012.

## POMOLOGY II

**CODE:** D29HCL856

**CREDITS:** 4

**COURSE COORDINATOR:** Prof. PhD. Gheorghe ACHIM

**YEAR / SEMESTER:** IV / semester I

**HOURS PER WEEK:** 2 hours course, 2 hours practical work

**NUMBER OF WEEKS:** 14

**COURSE TYPE:** specialty

**COURSE OBJECTIVES:** Study of trees organographies, as identifier element of varieties and their behavior in the growth and fruiting process. The requirements of different species of fruit to biotype factors in order of their environmentally and zoning. Knowledge of particularities and intensity of physiological processes in connection with varieties of environmental factors and methods to optimize their relationship through differentiated technologies of cultivated species in areas with temperate climate in order to obtain maximum yields of good quality fruits at the minimum prices. Study of fruit rootstocks, behavior of varieties on different rootstocks, compatibility and force – of rootstock-variety combination. Highlighting the qualities and faults of varieties of fruit tree.

**TOPICS:** The importance, the current and future situation in the world and in our country, biological and technological features of stone species (plum, apricot, peach, sweet cherry and sour cherry). The importance, the current and future situation in the world and in our country, biological and technological features of nuts (walnut, hazelnut, chestnut, almond). The importance, the current and future situation in the world and in our country, biological and technological features of forest fruits (strawberry, raspberry, blackberry, currant, gooseberry, blueberry, seabuckthorn, elderberry, roses for petals). The importance, the current and future situation in the world and in our country, biological and technological features of subtropical species (fig, lemon, orange).

**LANGUAGE OF TEACHING:** Romanian

**KNOWLEDGE ASSESSMENT:** answers to exam - 80%, final answers to practical laboratory work - 20%.

**FORM OF ASSESSMENT:** EXAM

**REFERENCES:**

1. Achim Gh., 2010. Pomologie (note de curs), Universitatea din Craiova;
2. Cosmulescu Sina, Baci A., 2003. Îndrumător pentru lucrări practice la disciplina Pomologie, Tipografia Universității din Craiova;

3. Drăgănescu Em., 2002. Pomologie, Editura Mirton - Timișoara, România;
4. Ghena N., Braniște N., 2003. Cultura specială a pomilor, Editura Matrixrom, București, România;
5. Popescu M. ș.a., 1992. Pomicultură (generală și specială), Editura Didactică și Pedagogică, RA, București, România.

## AMPELOGRAPHY II

**CODE:** D29HCL857

**CREDITS:** 4

**COURSE HOLDER:** Associate Professor Daniela Doloris CICHI, PhD

**YEAR/SEMESTER:** IV<sup>nd</sup> Year/ II<sup>st</sup> Semester

**NUMBER OF HOURS PER WEEK:** 2 hours course, 2 hours practical works

**NUMBER OF WEEKS:** 10

**COURSE TYPE:** specialized

**COURSE OBJECTIVES:** Description and knowledge of varieties of vines cultivated in Romania; Knowledge of differentiated crop technologies according to the biological characteristics and ecological requirements of vine varieties, as well as the ecological offer of different wine areas in Romania.

**THEMES:** Taxonomic classification of family *Vitaceae*; Table grapes varieties cultivated in Romania and their crop specificities (morphological characteristics, description of characteristics relating to adjustment to climate, resistance to parasites and physiological accidents, the agricultural and technological characteristics and quality of products); Seedless grapes cultivated in Romania; Grape varieties for white wines cultivated in Romania; Grape varieties for rosé and red wines cultivated in Romania; Grape varieties for aromatic wines cultivated in Romania.

**LANGUAGE OF INSTRUCTION:** Romanian

**KNOWLEDGE ASSESSMENT:** answers to exam -70 %, analysis of student products and interventions in laboratory activities - 15 %, participate in making and presenting the portfolio (Reports/homework/projects) - 15 %

**ASSESSMENT FORM:** Exam

**REFERENCES:**

1. Cichi Daniela Doloris, Popa Camelia, Necula Cezarina, 2010, Ghid ampelografic al soiurilor de struguri pentru masă . Editura Universitaria, Craiova.
2. Cichi Daniela Doloris, D,C Costea, 2008, Soiuri de viță-de-vie cultivate și cultivabile în România, Editura Arves, Craiova, 300 p.;
3. Cotea V.D., Barbu N.N., Grigorescu C.C., Cotea V.V., 2007, *Podgoriile și vinurile României*, Ed. Academiei Române, București, 390 p.
4. Popa A., Dicu C., 2010, Viticultura și vinurile României, Edit. Alma, Craiova;
5. Olteanu I., Daniela Cichi, Costea D., Mărăcineanu L., 2002, Viticultură specială (ampelografie, zonare, tehnologii specifice), Ed. Universitaria Craiova, 2002, 473 p

## OENOLOGY II

**CODE:** D29HCL858

**CREDITS:** 3

**COURSE COORDINATOR:** PhD. Associate Professor. Constantin BADUCA

**YEAR/SEMESTER:** IV<sup>st</sup> Year/ II<sup>st</sup> Semester

**HOURS PER WEEK:** 2 hours of course, 2 hours of practical works

**NUMBER OF WEEKS:** 10

**COURSE TYPE:** specialized

**COURSE OBJECTIVES:** Knowledge of stricto-sensu wine making technologies, special wines and grape, must and wine products. Knowledge of the care operations applied to the wine during the evolution and of the conditioning and conditioning procedures. Knowledge of diseases and defects of wine

**TOPICS:** The technologies for the elaboration of the wines themselves or "Stricto-sensu; The technologies for the elaboration of the special wines and the distillates in the wine; The technological processes of wine

care during the conservation; The evolution and the phases of the wine development; The disorders, accidents and defects in Wines; Clarification and Stabilization of Wine

**TEACHING LANGUAGE:** Romanian

**KNOWLEDGE ASSESSMENT:** answers to exam 80%, final answers to Laboratory works 20%

**ASSESSMENT FORM:** exam

**REFERENCES**

1. BĂDUCĂ CÎMPEANU C., 2016. Oenologie. Bazele științifice și tehnologice ale vinificației. Editura Universitaria, Craiova

2. PEYNAUD. E., BLOUIN J., 2006. Connaissance et travail du vin. 4<sup>e</sup> édition. Édition Dunod, Paris.

3. RIBÉREAU GAYON P., DUBOURDIEU D., DONÈCHE B., LONVAUD A., 2005 – Traité d'œnologie. Tome I. Microbiologie du vin. Vinifications. Édition Dunod, Paris.

4. RIBÉREAU GAYON P., Glories Y., Maujean A., Dubourdieu D., 2012. Traité d'œnologie. Tome II. Chimie du vin. Stabilisation et traitements. Édition Dunod, Paris.

## **TECHNOLOGY OF HORTICULTURAL PRODUCTS (FRUITS AND VEGETABLES) II**

**CODE:**D29HCL859

**CREDITS:** 3

**COURSE COORDINATOR:** PhD. Associate Professor. Mira Elena IONICĂ

**YEAR / SEMESTER:** IV<sup>th</sup> Year / II<sup>nd</sup> Semester

**HOURS PER WEEK:** 2 hours of course, 2 hours of practical works

**NUMBER OF WEEKS:** 11

**COURSE TYPE:** specialized

**COURSE OBJECTIVES:** Knowledge of the main technological flows of the fruits and vegetables processing

**TOPICS:** Knowledge of the materials and auxiliaries used in the canning industry; Knowledge of theoretical processes for the fruits and vegetables processing; Knowledge of packaging used in the canning industry of vegetables and fruits; Knowledge of fruit and vegetable processing methods: preservation by sterilization and pasteurization, concentration, freezing, antiseptic preservation, acidification preservation, lactic fermentation, alcoholic fermentation; Develop an action plan and implement it in relation to the tasks defined by the job description.

**TEACHING LANGUAGE :** Romanian

**KNOWLEDGE ASSESSMENT:** answers to exam 70%, final answers to Laboratory works 30%

**ASSESSMENT FORM:** exam

**REFERENCES:**

1. Mira Elena Ionică, 2016. Conservarea industrială a produselor horticoale. Ed. Universitaria.

2. Mira Elena Ionică., 2014. Metode de analiză și control Al calității fructelor și legumelor proaspete și divers prelucrate. Ed. Universitaria.

## **MARKETING**

**CODE:**D29HCL860

**CREDITS:** 2

**COURSE COORDINATOR:** PhD. Associate Professor. Radu Lucian PÂNZARU

**YEAR / SEMESTER:** IV<sup>st</sup> Year / II<sup>st</sup> Semester

**HOURS PER WEEK:** 1 hours of course, 1 hours of seminar

**NUMBER OF WEEKS:** 10

**COURSE TYPE:** field

**COURSE OBJECTIVES:** Planning, organizing and coordinating agro-food marketing activities; Interpretation of legislation in the food industry as well as basic notions of food; Marketing, strict adherence to the principles of human nutrition and current regulations on food additives; Using basic knowledge to interpret marketing projects; Applying the principles of human nutrition and involvement in the selection of information necessary for the creation and completion of databases in the food industry; Objective evaluation of how to develop and implement the marketing strategy; Developing a marketing project with application in the food industry.



**TOPICS:** Introductory Marketing, Organizing Marketing Services, Agribusiness Market, Elements of Consumer Psychology, Segmentation of Markets, Marketing Forecast, Marketing Mix, Market Making of the Economic Agent - An Integral Part of Marketing Strategy.

**TEACHING LANGUAGE :** Romanian

**KNOWLEDGE ASSESSMENT:** answers to exam 70%, final answers to Laboratory works 30%

**ASSESSMENT FORM:** verificare

**REFERENCES**

1. Constantin M. și colab., 2009, Marketingul producției agroalimentare, Editura Agro Tehnica, București;
2. Lendrevie J., Lindon D., 1993, Mercator, Theorie et pratique du marketing, Edition Dalloz, Paris;
3. Manole V., Stoian Mirela, 2001, Agromarketing, Editura ASE, București ;
4. Meghișan M., Nistorescu T., 1998, Bazele marketingului, Editura Scrisul Românesc, Craiova ;
5. Oancea Margareta, 2007, Managementul gestiunea economică și strategia unităților agricole, Editura Ceres, București;
6. Pană D., Pană D. D., 1995, Îndrumător de lucrări practice pentru Management și Marketing în industria alimentară, Editura Sitech,, Craiova;
7. Pânzaru R.L., 1999, Marketing agroalimentar, Universitatea din Craiova;
8. Pânzaru R.L., Medelele D. M., Ștefan G., 2007, Elemente de management și marketing în agricultură, Editura Universitaria, Craiova;
9. Pânzaru R. L., 2017, Marketing – note de curs, Universitatea din Craiova;
10. Ștefan G., Bodescu D, Toma A.D., Pânzaru R.L., 2007, Economia și filiera produselor agroalimentare, Editura Alfa, Iași.

**ACADEMIC PRACTICE FOR PREPARATION OF GRADUATION THESIS**

**CODE:** D29HCL861

**CREDITS:** 10

**COURSE COORDINATOR:** PhD. Associate Professor Dorin Constantin COSTEA

**YEAR / SEMESTER:**IV<sup>th</sup> Year / II<sup>th</sup> Semester

**HOURS PER WEEK:** 30 ore

**NUMBER OF WEEKS:** 4

**COURSE TYPE:** specialized

**COURSE OBJECTIVES:** Performance of scientific multidisciplinary / interdisciplinary research projects using innovative methods with significant impact on the development of viticulture and wine sector; Ability of drawing conclusions and suggesting solutions / recommendations for academic research and practice in viticulture and wine sectors, based on the research studies performed.

**TOPICS:** Finalisation of Master's thesis plan and bibliography; Specialty literature reviews based on academic specialty resources recommended by the research supervisor or other sources considered as being relevant by the student; Finalisation and implementation of the research methodology intended for the achievement of objectives ; Preparation and drafting of the Master's thesis; Presentation of results and conclusions of the research studies.

**TEACHING LANGUAGE:** Romanian

**KNOWLEDGE ASSESSMENT:** thesis presentation and defense - 100%

**ASSESSMENT FORM:** colloquium

**REFERENCES:**

1. Bibliography recommended by the research supervisor or considered to be relevant by the candidate, depending on the research topic ;
- 2.\*\*\*Ghid pentru elaborarea și susținerea proiectului de diplomă, lucrării de licență și a lucrării de disertație