ROMANIA
MINISTRY OF NATIONAL EDUCATION

UNIVERSITY OF CRAIOVA
FACULTY OF HORTICULTURE

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UNIVERSITY OF CRAIOVA
FACULTY OF HORTICULTURE

SPECIALIZATION COURSES IN BIOLOGY

This is the package of courses of specialization in Biology at the University of Craiova / Faculty of Horticulture / Department of Biology and Environmental Engineering, valid for the academic year 2016-2017.

EDUCATIONAL PLAN

FIRST YEAR OF STUDIES

UNIVERSITY OF CRAIOVA
Faculty of Horticulture
Department: Biology and Environmental Engineering (D30)
The hierarchy domain: Biology
Study program: Biology (BIO)
Length of studies : 3 years
Form of education: of day

APPROVED starting with academic year 2016-2017

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

EDUCATIONAL PLAN – FIRST YEAR OF STUDIES (2016-2

Discipline	Cod	FD D S C OPU	OB OP F	Opt. 0/≥1	C1	S1	L1	P1	CT1	FV1	C2	S2	L2	P2	CT2	FV2
COMPULSORY AND OPTIONAL DISCIPLES																
Anorganic chemistry	D30BIOL101	FD	OB	1	2		1		4	C						
Mathematics with applications in biology	D30BIOL102	C	OB	1	1	2			4	C						
Human anatomy and hygiene	D30BIOL103	C	OB	1	2		2		5	E						
Relationship, nutrition and reproduction functions	D30BIOL104	S	OB	1	2		2		5	E						
Morphology and vegetal anatomy I	D30BIOL105	S	OB	1	2		2		5	E						
Invertebrate biology I	D30BIOL106	FD	OB	1	2		2		5	E						
Foreign language	D30BIOL107	C	OB	1		1			2	C						
Physical education I	D30BIOL108	C	OB	1		1			1*	A/R						
Biophysics	D30BIOL209	FD	OB	1							2		1		5	C
Vegetal cytology	D30BIOL210	FD	OB	1							2		1		4	E
Morphology and vegetal anatomy II	D30BIOL211	S	OB	1							2		2		5	E
Invertebrates systematic	D30BIOL212	FD	OB	1							2		2		5	E
Animal histology and embriology	D30BIOL213	C	OB	1							2		2		4	E
Foreign language	D30BIOL214	C	OB	1								1			2	C
Organic chemistry	D30BIOL215	FD	OB	1							2		1		5	C
Physical education II	D30BIOL216	C	OB	1								1			1*	A/R
TOTAL					11	4	9	0	30		12	2	9	0	30	
OPTIONAL DISCIPLINE																
TOTAL					0	0	0	0	0		0	0	0	0	0	
					24						23					

Rector,
Professor Dr.
Cezar-Ionuț Spînu

Dean,
Professor Dr.
Sina Niculina Cosmulescu

Department Director
Senior Lecturer, PhD
Daniel Rădulțoiu

SECOND YEAR OF STUDIES

UNIVERSITY OF CRAIOVA — APPROVED starting with
Faculty of Horticulture — academic year 2017-2018
Department: Biology and Environmental Engineering (D30)
The hierarchy domain: Biology
Study program: Biology (BIO)
Length of studies : 3 years — Sem. I — Sem. II
Form of education: of day — Nr. weeks/sem. if ≠ 14

EDUCATIONAL PLAN – SECOND YEAR OF STUDIES (201

Discipline	Cod	FD DS C OPU	OB OP F	Opt. 0/≥1	C1	S1	L1	P1	CT1	FV1	C2	S2	L2	P2	CT2	FV2
COMPULSORY AND OPTIONAL DISCIPLES																
the biology of vertebrates	D30BIOL317	FD	OB	1	2		2		5	E						
Comparative anatomy I	D30BIOL318	S	OB	1	2		1		4	E						
General vegetal physiology I	D30BIOL319	FD	OB	1	2		2		5	E						
Cryptogamic systematic	D30BIOL320	FD	OB	1	2		1		4	E						
Entomology	D30BIOL321	S	OB	1	2		2		5	C						
Cellular biology	D30BIOL322	FD	OB	1	2		1		4	C						
Parasitology	D30BIOL323	S	OP	1	2		1		3	C						
Nature protection	D30BIOL324	S	OP	0	2		1		3	C						
Physical education III	D30BIOL325	C	OB	1		1			1*	A/R						
Biochemistry	D30BIOL426	FD	OB	1							2		1		4	C
The systematics of vertebrates	D30BIOL427	FD	OB	1							2		2		4	E
Comparative anatomy II	D30BIOL428	S	OB	1							2		1		4	E
General vegetal physiology II	D30BIOL429	FD	OB	1							2		2		4	E
Biological practice in the field (3 weeks = 90 hours)	D30BIOL430	C	OB	2										6,43	4	C
Systematic of phanerogams	D30BIOL431	FD	OB	1							2		1		4	E
Vegetal histology	D30BIOL432	C	OB	1							2		1		4	C
Physiology of nutrition and plant development	D30BIOL433	S	OP	0							2		1		2	C
Ornithology	D30BIOL434	S	OP	1							2		1		2	C
Physical education IV	D30BIOL435	C	OB	1								1			1*	A/R
TOTAL					14	1	10	0	30		14	1	9	0	30	
OPTIONAL DISCIPLINE																
TOTAL					0	0	0	0	0		0	0	0	0	0	
					25						24					

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IIIST YEAR OF STUDY

UNIVERSITY OF CRAIOVA — **APPROVED starting with**
Faculty of Horticulture — **academic year 2018-2019**
Department: Biology and Environmental Engineering (D30)
The hierarchy domain: Biology
Study program: Biology (BIO)
Length of studies : 3 years — Sem. I — Sem. II
Form of education: of day — Nr. weeks/sem. if ≠ 14 — 10

EDUCATIONAL PLAN –IIIST YEAR OF STUDY (2018-201

Discipline	Cod	FD DSC OPU	OB OP F	Opt. 0/≥1	C1	S1	L1	P1	CT1	FV1	C2	S2	L2	P2	CT2	FV2
COMPULSORY AND OPTIONAL DISCIPLES																
General genetics I	D30BIOL536	FD	OB	1	2		1		5	E						
general animal physiology I	D30BIOL537	FD	OB	1	2		2		5	E						
General ecology I	D30BIOL538	FD	OB	1	2		1		5	E						
Phytopathology	D30BIOL539	S	OB	1	2		2		5	E						
Evolutionism	D30BIOL540	FD	OB	1	2	2			5	C						
General microbiology	D30BIOL541	FD	OB	1	2		1		5	E						
General genetics II	D30BIOL642	FD	OB	1							2		1		4	E
General animal physiology II	D30BIOL643	FD	OB	1							2		2		4	E
Special microbiology	D30BIOL644	FD	OB	1							2		1		4	E
General ecology II	D30BIOL645	FD	OB	1							2		1		4	E
Elaboration of the license work (4 weeks = 120 hours)	D30BIOL646	S	OB	2										12	10	C
Phytosociology	D30BIOL647	S	OP	1							2		1		2	C
Genetica umana	D30BIOL648	S	OP	0							2		1		2	C
Imunobiologie	D30BIOL649	S	OP	0							2		1		2	E
Micology	D30BIOL650	S	OP	1							2		1		2	E
TOTAL					12	2	7	0	30		12	0	7	0	30	
OPTIONAL DISCIPLINE																
TOTAL					0	0	0	0	0		0	0	0	0	0	
					21						19					

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Daniel Rădulțoiu

FIRST YEAR OF STUDIES

ANORGANIC CHEMISTRY

CODE: D30BIOL101
CREDITS: 4
COURSE HOLDER: Senior Lecturer, PhD, Ileana COJOCARU
YEAR/SEMESTER: 1st year/ 1st semester
NUMBER OF HOURS PER WEEK: 2 hours course, 1 hours practical course
NUMBER OF WEEKS: 14
COURSE TYPE: main subject
COURSE OBJECTIVES:

- Familiarize with the concepts of atom structure and classification of elements;
- Understanding the electronic configuration of the elements, their valence;
- Acquiring knowledge to understand the types of chemical reactions;

THEMES: Atoms. Atomic structure. Classification of elements.molecules. chemical links. Chemical thermodynamics. Chemical equipment. Solutions. Ionic balancing. Chemical cinematics. Catalysis.coloal status of material. Oxidation and reduction.
LANGUAGE OF INSTRUCTION: Romanian
KNOWLEDGE ASSESSMENT: exam answers 70%, final answers for workshops 10%, periodical assessment through practical tests 10%, continuous assessment throughout semester 5%, activities such as homework/ essays/ papers/ translations/ projects 5%.
ASSESSMENT TYPE: exam
BIBLIOGRAPHY:
V. Popescu, I. Cojocaru, General Chemistry, Sitech Publishing House, Craiova, 2009
Cezar Spinu, Maria Pleniceanu, General Chemistry, Universitaria Publishing House, Craiova, 2007.
M. Pleniceanu, C. Spînu, General Chemistry, University of Craiova Printing, 2006.
M. Pleniceanu, M. Isvoranu, Physico-chemical Analysis, University of Craiova Printing, 2003.
M. Pleniceanu, Analytical Qualitative and Quantitative Chemistry, Universitaria Publishing House, Craiova, 1995.
M. Pleniceanu, C. Spînu, Analytical Chemistry: Practical Works, Questions, Exercises and Problems, Typography of the University of Craiova, 2007.
Maria Pleniceanu, Anca Ganescu, Analytical Chemistry. Practical works, questions, exercises and problems, University of Craiova Printing, 2008.
Ileana Cojocaru, Analytical Chemistry, Laboratory Practice Laboratory, Sitech Publishing House, Craiova, 2009, ISBN 978-606-530-590-8.

MATHEMATICS WITH APPLICATIONS IN BIOLOGY

CODE: D30BIOL102
CREDITS: 4
COURSE HOLDER: Senior Lecturer, PhD, Cătălin ȘTERBEȚI

YEAR/SEMESTER: 1st year/ 1st semester
NUMBER OF HOURS PER WEEK: 1 hour course, 2 hours practical course
NUMBER OF WEEKS: 14
COURSE TYPE:
COURSE OBJECTIVES:. 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 determination of statistical indicators of populations and samples (for example, indicators of the variations, moments, etc.).
THEMES: Linear programming. The calculus of probabilities. Elements of mathematical statistics. Biosystems. Biocenoses
LANGUAGE OF INSTRUCTION: Romanian
KNOWLEDGE ASSESSMENT: exam answers 70%, final answers for workshops 10%, continuous assessment throughout semester 10%, activities such as homework/ essays/ papers/projects 10%.
ASSESSMENT TYPE: verification
BIBLIOGRAPHY:
Bălan V., Șterbeţi C.,- Capitole de matematici aplicate. Programare liniară. Teoria probabilităţilor. Statistică matematică, Editura Reprograph, Craiova, 2005
Ceapoiu N.- Metode statistice aplicate in experimente agricole si biologice, Editura Agro-Silvică, Bucuresti, 1968
Ene D,- Matematică cu aplicaţii in biologie si ştiinţe agricole, Bucuresti, 2004
Hartia S.,-Programarea liniară in conducerea fermei agricole, Editura CERES, Bucuresti 1975
Lupescu T., Rosu A., Cerchez M.,- Programarea Matematică, Editura Militară 1965
Rumsinski L.Z.-Prelucrarea matematică a datelor experimentale, Editura Tehnică, Bucuresti, 1974
Stillwell J.,- Mathematics and Its History, Editura Springer, 2010.

HUMAN ANATOMY AND HYGIENE

CODE: D30BIOL103
CREDITS: 5
COURSE HOLDER: Senior Lecturer, PhD, Diana OLIMID
YEAR/SEMESTER: 1st year/1st semester
NUMBER OF HOURS PER WEEK: 2 hours course / 2 hours practical activities
NUMBER OF WEEKS: 14
COURS TYPE: Obligatory
COURSE OBJECTIVES: The knowledge of the anatomical structure of the main systems of the human body, methods of contraception, sexual transmissible diseases and hygiene rules.
THEMES: Anatomical terminology. Organ systems. The skeletal system: parts of the skeleton. Bone tissues: compact and spongy bone. Articulations. Muscle structure and body movements. The major skeletal muscles. The nervous system. The sense organs. The respiratory system. The digestive system. Heart and the circulatory system. The excretory system. The male and female reproductive systems. The endocrine glands. Methods of contraception. Sexual transmissible disease. Rules of hygiene and the prevention of different diseases.

LANGUAGE OF INSTRUCTION: Romanian.
KNOWLEDGE ASSESSMENT: Final theoretical exam 60%, final practical exam 20%, 7uropean7s evaluation during the semester 20%.
ASSESSMENT TYPE: Exam
BIBLIOGRAPHY:
Berilă I., 1995, Igiena alimentaţiei – Curs pentru 7uropea, Reprografia Universităţii din Craiova.
Berila I., 1995, Igiena mediului 7uropea – Curs pentru 7uropea, Reprografia Universităţii din Craiova.
Bucur Gh. , 2003, Bolile venerice pe înţelesul tuturor. Edit. Medicală, Bucureşti.
Dimitrie Nane and others, 1996, Contracepţia, Ed. Ştiinţă şi Tehnică, Bucureşti.
Netter F. H., 2006, Atlas of Human Anatomy, 4-th edition, Saunders Elsevier Inc., Philadelphia.
Niculescu C. TH. And others, 2001, Anatomia şi fiziologia omului. Editura Corint, Bucureşti.
Papilian V., 1982, Anatomia omului, Edit. Didactică şi pedagogică, Bucureşti (reeditată în 1998 – vol. I şi II).
Trandafir T., 1997, Neuroanatomie, Vol. I, II, III. Editura Newa, Bucureşti.

RELATIONSHIP, NUTRITION AND REPRODUCTION FUNCTIONS

CODE: D30BIOL104
CREDITS: 5
COURSE HOLDER: Lecturer PhD. Luminița Mariana OLARU
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: Knowing the mechanisms of coordinating nutrition functions and how to integrate them with the functions of relationship and reproduction in the animal body.
THEMES: Structural and Functional Nervous System Particularities in Animals. The structural and functional particularities of organs of animal senses. Structural and functional features of locomotion in animals. Structural and functional features of the digestive system in animals. Structural and functional features of the respiratory system in animals. Structural and functional features of the circulatory system in animals. Animal domestic environment. Structural and functional particularities of the animal excretory system. Structural and functional particularities of the reproductive system in animals.
LANGUAGE OF INSTRUCTION: Romanian
KNOWLEDGE ASSESSMENT: Final theoretical exam 60%, final practical exam 20%, continuous assessment during the semester 20%.
ASSESSMENT TYPE: Exam
BIBLIOGRAPHY:
Hăulică, I., 2007. Human Physiology, Medical Ed., Bucharest.
Năstăsescu, Gh., Ungureanu Luminiţa, 1998. The physiology of animals. University course, Vol. II Ed. Sitech, Craiova.
Năstăsescu, Gh., Ungureanu Luminiţa, 1999. The physiology of animals. University course, Vol. II Ed. Sitech, Craiova.
Prosser, C.L., 1991. Comparative Animal Physiology, 4th Ed., Wiley-Liss, New York.
Rastogi, S.C., 2007. Essentials of Animal Physiology, 4th New Age International Publishers, New Delhi.

Ungureanu Luminiţa; Năstăsescu, Gh., 1997. Animal physiology. Laboratory work, Ed. Sitech, Craiova.
Willmer, P.G.; Stone, G.N.; Johnston, I. A., 2005. Environmental physiology of animals, Second Ed., Blackwell Publishing Ltd.

MORPHOLOGY AND VEGETAL ANATOMY I

CODE: D30BIOL105
CREDITS: 5
COURSE HOLDER: Senior Lecturer, PhD, Cătălin George SIMEANU
YEAR/SEMESTER: anul I/ sem. I
NUMBER OF HOURS PER WEEK: 2 ore curs, 4 ore lucrări practice
NUMBER OF WEEKS: 14
COURSE TYPE: specialty
COURSE OBJECTIVES: Acquiring concepts of morphology and plant anatomy. Developing the skill to analyze and describe the morphology of the plant organs, to perform transversal and longitudinal sections through the vegetal organs, to analyze them and microscopically draw them. Understanding the phylogeny and ontogeny of the organs on scientific basis, also calling on paleobotanic data, the possibility for current students, future teachers or researchers to make various macroscopic and microscopic preparations and their interpretation.
THEMES: Introduction to plant morphology and anatomy, shape, size and structure of the plant cell, definition and classification of vegetal tissues. Organism: study of vegetative and reproductive organs of plants both morphologically and anatomically..
LANGUAGE OF INSTRUCTION: romanian.
KNOWLEDGE ASSESSMENT: course notions - 70%, practical notions - 30%.
ASSESSMENT TYPE: oral exam
BIBLIOGRAPHY:
Bavaru A., Bercu Rodica. *Morfologia şi anatomia plantelor,* Ed. ExPonto, 2002.
Deliu Cornelia. *Morfologia şi anatomia plantelor,* Ed. Presa Universitară Clujană, 1999.
Simeanu, C. G., 2014 – *Morfologie şi Anatomie vegetală*. Editura SITECH, Craiova, 413 pag
Simeanu V., Popescu Gh. *Lucrări practice la morfologia şi anatomia plantelor,* Repr. Universităţii din Craiova, 1992.

INVERTEBRATE BIOLOGY I

CODE: D30BIOL106
CREDITS: 5
COURSE HOLDER: Senior Lecturer, PhD, Anda Felicia BABALEAN
YEAR/SEMESTER: 1st year/ 1st semester
NUMBER OF HOURS PER WEEK: 2 hours course, 2 hours practical classes
NUMBER OF WEEKS: 14
COURSE TYPE: main subject
COURSE OBJECTIVES: 1 – the study of the morphology and anatomy of the invertebrates with emphasize on the evolutionary acquisitions in form and function in order to understand invertebrate evolution; 2 – the study of the general biology of invertebrates.
THEMES: 1. Introduction in Invertebrate Zoology – objectives, related disciplines, history of Invertebrate Zoology in Romania and worldwide. The evolution of the systematic of the living beings: short history; introducing Protista, Protozoa and Metazoa. The protozoan cell:

structure and function. 2. Types of Protozoan cells: the flagellates, amoeboids, ciliates and the spore-forming parasitic protozoa. 3. The general features of the Metazoa – multicellularity and tissues, the features of the 9uropean9s9 development and it importance in explaining the evolution – ontogeny and phylogeny. 4. Porifera, Placozoa – form, function, biology. 5. Cnidaria, Ctenophora – form, function, biology. 6. Platyhelminthes, Orthonectida, Dicyemida, Nemertea – form, function, biology. 7. Mollusca – form, function, biology. 8. Annelida – form, function, biology. 9. Echiura, Sipuncula – form, function, biology. 10. Onycophora, Tardigrada – form, function, biology. 11. Arthropoda – form, function, biology. 12. Cycloneuralia – form, function, biology. 13. Gnathifera – form, function, biology. 14. Kamptozoa, Cycliophora – form, function, biology. 15. Lophophorata – form, function, biology. 16. Chaetognatha – form, function, biology. 17. Deuterostomia – Echinodermata – form, function, biology.

LANGUAGE OF INSTRUCTION: Romanian

KNOWLEDGE ASSESSMENT: exam answers 50%, periodical assessment through practical tests 25%, continuous assessment throughout semester 25%.

ASSESSMENT TYPE: exam

BIBLIOGRAPHY:

Babalean A, Bălescu C. 2011. Biologie 9urope (Zoologie), SITECH

Babalean, A., 2001. Zoologia nevertebratelor – noțiuni practice, Ed. Universitaria Craiova

Beck E.D., Braithwaite F.L. 1970. Invertebrate Zoology, Laboratory workbook, Burgess Publishing

Company.

Cavalier Smith, T., 1993. Kingdom Protozoa and its18 Phyla, Microbiological Reviews, pg. 953 – 994

Firă, V., Năstăsescu, M., 1977. Zoologia nevertebratelor, 1977, EDP, București.

Radu V.Gh.,.Radu V.V – 1967. Zoologia nevertebratelor, vol. II, EDP.

Radu V.Gh., Radu V.V.– 1972. Zoologia nevertebratelor, vol. I, EDP.

Ruppert, E., E.,Fox, R., S., Barnes, R., D.,2004. Invertebrate Zoology, Brooks and Cole, Thomson learning.

Sleigh, M., 1989. Protozoa and other protists, Cambridge University Press.

Suciu M., Năstăsescu, M., 1989. Zoologia Nevertebratelor, Lucrări de laborator I, Reprografia Universității București.

Tesio C. – 1999. Elemente de Zoologie. Editura Universităţii din Bucureşti.

ENGLISH I

CODE: D30BIOL107

CREDITS: 2

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

YEAR / SEMESTER: Ist Year / Ist 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: Foundations of modern biology.Cell theory. Evolution.Genetics.Homeostasis.Energy.Study and research.Structural Physiological.Evolutionary Systematic Kingdoms. 10uropean10s10al10 environmental.
TEACHING LANGUAGE : English
KNOWLEDGE ASSESSMENT: exam answers 80%, theoretical and practical checking 20%
ASSESSMENT FORM: Checking
REFERENCES
Cerăceanu, Denisa-Costina, English for Biology Students, Editura Universitaria, Craiova, 2007
Gălăţeanu –Firnoagă, Georgiana; Parks, Debora, Exerciţii şi teste de gramatică engleză, Editura Paralela 45, Bucureşti, 2003.
Chilărescu, Mihaela; Paidos Constantin, Proficiency in English, Institutul european, 2001
Pawlowska, Barbara, Kempinski, Zbigniew, Teste de limba engleză, Editura Teora, Bucureşti, 1997
Nedelcu, Carmen, English Grammar, Editura Universitaria, Craiova, 2004.

FRENCH I

CODE: D30BIOL107
CREDITS: 2
COURSE COORDINATOR: Ph.D, Senior Lecturer Ileana Mihaela CHIRIŢESCU
YEAR / SEMESTER: Ist Year / Ist 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, Biology Specialization, but also for those who want to learn vocabulary in context. Practice of important Biology 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. 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: Sterilization - Canned food –Food preservation, cyanobacteria such as Spirulina. Fungi- Cultured foods: Mushroom farming. Bacteria, *Lactobacillus.* Waste processing and bioremediation. Bacteria capable of digesting the hydrocarbons in petroleum.
TEACHING LANGUAGE : French
KNOWLEDGE ASSESSMENT: exam answers 80%, theoretical and practical checking 20%
ASSESSMENT FORM: Checking
REFERENCES
Chiriţescu, Ileana Mihaela, *Le Français pour les agronomes, les horticulteurs et les chimistes*, Editura Universitaria, Craiova, 2016.
Bernard Maurice, Saison André, Avond Guy, Le Bail Helene, *Chimie*, Éditions Fernard Nathan, Paris, 1979.
Dincă, Daniela Liliana, *Syntaxe de la phrase noyau en français contemporain*, Editura Universitaria, Craiova, 2006.
Fournier, Jean; Lafarge, Alain; Bastide, Maurice; Mouchel, Gérard; Vredon, Renée – *Français 6e Lire, Observer, s'Exprimer*, Bordas, Paris, 1981.
Negreanu, Aristiţa, *Dicţionar de expresii francez-român Dicex*, ediţia a III-a revizuită şi adăugită, Editura All Educaţional, Bucureşti, 2007.
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.
***Mon cahier de révisions, CE1, Éditions Éclairs de Plume, 2010.
***Les cahiers de révisions, CM1, Éditions Éclairs de Plume, 2010.
***Cahier de révisions, CE1, Éditions Éclairs de Plume, 2010.
***Cahiers de révisions, CE2, Éditions Éclairs de Plume, 2010.

PHYSICAL EDUCATION I

CODE: D30BIOL108
CREDITS: 1
COURSE HOLDER: Senior Lecturer, PhD, 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:

Barbu, D., (2010), Fotbal. Curs de bază pentru studenţi. Craiova, Edit. Universitaria
Dragomir, M., Albină, A., (2006), Atletism în şcoală, Ed. Universitaria, Craiova
Dragnea, A. C-tin. Si colab, (2006) - Educaţie fizică şi sport – teorie şi didactică – Editura FEST, Bucureşti.
Ortanescu Dorina, (2008), Gimnastica – componentă a educaţiei fizice şcolare, Ed.Universitaria, Craiova
Orţănescu Dorina, 2008, Gimnastica- componentă a educaţiei fizice şcolare, Editura Universitaria Craiova
Raţă G., Ghe. Raţă (2008) – Educaţia fizică şi metodica predării ei – Editura PIM, Iaşi.
Ungureanu, A. (2009) – Metodica educaţiei fizice şi sportului – Editura Universitaria, Craiova.
Ţifrea, C., (2002) – Teoria şi metodica atletismului – Editura Doreco, Bucureşti.

BIOPHYSICS

CODE: D30BIOL209
CREDITS: 5
COURSE COORDINATOR: Professor, PhD. , CIMPOIASU, Vily Marius
YEAR / SEMESTER: Ist Year / IIst Semester
HOURS PER WEEK: 2 hours of lecture, 1 hours of practical work
NUMBER OF WEEKS: 14
COURSE TYPE: fundamental
COURSE OBJECTIVES: Knowledge of notions, concepts, laws and principles specific to physics. Knowledge of methods, techniques of investigation and exploration of biological systems. Knowing the perspectives of physics, as well as the relationships of physical dimensions with the environment from the perspective of biology. Knowledge of organisms. The Impact of Physics on the Life. Knowledge of the branch and its importance in biology. Knowledge of physical dimensions specific to the violin, measurement units and measurement systems. Knowledge of the global evolution of the living. Knowledge of the properties of the substance and its association with the life. Knowing the way of measuring the physical parameters specific to the living organism.
TOPICS: Introduction to biophysics. Its importance. Branches and sub-branches. Physical notions specific to biophysics. Organization of living matter. Constituent elements of living matter. Atomic and Nuclear Physics. Quantum theory, Introduction and principles. Atomic Structure and Atomic Spectra. Molecular structure and symmetry. Spectroscopy. Electronic microscopy. Nuclear magnetic resonance. Molecular biophysics.Molecular phenomena. Superficial tension. Diffusion. Osmosis. Cellular biophysics. Specific notions of cellular biophysics. Cell potential. Active transport. Bioelectricity. Biological thermodynamics. Thermodynamic quantities. Principles of thermodynamics. Entropy.
TEACHING LANGUAGE: romanian
KNOWLEDGE ASSESSMENT: answers to exam 60 %, periodic answers to practical work 10 %, results to periodic control works 30 %.
ASSESSMENT FORM: verification
REFERENCES:

Termodinamica, George C. Moisil, Ed. Academiei Romane, Bucureşti, 1988
Electricitate şi Magnetism, Al. Nicula, Ed. Didactica şi Pedagogică, Bucureşti, 1982
Optica, fizica plasmei, fizică atomică şi nucleară, Ed. Didactica şi Pedagogică, Bucureşti, 1983.

Cursul de fizică Berkley, C. Kittel et. All., vol.1-5, Ed. Didactica şi Pedagogică, Bucureşti, 1981.
Elemente si tehnici de biofizica, Cimpoiasu Vily Marius, Editura Universitaria, 2008, Craiova.
Fizica generală, R.Ţiţeica, Ioviţu Popescu, vol.1-3, Ed. Tehnică, Bucureşti,1973.
Curs de fizică pentru uzul studenţilor, Ioan Damian, Universitatea Politehnica din Timişoara, 1995.

VEGETAL CYTOLOGY

CODE: D30BIOL210
CREDITS: 4
COURSE HOLDER: Senior Lecturer, PhD, Cătălin George SIMEANU
YEAR/SEMESTER: Ist Year / IIst Semester
NUMBER OF HOURS PER WEEK: 2 hours of lecture, 2 hours of practical work
NUMBER OF WEEKS: 14
COURSE TYPE: fundamental
COURSE OBJECTIVES: Acquiring general cytology concepts. Deepen knowledge of the cell, the ability to make microscopic preparations using appropriate dyes to study different cellular constituents, make semifixes and fix preparations needed in research work and at the department..
THEMES: Introduction to cytology. Brief History of Research. Methods, techniques and tools for studying the cell; The main characters of prokaryotic and eukaryotic cells; Cell division: amitose, mitosis and meiosis, cell differentiation and dedifferentiation.
LANGUAGE OF INSTRUCTION: romanian.
KNOWLEDGE ASSESSMENT: course notions - 70%, practical notions - 30%.
ASSESSMENT TYPE: oral exam
BIBLIOGRAPHY:

Acatrinei Gh. *Biologia celulei vegetale,* Ed. Ştiinţifică şi Enciclopedică, Bucureşti, 1975
Anghel I. *Citologie vegetală*, Ed. Did. şi Ped Bucureşti, 1979
Simeanu, C. G., 2014 – *Morfologie şi Anatomie vegetală*. Editura SITECH, Craiova, 413 pag
Simeanu V., Popescu Gh. *Lucrări practice la morfologia şi anatomia plantelor,* Repr. Universităţii din Craiova, 1992.
Şerbănescu - Jitariu Gabriela, Toma C. Morfologia şi anatomia plantelor, Ed. Did. şi Ped. Bucureşti, 1980.
Toma C., Niţă Mihaela. 1995. *Celula vegetală,* Ed. Univ. A. I. Cuza, Iaşi.

MORPHOLOGY AND VEGETAL ANATOMY II

CODE: D30BIOL211
CREDITS: 5
COURSE HOLDER: Senior Lecturer, PhD, Cătălin George SIMEANU
YEAR/SEMESTER: Ist Year / IIst Semester
NUMBER OF HOURS PER WEEK: 2 hours of lecture, 2 hours of practical work
NUMBER OF WEEKS: 14
COURSE TYPE: specialty
COURSE OBJECTIVES: Acquiring concepts of morphology and plant anatomy. Developing the skill to analyze and describe the morphology of the plant organs, to perform transversal and longitudinal sections through the vegetal organs, to analyze them and microscopically draw them. Understanding the phylogeny and ontogeny of the organs on

scientific basis, also calling on paleobotanic data, the possibility for current students, future teachers or researchers to make various macroscopic and microscopic preparations and their interpretation

THEMES: Phylogeny, ontogeny, morphology, filotaxia and leaf anatomy; Vegetative multiplication, asexual and sexually transmitted to plants; Fruit and carpogenesis; Seed and seminogenesis.

LANGUAGE OF INSTRUCTION: romanian.

KNOWLEDGE ASSESSMENT: course notions - 70%, practical notions - 30%.

ASSESSMENT TYPE: oral exam

BIBLIOGRAPHY:

Andrei M. Anatomia plantelor, Ed. Did. şi Ped. Bucureşti, 1978.
Anghel I. Citologie vegetală, Ed. Did. şi Ped Bucureşti, 1979
Bavaru A., Bercu Rodica. *Morfologia şi anatomia plantelor,* Ed. ExPonto, 2002.
Deliu Cornelia. *Morfologia şi anatomia plantelor,* Ed. Presa Universitară Clujană, 1999.
Simeanu, C. G., 2014 – *Morfologie şi Anatomie vegetală*. Editura SITECH, Craiova, 413 pag
Simeanu V., Popescu Gh. *Lucrări practice la morfologia şi anatomia plantelor,* Repr. Universităţii din Craiova, 1992.
Şerbănescu - Jitariu Gabriela, Toma C. Morfologia şi anatomia plantelor, Ed. Did. şi Ped. Bucureşti, 1980.

INVERTEBRATES SYSTEMATIC

CODE: D30BIOL212

CREDITS: 5

COURSE HOLDER: Senior Lecturer, PhD, Anda-Felicia BABALEAN

YEAR/SEMESTER: 1st year/ 2nd semester

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

NUMBER OF WEEKS: 14

COURSE TYPE: main subject

COURSE OBJECTIVES: study of invertebrate diversity; phylogenetic systematic of the invertebrates.

THEMES: 1. Introduction in systematic Zoology, principles of phylogenetic zoology. 2. Protozoa – diversity and phylogeny. 3. Porifera and Placozoa – diversity and phylogeny. 4. Cnidaria and Ctenophora – diversity and phylogeny. 5. Platyhelminthes, Orthonectida, Dicyemida – diversity and phylogeny. 6. Nemertea – diversity and phylogeny. 7. Mollusca – diversity and phylogeny. 8. Annelida – diversity and phylogeny. 9. Echiura and Sipuncula – diversity and phylogeny. 10. Onicophora and Tardigrada – diversity and phylogeny. 11. Arthropoda – diversity and phylogeny. 12. Cycloneuralia – diversity and phylogeny. 13. Gnathifera – diversity and phylogeny. 14. Kamptozoa and Cycliophora – diversity and phylogeny. 15. Lophophorata – diversity and phylogeny. 16. Chaetognatha – diversity and phylogeny. 17. Deuterostomia – Echinodermata – diversity and phylogeny.

LANGUAGE OF INSTRUCTION: Romanian

KNOWLEDGE ASSESSMENT: exam answers 50%, periodical assessment through practical tests 25%, continuous assessment throughout semester 25%.

ASSESSMENT TYPE: exam

BIBLIOGRAPHY:

Aleshin V. V., Milyutina I. A., Kedrova O. S., Vladychenskaya N. S., Petrov N. B. 1998. Phylogeny of Nematoda and Cephalorhyncha derived from 18S Rdna. J. Mol. Evol. 45: 597-605.
Babalean A, Bălescu C. 2011. Biologie 14urope (Zoologie), SITECH

Bănărescu, P., 1973. Principiile și metodele zoologiei sistematice, editura Academiei RSR.
Firă, V., Năstăsescu, M., 1977. Zoologia nevertebratelor, 1977, EDP, București.
Kristensen M. R., Mobjerg R. 2002: An introduction to Loricifera, Cycliophora and Micrognathozoa, Integ. And Comp. Biol. 42: 641-651
Lemey, Salemi, Vandamme. 2009: The phylogenetic handbook.
Mallat J., Giribet G. 2006. Further use of nearly complete 28S and 18S Rrna genes to classify Ecdysozoa: 37 more arthropods and a kinorhynch. Mol. Phyl. Evol. 40: 772-794.
Ruppert, E., E.,Fox, R., S., Barnes, R., D.,2004. Invertebrate Zoology, Brooks and Cole, Thomson learning.

ANIMAL HISTOLOGY AND EMBRIOLOGY

CODE: D30BIOL213
CREDITS: 4
COURSE HOLDER: Senior Lecturer, PhD, Diana OLIMID
YEAR/SEMESTER: 1st year/2nd semester
NUMBER OF HOURS PER WEEK: 2 hours course / 2 hours practical activities
NUMBER OF WEEKS: 14
COURSE TYPE: Obligatory
COURSE OBJECTIVES: The knowledge of the procedures for using a microscope, the microscopic studies of various types of tissues and cells. Notions of 15uropean15s.
THEMES: Microscopes: components, the procedures for using. Light microscope. Epithelial tissues: simple, stratified and pseudostratified. Connective tissues: clasifications, matrix, cell, fibers (collagenous, reticular, elastic). The ground substance. Adipose tissue. Reticular tissue. Dense fibrouse tissue and loose fibrouse tissue. Special connective tissue: hemopoietic, support coneective tissue. Cartilage: hyaline, elastic, fibrocartilage. Bone tissue. The integument: the epidermis, the dermis, 15uropean15s15a glands. Sweat glands. Histological studies of nerve tissues. Exocrine glands: mucus – producing cell and serous cell. Endocrine glands. Mitosis. Meiosis. Oogenesis. Spermatogenesis. The stages of the 15uropean15s15al development.
LANGUAGE OF INSTRUCTION: Romanian.
KNOWLEDGE ASSESSMENT: Final theoretical exam 60%, final practical exam 20%, 15uropean15s evaluation during the semester 20%.
ASSESSMENT TYPE: Exam
BIBLIOGRAPHY:
Andronescu A., 1987, Anatomia dezvoltării omului. Embriologie medicală. Editura Medicală, Bucureşti.
Bogdan F., 1989, Histologie : curs. Reprografia Universităţii din Craiova.
Bogdan F. and others, 1993, Histologie – ţesuturile. Lucrări practice. Reprografia Universităţii din Craiova.
Grigorescu S. F., 2006, Embriologie generală şi specială. Casa Cărţii de Ştiinţă, Cluj-Napoca.
Junqueira C., Carneiro J., Kelley R., 1995, Basic Histology. 8-th ed. Prentice-Hall International, Inc.
Marcu Elena, 1997, Compendiu pentru studiul microscopic al celulei şi ţesuturilor. Editura Cerma, Bucureşti.
Mogoanţă L., 1998, Histologie medicală – ţesuturile. Editura Info, Craiova.
Young Barbara, Lowe J. S., Stevens A., Heath J. W., 2006, Wheater's Functional Histology – A Text and colour Atlas, 5-th edition. Churchill-Livingstone, Philadelphia.

ENGLISH II

CODE: D30BIOL214
CREDITS: 2
COURSE COORDINATOR: Ph.D, Senior Lecturer, Bărbuceanu Costina Denisa
YEAR / SEMESTER: Ist Year / 2nd 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: Microorganisms, bacteria, viruses, or insects. Sprout inhibition. Delay of Ripening. Improvement of re-hydration.
TEACHING LANGUAGE : English
KNOWLEDGE ASSESSMENT: exam answers 80%, theoretical and practical checks 20%
ASSESSMENT FORM: Checking
REFERENCES
Cerăceanu, Denisa-Costina, English for Biology Students, Editura Universitaria, Craiova, 2007
Gălăţeanu –Firnoagă, Georgiana; Parks, Debora, Exerciţii şi teste de gramatică engleză, Editura Paralela 45, Bucureşti, 2003.
Chilărescu, Mihaela; Paidos Constantin, Proficiency in English, Institutul 16uropean, 2001
Pawlowska, Barbara, Kempinski, Zbigniew, Teste de limba engleză, Editura Teora, Bucureşti, 1997
Nedelcu, Carmen, English Grammar, Editura Universitaria, Craiova, 2004.

FRENCH II

CODE: D30BIOL214
CREDITS: 2
COURSE COORDINATOR: Ph.D, Senior Lecturer Ileana Mihaela CHIRIŢESCU
YEAR / SEMESTER: Ist Year / 2nd 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, Biology Specialization, but also for those who want to learn vocabulary in context. Practice of important Biology 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: Food irradiation. Microorganisms, bacteria, viruses, or insects. Sprout inhibition. Delay of Ripening. Improvement of re-hydration. 'Ionizing radiation'. Non-food items.

TEACHING LANGUAGE : French

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

ASSESSMENT FORM: Checking

REFERENCES

Chiriţescu, Ileana Mihaela, *Le Français pour les agronomes, les horticulteurs et les chimistes*, Editura Universitaria, Craiova, 2016.

Bernard Maurice, Saison André, Avond Guy, Le Bail Helene, *Chimie*, Éditions Fernard Nathan, Paris, 1979.

Dincă, Daniela Liliana, *Syntaxe de la phrase noyau en français contemporain*, Editura Universitaria, Craiova, 2006.

Fournier, Jean; Lafarge, Alain; Bastide, Maurice; Mouchel, Gérard; Vredon, Renée – *Français 6e Lire, Observer, s'Exprimer*, Bordas, Paris, 1981.

Negreanu, Aristiţa, *Dicţionar de expresii francez-român Dicex*, ediţia a III-a revizuită şi adăugită, Editura All Educaţional, Bucureşti, 2007.

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.

***Mon cahier de révisions, CE1, Éditions Éclairs de Plume, 2010.

***Les cahiers de révisions, CM1, Éditions Éclairs de Plume, 2010.

***Cahier de révisions, CE1, Éditions Éclairs de Plume, 2010.

***Cahiers de révisions, CE2, Éditions Éclairs de Plume, 2010.

ORGANIC CHEMISTRY

CODE: D30BIOL215

CREDITS: 5

COURSE HOLDER: Professor Cristina BĂBEANU

YEAR/SEMESTER: I/ II

NUMBER OF HOURS PER WEEK: 2 hours course, 1 hour practical works

NUMBER OF WEEKS: 14

COURSE TYPE: mandatory

COURSE OBJECTIVES:

The course aims to study the main classes of organic compounds, the correlations between their structure and their main properties.

THEMES: Structure of organic compounds. Electronic structure and covalent bonds. Stereochemistry. Types of isomerism; Optical isomers, Characteristic aspects

(thermodynamic, kinetic, mechanistic) of organic reactions. Hydrocarbons, Halogenated compounds Hydroxylic combinations: mono- and poly-ols: properties, representatives. Organic combinations of sulfur; Organic combinations of nitrogen. Amines, nitro-derivatives. Carbonyl combinations: aldehydes and ketones; Carboxylic acids: Functional derivatives of carboxylic acids.
LANGUAGE OF INSTRUCTION: Romanian
KNOWLEDGE ASSESSMENT: Written examination 70% + continuous evaluation 20% + report 10%
ASSESSMENT TYPE: colloque
BIBLIOGRAPHY:
Avram M., 1995, Organic chemistry, vol. I, II, The Academy Publishing House, Bucharest
Iovu M., 1982, Organic chemistry, Didactical and Pedagogical Publishing, Bucharest.
Nenitescu C.D., 1988, Organic chemistry, vol. I, II, Didactical and Pedagogical Publishing, Bucharest.
Dragoi M, 2014, Experimental Organic chemistry, Sitech Publishing house, Craiova,
Băbeanu C., Badea E., Glodeanu E., Marinescu G., 2000, Practical book on organic chemistry, Reprography of the University of Craiova.
Becker H., 1982, Organicum, Practical organic chemistry, Scientific and Encyclopaedic Publishing House Bucharest.

PHYSICAL EDUCATION II

CODE: D30BIOL216
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:
Barbu, D., (2010), Fotbal. Curs de bază pentru studenţi. Craiova, Edit. Universitaria
Dragomir, M., Albină, A., (2006), Atletism în şcoală, Ed. Universitaria, Craiova
Dragnea, A. C-tin. Si colab, (2006) - Educaţie fizică şi sport – teorie şi didactică – Editura FEST, Bucureşti.
Ortanescu Dorina, (2008), Gimnastica – componentă a educaţiei fizice şcolare, Ed.Universitaria, Craiova
Orţănescu Dorina, 2008, Gimnastica- componentă a educaţiei fizice şcolare, Editura Universitaria Craiova
Raţă G., Ghe. Raţă (2008) – Educaţia fizică şi metodica predării ei – Editura PIM, Iaşi.

Ungureanu, A. (2009) – Metodica educaţiei fizice şi sportului – Editura Universitaria, Craiova.
Ţifrea, C., (2002) – Teoria şi metodica atletismului – Editura Doreco, Bucureşti.

SECOND YEAR OF STUDIES

THE BIOLOGY OF VERTEBRATES

CODE: D30BIOL317
CREDITS: 5
COURSE HOLDER: Senior Lecturer, PhD, Bălescu Carmen Daniela
YEAR / SEMESTER: 2nd year/ 1st semester
NUMBER OF HOURS PER WEEK: 2 course hours, 2 practical work hours
NUMBER OF WEEKS: 14
TYPE OF DISCIPLINE: fundamental (obligatory)
COURSE OBJECTIVES: This discipline offers information about Phylum Chordata, the last phylum of the Animalia kingdom. It aims at: *Knowing the main morphological, anatomical, ecological and ethological characteristics concerning the main classes of protochortades (tunicates, cephalochordates) and vertebrates (agnathes, fish, amphibians, reptiles, birds, mammals) in relation to their adaption to their habitats. *Learning the ecological and behavioural aspects of the main groups of vertebrates. Developing one's abilities to recognize, identify and describe the components of the studied systems and to notice the differences between animals.
THEMES: Introduction to the study of the discipline. Phylum Chordata. Subphylum: Urochordata. Subphylum Cephalochordata and Vertebrata. General characteristics (external and internal morphology). **The Agnatha Superclass**. General characteristics. Infraphylum Gnathostomata. **Fish Group**: Class Chondrichthyes. Suprerclass Osteichthyes. External morphology, internal organization (intertegumentary system, skeletal system, muscular and nervous systems, sense organs, digestive system, respiratory system, circulatory, excretory and reproductive systems); ecology and ethology notions (feeding, defensive reproductive and migratory behaviour) of fish. Tetrapod Group. **Amphibia Class:** External morphology, internal organization, ecology and ethology notions about amphibians. **Reptilia Class:** External morphology, internal organization, ecology and ethology notions about reptiles (tortoises, rhyncocephals, snakes, lizards, crocodiles. **Aves Class**: External morphology, internal organization, ecology and ethology notions concerning birds. **Mammalia Class:** General characteristics. External morphology, internal organization, ecology and ethology notions about mammals.
TEACHING LANGUAGE: Romanian
KNOWLEDGE ASSESMENT: 60% answers from course notions + 40% answers from practical work notions
ASSESMENT TYPE: Oral exam
SELECTIVE BIBLIOGRAPHY:
Babalean Anda, Bălescu Carmen, 2011: *Biologie animală (Zoologie- Note de Curs)* Editura Sitech, Craiova
Bălescu Carmen Daniela, 2013. *Anatomia comparată a vertebratelor*, Edit. Universitaria, Craiova
Bălescu Carmen, 2004. *Zoologia vertebratelor*, Curs universitar, Edit. Sitech, Craiova.

Bălescu Carmen, Orzaţă Narcisa, 2007. *Elemente de Zoologia vertebratelor*, Edit. Sitech, Craiova.
Ceuca T., Valenciuc N., Popescu A., 1983. *Zoologia vertebratelor*, Editura Eidacticăă şi Pedagogică, Bucureşti
Mişcalencu şi colab., 1984. *Anatomia comparată*, Editura Didactică şi Pedagogică, Bucureşti.
Sorescu Constantina, Bălescu Carmen, 1993. *Zoologia vertebratelor – lucrări practice.*Reprografia Universităţii din Craiova
Sorescu Constantina, 1993. *Îndrumător de lucrări practice de Anatomia comparată a vertebratelor*. Reprografia Univ. din Craiova
Sorescu Constantina, 1993. *Anatomia comparată a vertebratelor*, Editura Oltenia.
Fauna de vertebrate a României

COMPARATIVE ANATOMY I

CODE: D30BIOL318
CREDITS: 4
COURSE HOLDER: Lecturer, PhD, Carmen VLĂDULESCU
YEAR/SEMESTER: 2 nd year/ 1st semester
NUMBER OF HOURS PER WEEK: 2 hours course, 1 hour practical course
NUMBER OF WEEKS: 14
COURSE TYPE: main subject
COURSE OBJECTIVES: Knowledge and understanding of structures (tissues, organs, systems) and of phylogenetic meanings. Acquiring information on the structure of the animal body to understand the composition and functioning of living organisms, and how organ systems evolved into different classes of vertebrates in the context of changing environmental conditions (shifting from the aquatic environment to the terrestrial environment) and way of life in their long phylogenetic history
THEMES: Principles of Comparative Anatomy. The tegumentary system in the vertebrate series. Skin and glandular vertebrates and glands. The ribs and the sternum in the vertebrate series. The skull in the vertebrate series. The scales of the belts and limbs in the series of vertebrates. Muscle and muscular system in the vertebrate series. The nervous system in the vertebrate series. Spinal cord and spinal nerves. Encephalus in the vertebrate series. The cranial nerves. The vegetative nervous system.
LANGUAGE OF INSTRUCTION: Romanian
KNOWLEDGE ASSESSMENT: Final theoretical exam 60%, final practical exam 20%, continuous assessment during the semester 20%.
ASSESSMENT TYPE: exam
BIBLIOGRAPHY:

Constantinescu Gh., Palicica R., 2006. Comparative anatomy (domestic mammals, birds, humans) and Animal physiology, University Publishing House Orizonturi, Timişoara.
Constantinescu Gh., Radu C., Palicica R., 1982. Topographic Anatomy of Domestic Mammals, Facla Publishing House, Timişoara.
Dornescu T., Necrasov Olga, 1968. Comparative anatomy of vertebrates, Volume I, Teaching education and pedagogic, Bucharest.
Mişcalencu D. and colab., 1975. Comparative vertebrate anatomy - Practical worksheet. Didactic and Pedagogical Publishing House, Bucharest.
Paştea E., Mureşianu E., Constantinescu Gh., Coţofan V., 1978. Comparative Anatomy of Domestic Animals, Didactic and Pedagogic Publishing House, Bucharest.
Sorescu Constantina, 1993. Comparative vertebrate anatomy, Oltenia Publishing House, Craiova.

Sorescu Constantina, 1993 Practitioner of Comparative Anatomy of Vertebrates, Reprography of the University of Craiova.

GENERAL VEGETAL PHYSIOLOGY I

CODE: D30BIOL319
CREDITS: 5
COURSE HOLDER: Lecturer dr. Ion NICOLAE
YEAR/SEMESTER: 2 nd year/ 1st 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 plant organisms and acquiring practical skills for the experimental demonstration of the main vital plant manifestations.
THEMES: Introduction to vegetal physiology. Plant cell physiology. Water exchange between the plant cell and the external environment. Plant water regime (The role of water in plants. Absorption and transport of water in plants. Plant water elimination. Methods of studying plant transpiration). Mineral nutrition (Absorption of mineral elements by plants. Transportation, accumulation and excretion of substances by plants, Physiological role of mineral elements in plants).
LANGUAGE OF INSTRUCTION: Romanian
KNOWLEDGE ASSESSMENT: answers to exam course 70 % and answers to Laboratory works 30 %
ASSESSMENT TYPE: exam
BIBLIOGRAPHY:
Boldor O. and others, 1982. Plant Physiology. Didactical and Pedagogical Publishing. Bucharest.
Boldor O. and others, 1983. Plant Physiology-course practical. Didactical and Pedagogical Publishing. Bucharest..
Burzo I. and others, 1999. Plant physiology of culture. vol. I. The Editorial Poligraphic Science Enterprise. Chişinău.
Milică C. and others, 1982. Vegetal physiology. Didactical and Pedagogical Publishing. Bucharest.
Nicolae I., 2008. Plant Physiology. Sitech Publishing. Craiova.
Nicolae I., 2008. Practicum of vegetal physiology. Sitech Publishing. Craiova.
Nicolae I., 2010. Physiology of horticultural plants. Sitech Publishing. Craiova.
Simeanu V., Olimid V., 1990. Practical Guide to Plant Physiology. Reprography University of Craiova.
Şumălan R., 2006. Vegetal physiology. Eurobit Publishing. Timisoara.

CRYPTOGAMIC SYSTEMATIC

CODE: D30BIOL320
CREDITS: 4
COURSE HOLDER: Lecturer, PhD, Daniel RĂDUȚOIU
YEAR/SEMESTER: 2nd year/ 1st semester
NUMBER OF HOURS PER WEEK: 2 hours course, 2 hour practical course
NUMBER OF WEEKS: 14
COURSE TYPE: main subject

COURSE OBJECTIVES: Knowledge of the main characters of lower spontaneous plants, their scientific names as well as ecology and scientific importance. Assimilation of the main methods of plant investigation. Recognition of the main groups of studied organisms. Identifying the notions needed to classify the vegetable world. Differentiation between the main groups of the studied organisms. Knowing the ecology of the analyzed species. The presentation of the practical and scientific importance of the plants.
THEMES: General characters, classification, scientific and practical importance to Phyl representatives. Bacteria, and Phyl. Cyanobacteria. Phyl. Euglenophyta, Phyl. Chrysophyta, Phyl. Pyrrophyta, Phyl. Phaeophyta (brown algae), Phyl. Rhodophyta (red algae), Phyl. Chlorophyta, (green algae) Phyl. Bryophyta (vegetable Mushrooms) Phyl. Pteridophyta (ferns) - cellular organization of the talus, nutrition, highlighting the characters of inferiority and superiority to other related groups. Classification, representatives, scientific and practical importance.
LANGUAGE OF INSTRUCTION: Romanian
KNOWLEDGE ASSESSMENT: Final theoretical exam 70%, final practical exam 30%.
ASSESSMENT TYPE: exam
BIBLIOGRAPHY:
Busuioc G. & Răduțoiu D. 2010. *Botanica și fiziologia plantelor*. Edit. Sitech. Craiova.
Hodişan I., Pop I. 1976. *Botanica sistematică*. Edit. Did. şi Ped. Bucureşti.
Morariu I. 1965. *Botanica generală şi sistematică*. Ediţia a II-a. Edit. Did. şi Ped., Bucureşti.
Păun M. et al. 1980. *Botanica*. Edit. Did. şi Ped., Bucureşti,
Popescu Gh. 2000. *Botanica*. Edit. Universitaria, Craiova.
Răduțoiu D. 2008. *Botanică sistematică*. Vol. 1. Edit. Sitech. Craiova.
Tănase C., Mititiuc M. 2001. *Micologie*. Edit. Univ. "A.I. Cuza" Iași.
Tănase C., Șesan Tatiana Eugenia. 2006. *Concepte actuale în taxonomia ciupercilor*. Edit. Univ. "A.I. Cuza" Iași.

ENTOMOLOGY

CODE: D30BIOL321
CREDITS: 5
COURSE HOLDER: Senior Lecturer, PhD, Ovidiu Andrei ȚUCĂ
YEAR/SEMESTER: 3 st year/ 1 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 and understanding of general morphological, anatomical and physiological characteristics of insects, biology, ecology and theoretical and practical importance of insects... Knowledge of morphoanatomic characters of the insect type, reproduction and insect development; Knowledge of distinctive characters for all orders and families of insects, of the more important groups, with the retention and description of more common species or those of particular practical or scientific importance; Knowledge of aspects of insect biology and ecology.
THEMES: Insect general characters. External insect morphology. Anatomy and physiology of insects. Insect biology. Insect development. Ecology of insects. Insects systematic. Entognatha Class. Protura Order. Collembola Order. Diplura Order. Insecta Class. Zygentoma Order. Microcoryphia Order. Ephemeroptera Order. Plecoptera Order. Odonata Order. Orthoptera Order. Dictotype Order. Dermaptera Order. Phthiraptera Order. Thysanoptera Order. Hemiptera Order Hymenoptera Order. Coleoptera Order.
LANGUAGE OF INSTRUCTION: Romanian

KNOWLEDGE ASSESSMENT Examination 70%, practical workshops 30%.
ASSESSMENT TYPE: examen
BIBLIOGRAPHY:
Mitrea I., *Entomologie agricolă,* Editura Universitaria Craiova, 2005.
Mitrea I., C. Stan, O. Ţucă, *Entomologie vol. 1*, Editura Reprograph Craiova, 2008.
Mitrea I., C. Stan, O. Ţucă, *Entomologie generala*, Editura Reprograph Craiova, 2010.
Roşca I., I. Oltean, I. Mitrea, M. Talmaciu, C. Stan şi colab., 2011, "Tratat de Entomologie generală şi specială", Editura Alpha MDN, Buzău.

CELLULAR BIOLOGY

CODE: D30BIOL322
CREDITS: 4
COURSE HOLDER: Senior Lecturer, PhD, Daniel Alin OLIMID
YEAR/SEMESTER: 2nd year/1st semester
NUMBER OF HOURS PER WEEK: 2 hours course / 1 hours practical activities
NUMBER OF WEEKS: 14
COURSE TYPE: Speciality
COURSE OBJECTIVES: The knowledge of the basic cell structure and function.
THEMES: Cellular anatomy. The molecular organization and the function of the membrane. Cytoplasmic matrix. The descrition and the roles of the cytoplasmic organelles such as mitochondria, ribosome, endoplasmic reticulum, Golgi Apparatus, lysosomes, centrosome. Cytoskeletal elements: microtubules, microfilaments. Nucleus. Secretion and excretion of cellular products. Osmosis and cell membrane integrity. Cellular differentiation: cilia and flagella, microvilli. Celular cycles. Cell division: mitosis, meiosis. Blood cell. Immunity - humoral and cell-mediated, active and adoptive, artificial. Immunization.
LANGUAGE OF INSTRUCTION: Romanian.
KNOWLEDGE ASSESSMENT: Final theoretical exam 60%, final practical exam 20%, continous evaluation during the semester 20%.
ASSESSMENT TYPE: Colloquy
BIBLIOGRAPHY:
Alberts B., Johnson A., Lewis J., Raff M., Roberts K., Walter P., 2002, Molecular Biology of the Cell, 4th ed., New York, Garland Publishing.
Cooper G.M., 2000, The Cell, A Molecular Approach, 2nd ed., Sunderland (MA), Sinauer Associates, Inc..
Cruce M., 2002, Biologie Celulară si Moleculară, Ed. Aius Craiova.
Diculescu I., Onicescu D., Benga GH., Popescu L.M., 1983, Biologie Celulară, Ed. D.P. Bucureşti.
Frăsinel N., Verdes D., 1994, Biologie Celulară si Moleculară, Ed. Mirton, Timisoara.
Mixich F., Ardelean A., Principii fundamentale de biologie moleculară, Ed. Med. Univ. Craiova.

PARASITOLOGY

CODE: D30BIOL323
CREDITS: 3
COURSE HOLDER: Senior Lecturer, PhD, Diana OLIMID
YEAR/SEMESTER: 2rd year/1ST semester

NUMBER OF HOURS PER WEEK: 2 hours course / 1 hours practical activities
NUMBER OF WEEKS: 14
COURS TYPE: Optional
COURSE OBJECTIVES: The knowledge of the main species of animal parasites and the etiphatogenie, epidemiology, clinical simptoms, diagnosis and prevention of the parasitical diseases.
THEMES: Specific terminology. Symbiosis. Commensalism. Parasitism. Parasitical relations. Parasitical specificity. The action mode of the parasites. Biological way of transmission. Protective reaction of the body. The extermination of the parasites. Parasitical protozoa. Phylum Mastigophora. Phylum Opalinata. Trichomoniasis. Giardia. Giardiasis. Philum Rhizopoda. Intestinal Amebiosis. Phylum Apicomplexa. Toxoplasmosis. Plasmodium. Paludism. Pneumocystis carinni. Patogene fungus. Major animal and human Helminthiasis. Helminths – evolution, infestation, prevention. Phylum Plathelminthes and Nemathelminthes.
LANGUAGE OF INSTRUCTION: Romanian.
KNOWLEDGE ASSESSMENT: Final theoretical exam 60%, final practical exam 20%, continous evaluation during the semester 20%.
ASSESSEMENT TYPE: Exam
BIBLIOGRAPHY:
Gherman Ion, 1993, Compendiu de parazitologie clinică, Ed. All, Bucureşti.
Gherman Ion, 1994, Parazitologie clinica, Ed. All, Bucuresti.
Olteanu Gh., Codreanu Balcescu D. and others, 1999, Parazitozoonoze, Ed Viata medicala românească.
Olteanu Gh., Codreanu Balcescu D. and others, 2001, Poliparazitismul, Ed. Ceres.
Niculescu, Al.; Dida, I., 1998, Parazitologie veterinară, Ed. Ceres, Bucureşti.
Panaitescu Dan, 1994, Microbiologie, Parazitologie, Ed. Uranus, Bucureşti.
Rădulescu Simona, 2000, Parazitologie medicală, Ed. All, Bucureşti.

NATURE PROTECTION

CODE: D30BIOL324
CREDITS: 3
COURSE HOLDER: Lecturer, PhD, Daniel RĂDUȚOIU
YEAR/SEMESTER: 2nd year/ 1nd semester
NUMBER OF HOURS PER WEEK: 2 hours course, 2 hour practical activities
NUMBER OF WEEKS: 14
COURSE TYPE: optional
COURSE OBJECTIVES: Knowledge of Flora and Farming Fund of Romania, their distribution on the territory of Romania. Nature protection in the world and in Romania. The Protected Areas Network (the reservations in Romania) and the objectives that are required to be protected.
THEMES Nature protection and environmental protection - international and national priority for sustainable development; International conferences on environmental issues. International conventions and international organizations involved in environmental protection and biodiversity conservation issues. Human-nature impact. General characterization: over exploitation of species; Over exploitation of habitats; Deterioration of ecosystems through construction and arrangement for economic and social purposes; Pollution of living environments and effects on livestock; Ecoprotective actions and their complex significance: biological, social, ethical and aesthetic, cultural. Semantic considerations: ecological crisis, the environment, environmental types, sustainable development, biodiversity, nature conservation, ecological reconstruction, national park,

natural reserves, natural monument, biosphere reserve. Some aspects of nature protection worldwide. Overall characterization. Some aspects of nature protection worldwide: National Parks and Natural Reserves in Europe; National Parks and Asian Nature Reserves; National Parks and Nature Reserves in Africa; National Parks and Nature Reserves in North America; National parks and nature reserves in Central and South America; National parks and nature reserves in Australia and New Zealand. Nature protection and environmental protection in Romania.

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: colloquy

BIBLIOGRAPHY:

Borza Al., Boşcaiu N. – Introducere în studiul covorului vegetal. Edit. Acad., 1965.
Mohan Gh. ş.a. – Monumente şi rezervaţii ale naturii din Muntenia, 1983
Păun M., Maloş C. – Rezervaţii naturale din Oltenia şi necesitatea ocrotirii lor. St. şi Cercet. COMN, Slatina, 1973
S.O.S. – Natura în pericol. Culegere de texte, 1978

PHYSICAL EDUCATION III

CODE: D30BIOL325

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: Athletics: Long jump technique; 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 competitions conditions.

LANGUAGE OF INSTRUCTION: Romanian

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

ASSESSMENT TYPE: A/R

BIBLIOGRAPHY:

Barbu, D., (2010), Fotbal. Curs de bază pentru studenţi. Craiova, Edit. Universitaria
Dragomir, M., Albină, A., (2006), Atletism în şcoală, Ed. Universitaria, Craiova
Dragnea, A. C-tin. şi colab, (2006) - Educaţie fizică şi sport – teorie şi didactică - Editura FEST, Bucureşti.
Ortanescu Dorina, (2008), Gimnastica – componentă a educaţiei fizice şcolare, Ed.Universitaria, Craiova
Orţănescu Dorina, 2008, Gimnastica- componentă a educaţiei fizice şcolare, Editura Universitaria Craiova
Raţă G., Ghe. Raţă (2008) – Educaţia fizică şi metodica predării ei – Editura PIM, Iaşi.
Ungureanu, A. (2009) - Metodica educaţiei fizice şi sportului - Editura Universitaria, Craiova.

Ţifrea, C., (2002) - Teoria şi metodica atletismului - Editura Doreco, Bucureşti.

BIOCHEMISTRY

CODE: D30BIOL426
CREDITS: 4
COURSE HOLDER: Senior Lecturer, PhD, Georgeta CIOBANU
YEAR/SEMESTER: 2st year/ 2st semester
NUMBER OF HOURS PER WEEK: 2 hours course, 1 hours practical course
NUMBER OF WEEKS: 14
COURSE TYPE: fundamental
COURSE OBJECTIVES:
Students will be able to explain and apply the main concepts, theories and methods of structural and functional characterization of biological molecules.
Solving some punctual requirements by identifying and using specific notions and concepts of biochemistry.
Apply biochemistry principles and methods to solve a biology-specific problem and identify possible conclusions
Obtain and interpret an experimental set of experimental data on a process, phenomenon or biological structure using biochemistry-specific methods, techniques and devices
Elaboration of a material (portfolio) containing text, data tables, graphical representations and images using software applications, based on the results obtained in practical biochemical works
Realization and presentation of a small-scale synthesis paper on a topical topic on molecular issues relevant to the organization and functioning of the living world, using sources of documentation both in Romanian and in an international language.
THEMES: Cellular organization and chemical composition of living matter. General characteristics of biomolecules: directionality, informational content, hierarchy, three-dimensional architecture. Forces involved in interactions between biomolecules and the importance of conformational complementarity.
Proteins. Carbohydrates, lipids. Introduction to the metabolism study. Fermentation - Biological and Biotechnological Importance.
LANGUAGE OF INSTRUCTION: Romanian
KNOWLEDGE ASSESSMENT: exam answers 70%, final answers for workshops 10%, periodical assessment through practical tests 10%, continuous assessment throughout semester 5%, activities such as homework/ essays/ papers/ translations/ projects 5%.
ASSESSMENT TYPE: exam
BIBLIOGRAPHY:
Note de curs, în format printat şi electronic
Champe PC, Harvey RA, Ferrier D. (2012) Biochimie ilustrată, Cuculici GP, Gheorghiu AW (ed), ediția a 4a, Ed. Medicală Calisto, București
Campbell PN, Smith AD. (2004) Biochimie ilustrată, Editura Academiei Române
Ciobanu G. Acizi nucleici şi proteine, Ed. Universitaria Craiova.
Alberts B, Johnson A, Lewis J, Raff M, Roberts K, Walter P, (2002) Molecular Biology of the Cell, 4th edition, Garland Science, New York.

THE SYSTEMATICS OF VERTEBRATES

CODE: D30BIOL427
CREDITS: 4
COURSE HOLDER: Senior Lecturer, PhD, Bălescu Carmen Daniela
YEAR / SEMESTER: 2nd year/ 2nd semester
NUMBER OF HOURS PER WEEK: 2 course hours, 2 practical work hours
NUMBER OF WEEKS: 14
TYPE OF DISCIPLINE: fundamental (obligatory)
OBJECTIVES OF THE COURSE:
*Classification of the main classes of vertebrates: Pisces, Amphibia, Reptilia, Aves, Mammalia in conformity with the recent research. *Gaining knowledge about the distinctive characteristics concerning the biology of the representative species of vertebrates in both our country and the world. *Establishing the phylogenetic origins and ties between different taxonomical groups, as well as their evolution in the context of the change in environmental conditions (going from the aquatic environment to the terrestrial one).* Gaining knowledge on the role of vertebrates in nature and in man's life, on the protection status and the main protection measures.* Forming and developing observational skills, recognizing the main vertebrate species in Romania (fish, amphibians, reptiles, birds, mammals) based on key determining and characterization features studied during course hours.
THEMES: Phylum Chordata. Types of classifications. Systematics of urochordates, cephalochordates. Vertebrates. Agnatha Superclass. Systematics: Myxinii Class, Cephalaspidomorphi (Hyperoartia) Class. The origin, evolution and importance of phylogenetics of protochordates and agnathes. Infraphylum Gnathostomata. Group Pisces. Systematics of nowadays fish. Class Chondrichthyes: Subclass Elasmobranchii: Group Selachii (Selachimorpha). Group Batoidea. Superclass Osteichthyes: 1. Class Actinopterygii. Subclass Chondrostei Subclass Neopterygii: Infraclass Holostei, Infraclass Teleostei. 2. Class Sarcopterygii – Subclass Actinistia and Dipnoi. Class Amphibia. Systematics of nowadays amphibians. Orders: Gymnophiona, Urodela, Anura. Class Reptilia. Systematics of nowadays reptiles. 1. Subclass Anapsida – Order Testudines. 2. Subclass Diapsida. Infraclass Archosauromorpha – Order Crocodylia. Infraclass Lepidosaurimorpha: Order Rhynchocephalia. Infraclass Lepidosaurimorpha: Order Squamata with Suborder Lacertilia and Serpentes. Class Aves. Systematics of nowadays birds: Subclass Neornithes. Infraclass Palaeognathae, Infraclass Neognathae Class Mammalia. Classification of nowadays mammals. Subclass Prototheria: Order Monotremata. Subclass Theria: Infraclass Marsupialia. Infraclass Eutheria. Origin and evolution of vertebrates. The importance of vertebrates. Protection measures
TEACHING LANGUAGE: Romanian
KNOWLEDGE ASSESSMENT: 50% course notions + 50% practical notions (50% practical notions + 40% the ability to recognize the representative species in our country by using the keys of determination and to fit them into a certain taxonomic group: class, order, family, specifying the morphological characteristics of the species, data regarding species biology, spread, importance + 10% activity during the semester)
ASSESSMENT TYPE: oral exam
SELECTIVE BIBLIOGRAPHY:
Bălescu Carmen, 2004: *Zoologia vertebratelor*, Curs universitar, Edit. Sitech, Craiova.
Bălescu Carmen, Orzaţă Narcisa, 2007: - *Elemente de Zoologia vertebratelor*, Edit. Sitech, Craiova.
Ceuca T., Valenciuc N., Popescu A., 1983: *Zoologia vertebratelor*, Editura Eidactică şi Pedagogică, Bucureşti.

Fauna de vertebrate a României.

COMPARATIVE ANATOMY II

CODE: D30BIOL428
CREDITS: 4
COURSE HOLDER: Lecturer, PhD, Carmen VLĂDULESCU
YEAR/SEMESTER: 2nd year/ 2nd semester
NUMBER OF HOURS PER WEEK: 2 hours course, 1 hour practical course
NUMBER OF WEEKS: 14
COURSE TYPE: main subject
COURSE OBJECTIVES: Knowledge and understanding of structures (tissues, organs, systems) and phylogenetic meanings. Acquiring information on the structure of the animal body to understand the composition and functioning of living organisms and how organ systems evolved into different classes of vertebrates in the context of changing environmental conditions (shifting from the aquatic environment to the terrestrial environment) and way of life in their long phylogenetic history. Understanding the general organization and structure of vertebrates. Understanding evolutionary meanings of changes in structures in vertebrates.
THEMES: Vertebrate series analyzers: skin receptors, visual analyzer, stato-acoustic analyzer, tasteful, olfactory and kinesthetic analyzer. The digestive system in the vertebrate series. Supplementary glands in the vertebrate series. The respiratory system in the vertebrate series. The circulatory system in the vertebrate series. Blood. The lymphatic system. Excretory system in the vertebrate series. Kidney types and nephron types in vertebrates. The genital system in the vertebrate series.
LANGUAGE OF INSTRUCTION: Romanian
KNOWLEDGE ASSESSMENT: Final theoretical exam 60%, final practical exam 20%, continuous assessment during the semester 20%.
ASSESSMENT TYPE: exam
BIBLIOGRAPHY:
Constantinescu Gh., Palicica R., 2006. Comparative anatomy (domestic mammals, birds, humans) and Animal physiology concept, University Publishing House Orizonturi, Timisoara.
Constantinescu GH., Radu C., Palicica R., 1982. Topographic Anatomy of Domestic Mammals, Facla Publishing House, Timişoara.
Dornescu T., Necrasov Olga, 1968. Comparative anatomy of vertebrates, Volume I, Teaching education and pedagogic, Bucharest.
Mişcalencu D. şi colab., 1975. Comparative vertebrate anatomy - Practical worksheet. Didactic and Pedagogical Publishing House, Bucharest.
Paştea E., Mureşianu E., Constantinescu GH., Coţofan V., 1978. Comparative Anatomy of Domestic Animals, Didactic and Pedagogical Publishing House, Bucharest.
Sorescu Constantina, 1993. Comparative Anatomy of Vertebrates, Publishing House Oltenia, Craiova.
Sorescu Constantina, 1993 Practitioner of Comparative Anatomy of Vertebrates, Reprography of the University of Craiova.

GENERAL VEGETAL PHYSIOLOGY II

CODE: D30BIOL429
CREDITS: 4
COURSE HOLDER: Lecturer PhD, BUŞE DRAGOMIR LUMINIŢA

YEAR/SEMESTER: II/ II
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 plant organisms and acquiring practical skills for the experimental demonstration of the main vital plant manifestations.
THEMES: Carbon Nutrition - General Notions. Photosynthesis - mechanism, influence of external and internal factors, Chemosynthesis, heterotrophic nutrition, mixedotrophy nutrition.
Aerobic and anaerobic respiration
Plant growth: growth of plant organs, regulating growth substances, influence of external factors
Development: Development cycle characteristics, influence of external factors. Resting: seminal and bud rest
Plant movements
LANGUAGE OF INSTRUCTION: Romanian
KNOWLEDGE ASSESSMENT: answers to exam course 70 % and answers to Laboratory works 30 %
ASSESSMENT TYPE: exam
BIBLIOGRAPHY:
Boldor O. and others, 1982. Plant Physiology. Didactical and Pedagogical Publishing. Bucharest.
Boldor O. and others, 1983. Plant Physiology-course practical. Didactical and Pedagogical Publishing. Bucharest..
Burzo I. and others, 1999. Plant physiology of culture. vol. I. The Editorial Poligraphic Science Enterprise. Chişinău.
Buşe Dragomir Luminiţa., 2009. Vegetal physiology. Sitech Publishing. Craiova
Buşe Dragomir Luminiţa., 2011. General plants physiology. Sitech Publishing. Craiova
Peterfi Şt., Sălăgeanu N., 1972. Plant physiology. Didactical and Pedagogical Publishing. Bucharest.
Simeanu V., Olimid V., 1990. Practical Guide to Plant Physiology. Reprography University of Craiova.
Şumălan R., 2006. Vegetal physiology. Eurobit Publishing. Timisoara.

SYSTEMATIC OF PHANEROGAMS

CODE: D30BIOL431
CREDITS: 4
COURSE HOLDER: Lecturer, PhD, Daniel RĂDUȚOIU
YEAR/SEMESTER: 2nd year/ 2nd semester
NUMBER OF HOURS PER WEEK: 2 hours course, 2 hour practical course
NUMBER OF WEEKS: 14
COURSE TYPE: main subject
COURSE OBJECTIVES: Knowledge and recognition of the major spontaneous species in Romania's flora. Highlighting the transition from the lower to the higher (evolution) and the progeny of some groups of others (phylogeny). Among the specific objectives of this discipline are: the assimilation of the main methods of plant investigation; Recognition of the main groups of the studied organisms; Differentiation between the main groups of the studied

organisms; Knowing the ecology of the analyzed species; The presentation of the practical and scientific importance of plants.
THEMES: The general characters of the vegetative and reproductive apparatus in the upper vascular plants, on the biochemical novelties (lignin and cutin) as well as the histological ones: the vascular bundles and the central cylinder (the stella); Epidermis with stomata and trichomes. Fenerogamous framing of Spermatophyta with two Subphylums: Pinophytina (Gymnospermae) and Magnoliophytina (Angiospermae). The two subphylum present: general characters, classification, representatives, scientific and practical importance.
LANGUAGE OF INSTRUCTION: Romanian
KNOWLEDGE ASSESSMENT: Final theoretical exam 70%, final practical exam 30%.
ASSESSMENT TYPE: exam
BIBLIOGRAPHY:
Busuioc G. & Răduțoiu D. 2010. *Botanica și fiziologia plantelor*. Edit. Sitech. Craiova.
Ciocârlan V. 2009. *Flora ilustrată a României*. Pteridophyta et Spermatophyta. Edit. Ceres, Bucureşti.
Hodişan I., Pop I. 1976. *Botanica sistematică*. Ed. Did. şi Ped. Bucureşti.
Morariu I. 1965. *Botanica generală şi sistematică*. Ediţia a II-a. Edit. Did. şi Ped., Bucureşti.
Păun M. et al. 1980. *Botanica*. Edit. Did. şi Ped., Bucureşti,
Popescu GH. 1995. *Botanica sistematică II*, *Cormobionta*. Reprogr. Univ. din Craiova.
Popescu GH. 2000. *Botanica*. Edit. Universitaria, Craiova.

VEGETAL HISTOLOGY

CODE: D30BIOL432
CREDITS: 4
COURSE HOLDER: Senior Lecturer, PhD, Cătălin George SIMEANU
YEAR/SEMESTER: IIst Year / IIst Semester
NUMBER OF HOURS PER WEEK: 2 hours of lecture, 1 hours of practical work
NUMBER OF WEEKS: 14
COURSE TYPE: Additional
COURSE OBJECTIVES: Acquiring the concepts of plant histology. Acquiring and deepening knowledge of histology and plant embryology; Forming the skill to perform microscopic preparations using appropriate dyes to study different types of tissues and embryos; Making semifixes and fix preparations necessary for scientific research and the department.
THEMES: Definition, classification and structure for plant tissues: meristematic, protective, parenchymal, conductive, mechanical, secretory and sensitive. Antera, microsporogenesis and microgametogenesis in gimnosperm and angiosperms. Ovulation, macrosporogenesis and macrogametogenesis in gimnosperm and angiosperms. Embryogenesis in bryophytes, pteridophytes, gimnosperm and angiosperms. Types of embryo development and structure..
LANGUAGE OF INSTRUCTION: romanian.
KNOWLEDGE ASSESSMENT: course notions - 70%, practical notions - 30%.
ASSESSMENT TYPE: oral exam
BIBLIOGRAPHY:
Acatrinei Gh. 1975. *Biologia celulei vegetale,* Ed. Ştiinţifică şi Enciclopedică, Bucureşti,
Andrei M. 1978. *Anatomia plantelor,* Ed. Did. şi Ped. Bucureşti,
Anghel I. 1979. *Citologie vegetală*, Ed. Did. şi Ped Bucureşti,
Bavaru A., Bercu Rodica. 2002. *Morfologia şi anatomia plantelor,* Ed. ExPonto,
Simeanu, C. G., 2014. *Morfologie şi Anatomie vegetală*. Editura SITECH, Craiova, 413 pag

Simeanu V., Popescu Gh. 1980. *Morfologia şi anatomia plantelor,* Repr. Universităţii din Craiova.
Simeanu V., Popescu Gh. 1992. *Lucrări practice la morfologia şi anatomia plantelor,* Repr. Universităţii din Craiova.
Şerbănescu - Jitariu Gabriela, Toma C. 1980. Morfologia şi anatomia plantelor, Ed. Did. şi Ped. Bucureşti.
Toma C., Niţă Mihaela. 1995. *Celula vegetală,* Ed. Univ. A. I. Cuza, Iaşi.

ORNITHOLOGY

CODE: D30BIOL434
CREDITS: 2
COURSE HOLDER: Senior Lecturer, PhD, Bălescu Carmen Daniela
YEAR/SEMESTER: 2nd year / 2nd semester
NUMBER OF HOURS PER WEEK: 2 course hours, 1 practical work hour
NUMBER OF WEEKS: 14
TYPE OF DISCIPLINE: Specialized (Optional)
COURSE OBJECTIVES: Knowing birds from a morphological, anatomical, systematic and spreading point of view. Obtaining information concerning bird behaviour (notions of communication, locomotion, feeding, reproduction, migration). Gaining knowledge about taxonomic position, origin and evolution of birds. Knowing the role of birds in nature, human life, as well as national and global protection measures. Learning the main methods and means used in the study of birds. Forming and developing the skills and abilities of observing, recognizing, identifying and characterizing the main species of birds (with emphasis on those in Romania) based on the acquired theoretical knowledge.
THEMES: Introduction to ornithology. Origin and evolution of birds. Ethology notions: locomotion and flight of birds; feeding of birds, bird communication; reproduction (nuptial parade, nesting, nest construction, egg laying, caring for chickens). Parasitism in the world of birds. Migration and orientation in the world of birds. Zoogeographical bird categories: polar birds, from temperate areas, from tropical forests, savannah birds, aquatic birds (marine and freshwater). The role of birds in nature and in human life. Bird protection measures.
TEACHING LANGUAGE: Romanian
KNOWLEDGE ASSESMENT: 50% answers from course notions + 50% practical work (performing the practical work, direct participation in discussions, interest, attendance)
ASSESMENT TYPE: colloquium
SELECTIVE BIBLIOGRAPHY:
Alderton D., 2008. Păsările lumii - Enciclopedie completă ilustrată. Traducere Iliescu Mirela, Consultant ştiinţific Hărăguş Isabela. Editura Aquila, Oradea.
Bălescu Carmen, 2004. Zoologia vertebratelor. Curs universitar, Editura Sitech, Craiova.
Bălescu Carmen, Orzaţă Narcisa, 2007: Elemente de Zoologia vertebratelor, Editura Sitech, Craiova.
Bibby C, Jones M., Marsden S., 2000. Metode de teren pentru studiul păsărilor. Versiune românească realizată de Societatea Ornitologică Română
Bruun B., Delin H., Svensson L., 1999. Păsările din România şi Europa. Determinator Ilustrat. Hamlyn Guide. Versiunea Românească de Munteanu D . Octopus. Pub. Group. Hamlyn, London.
Cătuneanu I. şi colab., 1978. Aves. Fauna R.S.R. Vol XV, fasc 1. Editura Academiei R.S.R., Bucureşti.

Kessler E., 1994. Originea şi evoluţia păsărilor - Introducere în ornitologie, fascicula 1. Publicaţiile Societăţii Ornitologice Române.
Kessler E., 1994. Elemente de ecologie a păsărilor - Introducere în ornitologie, fascicula 2. Publicaţiile Societăţii Ornitologice Române.
Munteanu D., Munteanu Claudia, Galoş C., 2000. Îndrumător de protecţia păsărilor. Publicaţiile Societăţii Ornitologice Române. Nr.11., Cluj-Napoca.
Munteanu D., 2005. Aves (păsări). În Botnariuc N. şi Tatole V. (eds). Cartea Roşie a vertebratelor din România: 85-173. Muz.Nat.Ist.Nat. "Gr. Antipa", Bucureşti.
Munteanu D., 2009. Păsări rare, vulnerabile şi periclitate din România, Editura Alma Mater Cluj-Napoca.
Radu D., 1983. Mic atlas ornitologic – Păsările lumii. Editura Albatros, Bucureşti.
Radu D., 1984. Păsările în peisajele României. Editura Sport-Turism, Bucuresti.

PHYSICAL EDUCATION IV

CODE: D30BIOL435
CREDITS: 1
COURSE HOLDER: Senior Lecturer, PhD, Daniel Ciocănescu
YEAR/SEMESTER: 2nd 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: 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:
Barbu, D., (2010), Fotbal. Curs de bază pentru studenţi. Craiova, Edit. Universitaria
Dragomir, M., Albină, A., (2006), Atletism în şcoală, Ed. Universitaria, Craiova
Dragnea, A. C-tin. şi colab, (2006) - Educaţie fizică şi sport – teorie şi didactică - Editura FEST, Bucureşti.
Ortanescu Dorina, (2008), Gimnastica – componentă a educaţiei fizice şcolare, Ed.Universitaria, Craiova
Orţănescu Dorina, 2008, Gimnastica- componentă a educaţiei fizice şcolare, Editura Universitaria Craiova
Raţă G., Ghe. Raţă (2008) – Educaţia fizică şi metodica predării ei – Editura PIM, Iaşi.
Ungureanu, A. (2009) - Metodica educaţiei fizice şi sportului - Editura Universitaria, Craiova.
Ţifrea, C., (2002) - Teoria şi metodica atletismului.

IIIST YEAR OF STUDY

general genetics I

CODE: D30BIOL536
CREDITS: 5
COURSE HOLDER: Senior Lecturer, PhD, Daniel Alin OLIMID
YEAR/SEMESTER: 3rd year/1st semester
NUMBER OF HOURS PER WEEK: 2 hours course / 1 hours practical activities
NUMBER OF WEEKS: 14
COURSE TYPE: Obligatory
COURSE OBJECTIVES: The knowledge of the notions regarding cell division, mitosis, meiosis, chromosomes and genes.
THEMES: Specific terminology. The celular cycles. Cell division. Cytokinesis and kariokinesis. Stages of mitosis. Meiosis. Chormosomes – structure and morphological forms. Telomeric regions. Nucleic acids: DNA, RNA. DNA repair. Patterns of protein synthesis. Translation. Transcription. Genes. Human gene diversity and expression patterns. Alleles. Mutations. The human genome. Codon usage and genome evolution. Human genome project. Principles of human heredity. Mendelian inheritances. Caryotypiques. Autosomal dominant/recesive transmission. Dermatoglyphics. Fingerprints.
LANGUAGE OF INSTRUCTION: Romanian.
KNOWLEDGE ASSESSMENT: Final theoretical exam 60%, final practical exam 20%, continous evaluation during the semester 20%.
ASSESSMENT TYPE: Exam
BIBLIOGRAPHY:
Avent N.D., Reid ME, 2000, The Rh, blood group system Blood, 95:375-387.
Bembea M., 2000, Genetica medicala şi clinică, Edit. Universităţii din Oradea.
Buteică E., Burada F., 2007, Genetică umană - Caiet de lucrări practice, Editura Sitech.
Covic M., Ştefănescu D., Sandovici I., 2004, Genetică medicală, Editura Polirom.
Gorun N., 1998, Boli genetice dominante ale membrelor., Ed. Curtea Veche.
Hertzog Zorica Ileana, 1998, Genetică umană., Ed. Sitech, Craiova.
Keller, Evelyn Fox, The Century of the Gene. Cambridge, Harvard up 2001.
Rogoz I., Genetică medicală, Editura Medicală Universitară, Craiova.
Russel P.I., 1992, Genetics, third edition, Harper Collins Publishers, New York.

GENERAL ANIMAL PHYSIOLOGY I

CODE: D30BIOL537
CREDITS: 5
COURSE HOLDER: Lecturer PhD. Luminița Mariana OLARU
YEAR/SEMESTER: 3rd 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: Knowing and studying comparatively the functions of different groups of animals; the understanding of the complexity of the physiological mechanisms, the

normal functioning of the animal body and the way it adapts to the variations of the internal and external environment..
THEMES: The general physiological properties of the body. Driving excitement states. Physiology of nervous centers. Cutaneous sensitivity. Gustative sensitivity. Olfactory sensitivity. Kinesthetic sensitivity. Visual sensitivity. Hearing sensitivity. Vestibular sensitivity. Electrical sensitivity. Muscle tone. Postural activities. The kinetic activities. Upper nerve activity. The vegetative nervous system. Physiology of effectors.
LANGUAGE OF INSTRUCTION: Romanian
KNOWLEDGE ASSESSMENT: Final theoretical exam 60%, final practical exam 20%, continuous assessment during the semester 20%.
ASSESSMENT TYPE: Exam
BIBLIOGRAPHY:
Berne R. M., Levy M. N., 2006. Principles of physiology, 4th Ed., Elsevier Mosby, Philadelphia.
Hăulică, I., 2007. Human Physiology, Medical Ed., Bucharest.
Hill, R.W., Wyse, G.A., Margaret Anderson, 2004. Animal Physiology, 1st Ed., Sinauer Associates, Inc. Publishers, Sunderland, Massachusetts, U.S.A.
Năstăsescu, Gh., Ungureanu Luminiţa, 1998. The physiology of animals. University course, Vol. I, Ed. Sitech, Craiova.
Prosser, C.L., 1991. Comparative Animal Physiology, 4th Ed., Wiley-Liss, New York.
Rastogi, S.C., 2007. Essentials of Animal Physiology, 4th New Age International Publishers, New Delhi.
Ungureanu Luminiţa; Năstăsescu, Gh., 1997. Animal physiology. Laboratory work, Ed. Sitech, Craiova.
Willmer, P.G.; Stone, G.N.; Johnston, I. A., 2005. Environmental physiology of animals, Second Ed., Blackwell Publishing Ltd.

GENERAL ECOLOGY I

CODE: D30BIOL538
CREDITS: 5
COURSE HOLDER: Senior Lecturer, PhD, Dragoș Mihail ȘTEFĂNESCU
YEAR/SEMESTER: third year/ fifth semester
NUMBER OF HOURS PER WEEK: 2 hours course, 1 hour practical course
NUMBER OF WEEKS: 14
COURSE TYPE: fundamental
COURSE OBJECTIVES: Acquiring information regarding the structure and functions of supraindividual biological systems (populations, communities and the entire biosphere). Understanding the structure and functioning of (ecosystem energy, minerals circulation and self-control) natural ecosystems.
THEMES: Introduction to ecology, object and definition, history of ecology. Theoretical bases of ecology; The ecosystem - the concept of ecosystem; Conceptual directions regarding the ecosystem; Ecosystem components - biotope, communities. The structure of the biotope.; The structure of natural communities - the community as a level of organization of living matter; community structure; indices of diversity; similarity indices; functional diversity; interspecific relationships - interspecific competition; competitive exclusion principle.
LANGUAGE OF INSTRUCTION: romanian
KNOWLEDGE ASSESSMENT: exam answers (60% course + 30% practical course) and continuous assessment throughout semester (10%).
ASSESSMENT TYPE: exam

BIBLIOGRAPHY:

Botnariuc N., Vădineanu A., ,, Ecologie,, Ed. Did. şi Ped., Bucureşti 1982
Krebs C. J. ,,Ecology: The Experimental Analysis of Distribution and Abundance 6th ed. Benjamin Cummings, San Francisco 2009
Molles M. C.,, Ecology- Concepts& Applications,, Mc Graw-Hill Publishing Company, 2008
Pârvu C., ,, Ecologie generală,, Ed. Tehnică, Bucureşti 1999
Stugren B., ,, Bazele ecologiei generale,, Ed.: Ştiinţifică şi Enciclopedică, Bucureşti 1982
Ștefănescu, D. M. – Elemente de ecologie generală (ecosistemul) – Editura Sitech, 2015.
Ștefănescu, D. M. - Elemente de ecologie generală (populația și comunitatea) – Editura Sitech, 2014.

PHYTOPATHOLOGY

CODE: D30BIOL539
CREDITS: 5
COURSE HOLDER: Prof. dr. Rodi MITREA
YEAR/SEMESTER: anul III/ sem. V
NUMBER OF HOURS PER WEEK 2 ore curs, 2 ore lucrări practice
NUMBER OF WEEKS: 14
TYPE OF DISCIPLINE: Specialty
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.
COURSE CONTENTS: Phytopathology - object of study, importance and practical implications, links with other sciences, branches, Types of losses due to plant diseases, General concepts of diseases and phytopathogenic agents, Classification of diseases; Host - parasitic plant interference; Changes suffered by plants in the pathogenesis process, Parasitism from origins to the present and its consequences; Parasitic traits of pathogens; Transmission and spread of pathogens, General features of phytopathogenic viruses (morphology, chemical composition, structure, properties, multiplication, nomenclature and classification), The main plant viroses, the mode of transmission and spread, the possibilities of prevention and combat, General features of myoplasms and phytopathogenic bacteria. The main mycoplasmosis and bacteriosis of plants, mode of transmission and spread, possibilities of prevention and control, General characteristics of phytopathogenic fungi, Types of vegetative apparatus; Resistance organs of the vegetative apparatus; Possibilities of multiplication; General classification, The Protista Kingdom. General characters; classification, Chromista kingdom, Oomycota phylum, Oomycetes class; General characters, classification, representative mushrooms and diseases of economic importance produced by them, Fungi Kingdom, Chytridiomycota phylum. General characters, important representatives, Ascomycota phylum, diseases produced by representative fungi,symptomatology,pathogenesis, epidemiology and controling possibilities, Basidiomycota phylum. General characters, classification, representative fungi of the Ustilagomycetes class, diseases produced by them and possibilities for control, Basidiomycota phylum. General characters, classification, representative fungi of the Uredinomycetes class, diseases produced by them and possibilities for control, Conidial ascomycetes: Hyphomycetes and Coelomycetes classes. General characters, classification, representative fungi. fruiting Forms of the fungi. Symptomatology, pathology, epidemiology and controling possibilities.
LANGUAGE OF INSTRUCTION: romanian

KNOWLEDGE ASSESSMENT: exam answers 70% course and 30% practical course.
ASSESSMENT TYPE: exam
REFERENCES:
Eliade, Eugenia, Fitopatologie, Ed. II, Tipografia Universităţii din Bucureşti, 1990.
Mitrea, Rodi, Fitopatologie, Ed. Universitaria, Craiova, 2004.
Mitrea, Rodi, Paraziţi vegetali, Ed. Universitaria, Craiova, 2005.
Mitrea, Rodi, Boli cheie ale principalelor specii horticole, Ed. Universitaria, Craiova, 2006.
Pârvu, M., Fitopatologie, Ediţia a 2-a, Ed. Napoca Star, 1998.
Popescu, Gh., Fitopatologie, Ed. Tehnică, Bucureşti, 1993.
Tănase, Gh., Mititiuc, M., Micologie, Edit. Univ. "A. I. Cuza", Iaşi, 2001.
Tănase, C., Şesan, Tatiana, Eugenia, Concepte actuale în taxonomia ciupercilor, Edit. Univ. "A. I. Cuza", Iaşi, 2006.

EVOLUTIONISM

CODE: D30BIOL540
CREDITS: 5
COURSE HOLDER: Lecturer, PhD, Carmen VLĂDULESCU
YEAR/SEMESTER: 3rd year/ 1 st semester
NUMBER OF HOURS PER WEEK: 2 hours course, 2 hours seminar
NUMBER OF WEEKS: 14
COURSE TYPE: main subject
COURSE OBJECTIVES: Knowledge of the current conception of the origin and evolution of life on Earth, as well as of the main moments that led to the conception of this concept: scientific personalities, discoveries, theories. Underlining the importance of Charles Darwin's theory for understanding the mechanisms underlying species evolution. The contribution of molecular biology to support Darwinian theory. Knowledge of the current classification system of the living world. Identification of mechanisms for generating and amplifying / reducing genetic variability in populations; Understanding the importance of maintaining species diversity as a guarantee of the continuity of life on Earth. Presenting modern methods for assessing the genetic diversity of species.
THEMES: Evolution of theories and hypotheses regarding the origin of life. Spontaneous generation theory; Panspermy theory; Life Stability Theory; Biochemical theory of evolution (Oparin-Haldane theory). Other theories. Theory of bio-structure. The cold theory of Simionescu and Dénes. The Genotype Theory. Monod's hypothesis. The theory of ribbing. The theory of the egoistic gene and the extended phenotype theorem. The Origin of the Universe. The Big Bang. Black holes and multiple universes. Big-Crunch and the hypothetical end of the Universe Biological Evolution. Classical pre-Darwinist evolutionary theories. Darwinian theory of evolution: the premises of its emergence. Darwinian Factors of Evolution. The main post-Darwin currents. Neo-Darwinism, Neo-Lamarckism. Synthetic theory of evolution. The factors of evolution. Microevolution and macroevolution of creatures. Evidence of Evolution. Cytological, embryological, biochemical and physiological evidences, serological, systematic, paleontological, bio-geographic, comparative anatomy. The origin and evolution of man. Considerations on humanization phenomena.
LANGUAGE OF INSTRUCTION: Romanian
KNOWLEDGE ASSESSMENT: Final theoretical exam 60%, continuous assessment during the semester 20%, elaborarea de referate 20 %.
ASSESSMENT TYPE: exam
BIBLIOGRAPHY:
BARROW J., 2008. The Origin of Universe, Humanitas Publishing House, Bucharest.

Botnariuc N., 1992. Evolutionism in impasse? Romanian Academy Publishing House, Bucharest.
Buican D., 1994. Revolution of evolution. Scientific Publishing House, Bucharest.
Ceapoiu N., 1988. Biological evolution. Microevolution and macroevolution. Academy Publishing House, Romanian, Bucharest.
Corneanu Mihaela, Corneanu I., 2005. General genetics and evolution of the genome. Publisher Universitaria, Craiova.
Dorobanţu Cornelia, 1982. General Biology (Notions of Evolutionism). University Press, Bucharest.
Darwin CH., 1958. The journey of a naturalist around the world on board the Beagle. Tineretului Publishing House, Bucharest.
Dawking R., 2001. The selfish gene. Technical Publishing House, Bucharest.
Gheţea L.G., 2008. "Evolutionism - Current theories about the origin and evolution of the living world. Biodiversity Generation Mechanisms and the Importance of converving it ". Ars Docendi Publishing House.
Mustaţă Gh., Mustaţă M., 2001. Origin, Evolution and Evolutionism. Vasile Goldis University Publishing House, Arad.
Mustaţă Gh., Mustaţă M., 2002. Homo sapiens sapiens L. - Origin and evolution. Vasile Goldis University Publishing House, Arad.
Singh S. 2008. Big Bang. The Origin of the Universe. Humanitas Publishing House, Bucharest
Stringer C., Andrews P. 2006 - The Complete History of Human Evolution. Edition in Romanian, Aquila Publishing House.

GENERAL MICROBIOLOGY

CODE: D30BIOL541
CREDITS: 5
COURSE HOLDER: Assistant prof. PhD, Daniela Eleonora CIUPEANU
YEAR/SEMESTER: 3rd year/ 1st semester
NUMBER OF HOURS PER WEEK: 2 hours course, 1 hour practical course
NUMBER OF WEEKS: 14
COURSE TYPE: main subject
COURSE OBJECTIVES: Acquiring and understanding basic notions in the field of microbiology, notions used by students in the study and understanding of other specialized disciplines (cell biology, plant protection, biochemistry, molecular biology, modern biotechnology, etc.).
THEMES: Methods of research used in Microbiology. Microbiology relationships with other sciences. Bacteria and Archea. Growth and nutrition of prokaryotes. Metabolism of prokaryotic cells. Eukaryotic cell structure and functions. Fungi. Yeasts. Viruses. Pathogenic microorganisms. Influence of physical and chemical factors on microorganisms. Ecology of microorganisms. Microbiology of the environment. Microorganisms involved in biotechnology.
LANGUAGE OF INSTRUCTION: Romanian
KNOWLEDGE ASSESSMENT: Final theoretical exam 70%, continuous assessment during the semester 30%.
ASSESSMENT TYPE: exam
BIBLIOGRAPHY:
Ciupeanu Daniela, 2008. Microbiology. Universitaria Publishing House

Dragomir Felicia, Popa Daniela. 2002. Microbiology. Laboratory methods. Universitaria Publishing House.
Popa A., Popa Daniela, Dragomir Felicia. 1997. Microbiology elements of agricultural microbiology. Europe Publishing House
Popa A., Popa Daniela, Dragomir Felicia. 2002. General Microbiology, Universitaria Publishing House.
Popa A., Popa Daniela, Dragomir Felicia. 2002. Natural environments of microorganisms, Universitaria Publishing House.,2002
Zarnea G. 1990 – 1994. General Microbiology vol. I-V., Romanian Academy Publishing House, Bucharest.

GENERAL GENETICS II

CODE: D30BIOL642
CREDITS: 4
COURSE HOLDER: Senior Lecturer, PhD, Daniel Alin OLIMID
YEAR/SEMESTER: 3rd year/2nd semester
NUMBER OF HOURS PER WEEK: 2 hours course / 1 hours practical activities
NUMBER OF WEEKS: 10
COURSE TYPE: Obligatory
COURSE OBJECTIVES: The knowledge of the principles of molecular medificne, genetic diversity, the etiology of genetically determined diseases and mechanisms of oncogenesis.
THEMES: Sex determination and the Y chromosome. Blood types. Genetic counseling. Clinical and ethical aspects. Genetic risk assessment. Bloodline. Genetically determined diseases. Genetics of intermediary metabolism. Familial hypercholesterolemia. Genetics of atherosclerosis. Human type 1 diabetes and the insulin gene. Enzymatic diseases. The hyperphenylalaninemias. The molecular basis of blood diseases. The Thalassemia syndromes. The hemoglobinopathies (genetic disorders of hemoglobin). Sequence of mutation in the factor VIII gene of heamophiliacs. Down syndrome. The cytoskeleton and disease. The spectrum of cystic fibrosis mutations. Oral facial genetics. Colour vision and its genetic defects. Molecular genetics of muscular disorders. Genetic causes of hearing loss. Genetic diversity. The etiology of psychiatric diseases. Alzheimer's disease. Cancer and genomics. Progress in medical genetics. Disorders of sexual differentiation. Cloning.
LANGUAGE OF INSTRUCTION: Romanian.
KNOWLEDGE ASSESSMENT: Final theoretical exam 60%, final practical exam 20%, continous evaluation during the semester 20%.
ASSESSMENT TYPE: Exam
BIBLIOGRAPHY:

Avent N.D., Reid Me, 2000, The Rh, blood group system Blood, 95:375-387.
Bembea M., 2000, Genetica medicala şi clinică, Edit. Universităţii din Oradea.
Buteică E., Burada F., 2007, Genetică umană - Caiet de lucrări practice.Editura Sitech.
Covic M., Ştefănescu D., Sandovici I., 2004, Genetică medicală, Editura polirom.
Gorun N., 1998, Boli genetice dominante ale membrelor., Ed. Curtea Veche.
Hertzog Zorica Ileana, 1998, Genetică umană., Ed., Sitech, Craiova.
Keller, Evelyn Fox, The Century of the Gene, Cambridge, Harvard up 2001.
Rogoz I., Genetică medicală, Editura Medicală Universitară, Craiova.
Russel P.I., 1992, Genetics, third edition, Harper Collins Publishers, New York.

GENERAL ANIMAL PHYSIOLOGY II

CODE: D30BIOL643
CREDITS: 4
COURSE HOLDER: Lecturer PhD. Luminița Mariana OLARU
YEAR/SEMESTER: 3rd year/ 2nd semester
NUMBER OF HOURS PER WEEK: 2 hours course, 2 hours practical course
NUMBER OF WEEKS: 10
COURSE TYPE: Main subject
COURSE OBJECTIVES: Knowing and studying comparatively the functions of different groups of animals; the understanding of the complexity of the physiological mechanisms, the normal functioning of the animal body and the way it adapts to the variations of the internal and external environment.
THEMES: Endocrine system in invertebrates. Endocrine system in vertebrates. Digestion. Absorbtion. Internal environment. Physiology of the heart. Physiology of blood circulation in vessels. Breathing on invertebrates. Breathing on vertebrates. Energy metabolism. Thermoregulation. Excretion in invertebrates. Excretion in vertebrates. Reproductive function in male. The breeding function of the female body.
LANGUAGE OF INSTRUCTION: Romanian
KNOWLEDGE ASSESSMENT: Final theoretical exam 60%, final practical exam 20%, continuous assessment during the semester 20%.
ASSESSMENT TYPE: Exam
BIBLIOGRAPHY:
Berne R. M., Levy M. N., 2006. Principles of physiology, 4th Ed., Elsevier Mosby, Philadelphia.
Hăulică, I., 2007. Human Physiology, Medical Ed., Bucharest.
Hill, R.W., Wyse, G.A., Margaret Anderson, 2004. Animal Physiology, 1st Ed., Sinauer Associates, Inc. Publishers, Sunderland, Massachusetts, U.S.A.
Năstăsescu, Gh., Ungureanu Luminiţa, 1998. The physiology of animals. University course, Vol. II Ed. Sitech, Craiova.
Prosser, C.L., 1991. Comparative Animal Physiology, 4th Ed., Wiley-Liss, New York.
Rastogi, S.C., 2007. Essentials of Animal Physiology, 4th New Age International Publishers, New Delhi.
Ungureanu Luminiţa; Năstăsescu, Gh., 1997. Animal physiology. Laboratory work, Ed. Sitech, Craiova.
Willmer, P.G.; Stone, G.N.; Johnston, I. A., 2005. Environmental physiology of animals, Second Ed., Blackwell Publishing Ltd.

SPECIAL MICROBIOLOGY

CODE: D30BIOL644
CREDITS: 4
COURSE HOLDER: Assistant prof. PhD, Daniela Eleonora CIUPEANU
YEAR/SEMESTER: 3rd year/ 2 nd semester
NUMBER OF HOURS PER WEEK: 2 hours course, 1 hour practical course
NUMBER OF WEEKS: 10
COURSE TYPE: main subject
COURSE OBJECTIVES: Acquiring and understanding basic notions in the field of microbiology, notions that are used by students in the study and understanding of other specialized disciplines (cell biology, plant protection, biochemistry, molecular biology, modern biotechnology, etc.).

THEMES: Human host microorganisms. Pathogenity of microorganisms. Infection and infectious disease. Microbiological bases of infection prophylaxis. Microbiological bases of the etiological treatment of infectious diseases. The main types of microorganisms involved in human pathology.
LANGUAGE OF INSTRUCTION: Romanian
KNOWLEDGE ASSESSMENT: Final theoretical exam 70%, continuous assessment during the semester 30%.
ASSESSMENT TYPE: exam
BIBLIOGRAPHY:
Buiuc D., 2003. Medical Microbiology ed. a VI-a, Publishing House "Gr. T. Popa" Iaşi.
Buiuc D., 1997. Microbiology, Manual for Post-Secondary Sanitary Schools, Didactic and Pedagogical Publishing House - R. A., Bucharest.
Luca Mariana, 1993. Parazitology. Micology. Medical Publishing House. Bucharest.
Luca Mariana.2005. Parazitology. Micology. UMF Publishing House. "Gr. T. Popa" Iaşi.
Rădulescu Simona, 2000. Medical Parazitology. All Educational Publishing House, Bucharest.

GENERAL ECOLOGY II

CODE: D30BIOL645
CREDITS: 4
COURSE HOLDER: Senior Lecturer, PhD, Dragoș Mihail ȘTEFĂNESCU
YEAR/SEMESTER: third year/ sixth semester
NUMBER OF HOURS PER WEEK: 2 hours course, 1 hour practical course
NUMBER OF WEEKS: 10
COURSE TYPE: fundamental
COURSE OBJECTIVES: Acquiring information regarding the structure and functions of supraindividual biological systems (populations, communities and the entire biosphere). Understanding the structure and functioning of (ecosystem energy, minerals circulation and self-control) natural ecosystems.
THEMES: Population - characteristics, heterogeneity, spatial structure. Population - rates: natality, mortality, natural growth rate; carrying capacity of the environment; the dynamics of a population's size; exponential and logistic growth of a population; self-regulation - adjustment mechanisms. Ecosphere system - Ecosystem structure (toposfer and biosphere), global circuit of matter, turnover rate, turnover time, global biogeochemical cycles, biogeochemical circuit of carbon.
LANGUAGE OF INSTRUCTION: romanian
KNOWLEDGE ASSESSMENT: exam answers (60% course + 30% practical course) and continuous assessment throughout semester (10%).
ASSESSMENT TYPE: exam
BIBLIOGRAPHY:
Botnariuc N., Vădineanu A., ,, Ecologie,, Ed. Did. şi Ped., Bucureşti 1982
Krebs C. J. ,,Ecology: The Experimental Analysis of Distribution and Abundance 6th ed. Benjamin Cummings, San Francisco 2009
Molles M. C.,, Ecology- Concepts& Applications,, Mc Graw-Hill Publishing Company, 2008
Pârvu C., ,, Ecologie generală,, Ed. Tehnică, Bucureşti 1999
Stugren B., ,, Bazele ecologiei generale,, Ed.: Ştiinţifică şi Enciclopedică, Bucureşti 1982
Ștefănescu, D. M. – Elemente de ecologie generală (ecosistemul) – Editura Sitech, 2015.
Ștefănescu, D. M. - Elemente de ecologie generală (populația și comunitatea) – Editura Sitech, 2014.

PHYTOSOCIOLOGY

CODE: D30BIOL647
CREDITS: 2
COURSE HOLDER: Lecturer, PhD, Daniel RĂDUȚOIU
YEAR/SEMESTER: 3nd year/ 2nd semester
NUMBER OF HOURS PER WEEK: 2 hours course, 2 hour practical course
NUMBER OF WEEKS: 10
COURSE TYPE: optional
COURSE OBJECTIVES: Understanding the inter-specific relationships in a phytocenosis, the distribution of vegetal groups both horizontally and vertically, as well as the factors that contribute to their distribution. Recognition of the main zonal, azonal and intrasonal vegetal associations.
THEMES: The relationship between flora and vegetation. Phytocenosis - study of phytosociology. The relationship between phytocenosis and other over populative biological systems. Functions of phytocenoses. Phytocenosis sampling, Structure of phytocenoses (Sinstructure), Phytocenosis dynamics (Sindinamica), Phytocenotaxonomy of plant groups. Spread of phytocenoses. Geographical classification of plant cover. The conditions for the formation of the vegetation cover and of the phytosociological units in our country.
LANGUAGE OF INSTRUCTION: Romanian
KNOWLEDGE ASSESSMENT: exam answers 60%, final answers to practical laboratory work 10%, periodic testing by practical control exercises 15%, continuous testing during the semester 15%, activities like topics / essays / translations / projects, etc.
ASSESSMENT TYPE: exam
BIBLIOGRAPHY:
Anghel G., Răvăruţ M. & Turcu G. 1971. *Geobotanica* 387 pag. Edit. Ceres. Bucureşti.
Borza Al. & Boşcaiu N. 1965. *Introducere în studiul covorului vegetal*. 340 pag. Edit. Acad. R.P.R. Bucureşti.
Ciocârlan V. 2009. *Flora ilustrată a României*. *Pteridophyta et Spermatophyta.* 1042 pag. Edit. Ceres, Bucureşti.
Cristea V., Gafta D. & Pedrotti F. 2004. *Fitosociologie*. 360 pag. Edit. Presa Universitară Clujeană. Cluj-Napoca.
Doltu M. I., Sanda V. & Popescu A. 1983. Caracterizarea ecologică şi fitocenotică a florei terenurilor nisipoase din România. Muz. Brukenthal. *Stud. Com*., Şt. Nat. 25: 87-151. Sibiu.
Doniţă N. & al. 1992. *Vegetaţia României*. 407 pag. Edit. Tehnică Agricolă. Bucureşti.
Ivan Doina 1979. *Fitocenologie şi vegetaţia Române*: 332 pag. Edit. Did. şi Ped. Bucureşti

MICOLOGY

CODE: D30BIOL650
CREDITS: 2
COURSE HOLDER: Lecturer, PhD, Carmen VLĂDULESCU
YEAR/SEMESTER: 3nd year/ 2nd semester
NUMBER OF HOURS PER WEEK: 2 hours course, 1 hour practical course
NUMBER OF WEEKS: 10
COURSE TYPE: optional
COURSE OBJECTIVES: Presenting the unity and biodiversity of mushrooms, the phylogeny, the evolution and the current classification system. Presentation of the diversity of mushroom species in relation to the current concepts regarding the classification of these

categories of organisms. Synthesizing aspects related to the biology, ecology and physiology of mushrooms, insisting on their practical importance.

THEMES: Brief history of mycology. Morphology and nutrition of mushrooms. Cultivation of mushrooms, their nutritional value. Nutritional index. Toxins produced by mushrooms. Mushroom poisoning (syndromes). Influence of environmental factors on growth, multiplication and life cycle of mushrooms Food value of mushrooms. Inedible mushrooms and poisonous mushrooms. Mushrooms of medicinal and industrial importance. Fundamentals of fungi systematics: Protozoa, Chromista and Fungi. Archimycetes, Myxomycetes. Phytomycetes (Oomycetes, Zygomycetes). Ascomycetes (fam. Hemiascomycetidae, Euascomycetidae). Basidiomycetes. Actinomycetes.

LANGUAGE OF INSTRUCTION: Romanian

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

ASSESSMENT TYPE: exam

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