"FORESTS ENTOMOLGY" SYLLABUS

Basic data of the subject	
Academic Unit:	**Faculty of Life and Environmental Sciences**
Course title:	**Forests Entomolgy**
Program:	**Forestry and Environmental Sciences**
Level:	**Bachelor**
Course status:	**Obligate**
Study year:	**II (Second year)**
Number of hours per week:	**2+2**
Credit value – ECTS:	**5**
Time / location:	**To be announced**
Lecturer:	**Prof. Asoc. Dr. Albana Plakiqi Milaimi**
Contact details:	**albana.milaimi@uni-prizren.com cel: +383 44 187 368**
Course description:	At the beggining of this course will be prescribed the notion, importance, objective, development and relationship of entomology with the other sciences. Then, will be analyzed role of insects in nature; Morphology and anatomy of insects (organ systems); Insects anatomy and morphology; reproduction and the mode of reproduction; pre and postembrionial development; eggs storage generation care. Also, will be discussed for the Hemimetabola and Holometabola insects, for the larvae, nymfs and imagos. the course, also includes the dimorphism, polymorphism and diapause. Special attention is given to the classification of insects, by the way will be recognize the representative species of insect groups (genus, familia, regnum), incluging insects without wings -*Apterygota* (*Protura, Diplura, Collembola, Thysanura*) and with wings - *Pterygota* (*Orthoptera, Bllatodea, Mantodea, Isoptera, Dermaptera, Thysanoptera, Heteroptera, Homoptera, Coleoptera, Lepidoptera, Diptera*, and *Hymenoptera*). Then, will be discussed the notion of ecology; ecologic factors; their importance and classification. Particular emphasis will also be given to the abiotic and biotic factors that affect the phytophagous insects, as well as forest pest management measures. The last part of the course includes the forms of production and use of chemicals; Toxicology – safeguards and to be taken during the work, as well as classification of chemicals for the plant protection (Insecticides, Acaricides. Nematicides. Rodenticides, etj).
Course objectives:	The objective of this course is to provide the students with the basic knowledge on forest pests and their effects on the forests. The purpose is to recognize the anatomy, morphology, ways of breeding and species of forest pests, and their effects that couse in the forests.
Learning outcomes:	After completing this course, the students will be able to: • Recognize the morphological, anatomical, physiological and taxonomic characteristics of plant damaging insects and their biology and ecology. • Know the main pests of forest plants and the dynamics of their populations. • Recognize the nature of damage caused by insects in plants. • Possess the knowledge and skills necessary for the methods of monitoring and controlling the phytophageal insects. • • Acquired knowledge to apply in practice.

Contribution on student load (must correspond with learning outcomes)			
Activity	**Hours**	**Days/week**	**Total**
Lectures	2	15 weeks	30
Exercise theoretical/laboratory	2	15 weeks	30
Practice work	5	1 weeks	5
Contact with lecturer/consultations	1	5 weeks	5
Field exercises	/	/	/
Mid-terms, seminars	2	2 weeks	4
Homework	/	/	/
Individual time spent studying (at the library or home)	1	10 weeks	10
Final preparation for the exam	3	10 weeks	30
Time spent in evaluation (tests, quiz, final exam)	6	1 weeks	6
Projects, presentations, etc.	/	/	/
Total			**120**
Teaching methods :	Lectures, discussions, practical exercises in laboratories and forests, consultations, independent projects, homework assignments, exams.		
Evaluation methods:	The first evaluation (exam): 15%, The second evaluation: 15%, Seminars or other commitments: 10%, practical exam: 10%, Final Exam: 50%, Total 100%.		
Literature			
Basic Literature:	1. Jaço N. 2008: Mbrojtja e Pyjeve – Entomologjia. 2. Ciesla W. 2011: Forest Entomology. Wiley Blackwell, A Jon Wiley & Sons, Ltd., Publication. 3. Schowalter, T. (2006): Insect Ecology.Academis pres publication. United States of America.		
Additional Literature:	4. Berkeley BioKeys: Insecta. 2007. Berkeley Natural History Museums. University of California. http//biokeys. Berkeley.edu/inverts/insecta_orders.html		

Designed study plan:		
Week	**Lectures**	**Exercises**
First week:	Entomology Science; Its history and significance.	Colecting and conservation of insects
Second week:	Insects morphology	Determination of group of insects according to their morphology
Third week:	Insects anatomy, Body cavity and internal systems of organs	Anatomy of insects; form and function of organs
Fourth week:	Reproduktive system of insects. Gametogenesis	Work on insect colecting

Fifth week:	Embryonal and after embryonal development of insects	Identification of imature insects
Sixth week:	Hemimetabola and holometabola insekts	Colecting and preserving of soil insects
Seventh week:	Insects stages of development; dimorphism and polymorphism. Diapauses; insects biological cycle. **The first evaluation**	Colecting and preserving of water insects
Eighth week:	Insects classification criteria. Familiarity with the representatives group.	Using the biokey to identify families of the hematopoietic insects
Ninth week:	Apterygota and Pterygota	Using the biokey to identify families of the holometabolic insects (Coleoptera dhe Lepidoptera)
Tenth week:	Ecology of insects	Using the biokey to identify families of the holometabolic insects (Diptera, Hymenoptera)
Eleventh week:	Classification of chemical means for plant protection	Examples of the influence of the abiotic factors on insect reproduction
Twelfth week:	Pests of conifeorus plants	Effect of temperature on fitophage insects development
Thirteenth week:	Pests of deciduous plants	Effect of some kinds of insecticides on insects development
Fourteenth week:	Measures for forest the management by pests	Use of pine needles as natural insecticides
Fifteenth week:	Form and methods of production of chemical preparations; Toxicology and protective measures during the work. **The second evaluation**	Use of the pepper and garlic as natural insecticides

Academic policies and rules of conduct:

Regular and active participation of students in the lectures, exercises (practical part) and in seminars; Keeping quiet in learning, disconnecting mobile phones, timely access to the classroom, etc.