Basic data of the subject **PLANT BIOLOGY**	
Academic Unit:	Faculty of Life and Environmental Sciences
Course title:	Plant Biology
Study program:	Forestry and Environmental Sciences
Level:	Bachelor
Course status:	Obligate
Study year:	I (first year)
Number of hours per week:	3+2
Credit value – ECTS:	6
Time / location:	To be announced
Lecturer:	Prof. asoc. dr. Bekim Gashi
Contact details:	bekim.gashi@uni-pr.edu; +383 49 600 850
Course description:	Morphology of plants. Cytology. A cell as a basic structure of all organisms; elemental and molecular composition, biomembranes and cell compartmentation; protoplast, apoplast, cell organelles: structure and function of plastids, mitochondria and nucleus; smaller cell organelles; vacuole and cell wall; cell divisions: mitosis and meiosis Histology. Origin of plant tissues, criteria for classification, types of plant tissues and their functions. Morphology of cormophytes. Plant body types; overview of origin, structure and function of main organs in higher plants: stem, root, leaf; primary and secondary growth; life forms of higher plants and metamorphosis of plant organs induced by the environment. Propagation and distribution of plants. Asexual and sexual propagation of plants and fungi. Metagenesis. Sporangia, gametangia, flower, fruit, seed, germination. Plant physiology. Essential characteristics of plants. Primary and secondary metabolisms; photosynthesis, respiration, water regime of plants; mineral nutrition; regulation of growth and development. Plant stress resistance.
Course objectives:	The course has a mission to provide recognition to students anatomy and morphology of plants and the recognition of physiological processes are carried out in plant organisms.
Learning outcomes:	After completing this course, the students will be able to: ▪ To know the anatomy and morphology of plant organisms. ▪ Understand the methods of plant breeding. ▪ Understand the importance of mineral tree process, transpiration, photosynthesis and respiration of plant organisms. ▪ To understand and explain the processes of growth and development of plants. ▪ Implement acquired knowledge into practice.

Contribution on student load (must correspond with learning outcomes)			
Activity	**Hours**	**Days/week**	**Total**
Lectures	3	15 week	45

Exercise theoretical/laboratory	2	15 week	30
Practice work	5	1 week	5
Contact with lecturer/consultations	1	5 week	5
Field exercises	/	/	/
Mid-terms, seminars	2	2 week	4
Homework	/	/	/
Individual time spent studying (at the library or home)	1	15 week	15
Final preparation for the exam	3	10 week	30
Time spent in evaluation (tests, quiz, final exam)	6	1 week	6
Projects, presentations, etc.	5	2	10
Total			**150 hours (6 ECTS)**
Teaching methods:	Theoretic lectures, interactive lectures, Lectures, practical exercises, discussions, quizzes, commentaries, teamwork, and e-learning		
Evaluation methods:	▪ The first evaluation (exam) 15% ▪ Seminars or other commitments 10% ▪ Regular attendance 5% ▪ Final Exam 70% ▪ Total 100%		
Literature			
Basic Literature:	▪ Bekim Gashi: Biologjia e bimëve (dispensë), 2016. ▪ Peter H. Raven, Ray F. Evert, Susan E. Eichhorn: Biologjia e bimëve, (perkth. Endrit Kullaj) UFO Press, Tiranë, Albania, 2008.		
Additional Literature:	▪ Ferat Rexhepi: Botanika 1 dhe 2, FSHMN, Universiteti i Prishtinës, 2000. ▪ Fiziologjia e bimëve (dispensë ligjëratash) ▪ Bekim Gashi: Praktikum i Fiziologjisë së bimëve (dispensë), 2015. ▪ Vjollca Ibro: Fziologjia e bimëve. Universiteti Bujqësor i Tiranës. ▪ More R. Clarki W.D. (1995): Botany. Plant form and function. Wm. C. Brown Publishers, Dubuque, IA, USA.		

Designed study plan:		
Week	**Lectures**	**Exercises**
First week:	Cytology. A cell as a basic structure of all organisms; elemental and molecular composition, biomembranes and cell compartmentation; protoplast, apoplast,	Preparation of microscopic samples of plants and the necessary tools in the lab.

	cell organeles.	
Second week:	Structure and function of plastids, mitochondria and nucleus; smaller cell organeles.	Overview of the plant cell and chromoplasts in the plants.
Third week:	Vacuole and cell wall; cell divisions: mitosis and meiosis.	Preparation of microscopic samples for the observation of the reserve material in the plants (Starch).
Fourth week:	Histology. Origin of plant tissues, criteria for classification, types of plant tissues and their functions – 1.	Observation of epidermal cells, stomes, reserve proteins and crystals in the plants.
Fifth week:	Histology. Origin of plant tissues, criteria for classification, types of plant tissues and their functions – 2.	Plant tissues - examination and preparation of different samples (meristematic, mechanical, conductive tissues).
Sixth week:	Morphology of cormophytes.	Microscopic and macroscopic structure of the stem.
Seventh week:	Plant body types; overview of origin, structure and function of main organs in higher plants: stem, root, llaf.	Microscopic and macroscopic structure of the root.
Eighth week:	Primary and secondary growth; life forms of higher plants and metamorphosis of plant organs induced by the environment.	Leaf anatomy of gymnosperms, dicotiledoneas and monocotiledoneas plants.
Ninth week:	Propagation and distribution of plants. Asexual and sexual propagation of plants and fungi.	Determination of the activity of plant enzymes (amylase, sucrase).
Tenth week:	Metagenesis. Sporangia, gametangia, flower, fruit, seed, germination.	Pigments dissolved in cell fluid (extraction and identification of anthoxanthins and anthocyanins).
Eleventh week:	Plant physiology. Essential characteristics of plants.	Extraction and separation of the chlorophylls and carotenoids.
Twelfth week:	Water balance in plants, mineral nutrition.	Identification of carbohydrates created during the process of photosynthesis.
Thirteenth week:	Primary and secondary metabolisms; photosynthesis, respiracion.	Separation of the chloroplast pigments by paper chromatography.
Fourteenth week:	Regulation of growth and development.	The effect of temperature on the intensity of aerobic respiration.

Fifteenth week:	Plant stress resistance.	Factors affecting plant growth and development.

Academic policies and rules of conduct:

- Students should be aware of and respect the institution and Code of ethics (English-Kodi-Etikes-per-Student.pdf (uni-prizren.com)
- Students should respect the schedule of lectures, and exercises and be attentive.
- It is mandatory to possess and presents a student ID card in the mid-terms and exam,
- During the compilation of course projects, students must adhere to the instructions given by the professor.
- During the exam is forbidden the use of mobile phones.