Biotechnical Faculty / CONTINENTAL FRUIT GROWING AND MEDICAL PLANTS / BEEKEEPING

Course:	BEEKEEPING			
Course ID	**Course status**	**Semester**	**ECTS credits**	**Lessons** (Lessons+Exercises+Laboratory)
4809	Mandatory	6	6	3+0+2
Programs	CONTINENTAL FRUIT GROWING AND MEDICAL PLANTS			
Prerequisites	None.			
Aims	Introducing students to bee products and methods of their extraction. Beekeeping technology using different types of hives. The importance of bees for cultivated and wild plants. Improving conditions for beekeeping in Montenegro.			
Learning outcomes	Describe the sociological structure of a bee colony. Learn about the anatomy of bees. Prepare for the initial steps in the formation of your own apiaries. Explain the indirect significance of bees for cultivated and wild plants. Explain beekeeping technology using DB and LR hives. Determine the best ways of wintering bee colonies. Assess the strength and preparation of bee colonies for the next season. Managing beekeeping practices on a family farm. Recognize symptoms of the most important diseases and pests of bees. Recommend bee products (honey, pollen, propolis, royal jelly, beeswax, bee venom) as highly medicinal. Prepare for independent beekeeping.			
Lecturer / Teaching assistant	Prof. dr Vučeta Jaćimović – Professor; mr Anđela Ljujić -Associate			
Methodology	Lectures, exercises, seminar essays, colloquiums and final exam.			
Plan and program of work				
Preparing week	Preparation and registration of the semester			
I week lectures	Introduction to the subject. The benefits of bees.			
I week exercises	Taxonomy of bees. Species and races of bees.			
II week lectures	Composition of a bee colony. The division of labour in the colonies.			
II week exercises	Beehives, equipment & supplies			
III week lectures	Technology of beekeeping.			
III week exercises	Apiary work calendar.			
IV week lectures	Location and arrangement of the apiary.			
IV week exercises	Bee food.			
V week lectures	Bee colony during the year. Works and developments in the apiary and hive (September, October, November).			
V week exercises	Division of bee societies on productive and auxiliary.			
VI week lectures	Colloquium I. Wintering of bees. Pre spring and spring development of the colony.			
VI week exercises	Methods of reproduction of bee colonies.			
VII week lectures	Reproduction (natural and artificial) of bees.			
VII week exercises	Methods of introducing bee queens.			
VIII week lectures	Production of virgin bee colonies. Growing of bee queens.			
VIII week exercises	Suppression of swarming instinct.			
IX week lectures	Production of virgin bee colonies. Growing of bee queens for personal use and for the market.			
IX week exercises	Presentation of seminar essays.			
X week lectures	Diseases of bees.			
X week exercises	Protecting bees of the most common diseases.			
XI week lectures	Colloquium II. Enemies of bees.			
XI week exercises	Protecting bees of the most common pests.			
XII week lectures	Bee pasture. Honey plants and bee food.			
XII week exercises	Preparation for the main pasture. Preparation for honey harvesting.			
XIII week lectures	Organic cultivation of apiary crops. Improving bee pasture.			

XIII week exercises	Honey extraction.
XIV week lectures	Bee products: honey, propolis, pollen.
XIV week exercises	Bee products: royal jelly, beeswax, bee venom.
XV week lectures	Bees and the environment. Interdependence of bees and plants.
XV week exercises	Indirect benefits of bees. Protection of bees from pesticide use.
Student workload	

Per week	**Per semester**
6 credits x 40/30=8 hours and 0 minuts 3 sat(a) theoretical classes 2 sat(a) practical classes 0 excercises **3 hour(s) i 0 minuts** of independent work, including consultations	Classes and final exam: **8 hour(s) i 0 minuts x 16 =128 hour(s) i 0 minuts** Necessary preparation before the beginning of the semester (administration, registration, certification): **8 hour(s) i 0 minuts x 2 =16 hour(s) i 0 minuts** Total workload for the subject: **6 x 30=180 hour(s)** Additional work for exam preparation in the preparing exam period, including taking the remedial exam from 0 to 30 hours (remaining time from the first two items to the total load for the item) **36 hour(s) i 0 minuts** Workload structure: **128 hour(s) i 0 minuts (cources), 16 hour(s) i 0 minuts (preparation), 36 hour(s) i 0 minuts (additional work)**
Student obligations	Students are required to attend lectures, complete their seminar essay, participate in all laboratory and field exercises and take both colloquiums.
Consultations	In agreement with the professor.
Literature	Jovan Kulinčević and R. Gačić (1991): Beekeeping, Belgrade. Mića Mladenović, Gvozden Stevanović (2003): Breeding of high quality bee queens. Agricultural. Faculty, Zemun. Veroljub Umeljić (1999): In the world of bees. Colour Press, Lapovo, Kragujevac. Josip Belčić, Đuro Sulimanović (1982): Golden Book of beekeeping. Institute Matica Hrvatska, Zagreb. Bilaš.G.D., Krivcov.N.I., LebedevV. I. (2000): Calendar of beekeepers. Bee queens Beekeepers Society, Niš. Branko and Renata Relić (2004): Rational management of the apiary. Parthenon, Belgrade. Jovan Kulinčević (2006): Beekeeping. Parthenon, Belgrade.
Examination methods	Activity during lectures = 5 points; Seminar essay: 5 points; Colloquium: 2x 20 points= 40 points; Final exam = 50 points.
Special remarks	
Comment	

Grade:	F	E	D	C	B	A
Number of points	less than 50 points	greater than or equal to 50 points and less than 60 points	greater than or equal to 60 points and less than 70 points	greater than or equal to 70 points and less than 80 points	greater than or equal to 80 points and less than 90 points	greater than or equal to 90 points