Biotechnical Faculty / CONTINENTAL FRUIT GROWING AND MEDICAL PLANTS / HARVEST, STORAGE AND PACKING OF FRUITS

Course:	HARVEST, STORAGE AND PACKING OF FRUITS			
Course ID	**Course status**	**Semester**	**ECTS credits**	**Lessons** (Lessons+Exercises+Laboratory)
5997	Mandatory	6	6	3+1+1
Programs	CONTINENTAL FRUIT GROWING AND MEDICAL PLANTS			
Prerequisites	No prerequisites			
Aims	To acquaint students with the basic principles and technologies of harvesting, storage, packaging and distribution fruit and grapes			
Learning outcomes	After the student passes this exam, he will be able to: • Recognize the quality and consistency of fruit fruits, clearly determine the degree of maturity and the date of the beginning of the harvest, • Can control everything necessary measures for successful harvesting and quality preservation of fruits, • Independently or as a team manages the refrigeration chambers, regulates the mode of storage of fruits and determines the moment of storage, • Recognizes changes and diseases caused during fruit storage,			
Lecturer / Teaching assistant	Dr Jasmina Balijagic			
Methodology	Lectures, exercises, seminars, colloquia and final exam			
Plan and program of work				
Preparing week	Preparation and registration of the semester			
I week lectures	Importance of the subject, chemical composition, properties and structure of fruits, physiological processes in harvested fruits			
I week exercises	Organic and inorganic substances in fruits			
II week lectures	Maturity indicators and methods of determining the moment of harvesting, organization of harvesting			
II week exercises	Biochemical processes in harvested fruits; transpiration and respiration			
III week lectures	Handling and storage methods of fruit, shelf life of fruit species			
III week exercises	Iodine - starch test and T stage			
IV week lectures	Facilities and conditions for fruit storage			
IV week exercises	Determination of tannin as an indicator of ripeness			
V week lectures	Preservation of apple fruit species			
V week exercises	Orientation methods for determining the degree of maturity			
VI week lectures	Storage of stone and berry fruits			
VI week exercises	Penetrometric determination of the degree of maturity			
VII week lectures	Storage of southern fruits, grapes and imported tropical and exotic fruits			
VII week exercises	Determination of dry matter with a refractometer			
VIII week lectures	Colloquium I			
VIII week exercises	Determination of acids in fruits and sweetness index			
IX week lectures	Storage standards in developed countries, packing houses			
IX week exercises	Remedial colloquium I			
X week lectures	Refrigeration chambers, pre-cooling, fruit treatments before storage, storage losses			
X week exercises	Construction of the cooling system			
XI week lectures	Refrigerators with NA, CA, ULO, ULE			
XI week exercises	Calculation of the required size of the refrigerator			
XII week lectures	MAP, 1-MCP and other advanced preservation technologies			
XII week exercises	Fruit treatments that extend their storage capacity			
XIII week lectures	Sorting, Storage and Quality Standards (HCCP, GLOBALGEP)			

XIII week exercises	Fruit sorting machines
XIV week lectures	Colloquium II
XIV week exercises	Physiological diseases caused during fruit storage, practical work
XV week lectures	Pathology of storage diseases, packaging (types of packaging) and transport of stored fruit. Remedial colloquium II
XV week exercises	Pathological changes that cause the deterioration of stored fruits
Student workload	

Per week	**Per semester**
6 credits x 40/30=8 hours and 0 minuts 3 sat(a) theoretical classes 1 sat(a) practical classes 1 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 classes, laboratory and field classes exercises, do a seminar paper, both colloquiums and the final exam
Consultations	After lectures 1 hour per week
Literature	□ Gvozdenović, D., Davidović, M. (1990): Fruit harvesting and storage, Nolit, Belgrade □ Ilić, Z., Fallik, E., Đurovka, M., Martinovski, Đ., Trajković, Radmila (2007): Physiology and technology of preserving vegetables and fruits, Tampograf, Novi Sad □ Prenkić, R., Čizmović, M. (2010): Script Harvesting, storage and packaging of fruit and grapes □ Pašalić, B. (2006): Harvesting, packaging and storage of fruits, practicum, Banja Luka
Examination methods	- Attendance and activity in class (5): 5 points - Colloquium: (2 x 15) 30 points - Seminar paper: (15) 15 points - Final exam 50 points Grade: number of points: A (≥ 90 to 100 points); B (≥ 80 to < 90); C (≥ 70 to < 80); D (≥ 60 to < 70); E (≥ 50 to < 60); F < of 50
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