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| Course: | *FRUIT AND GRAPE DRYING AND PROCESSING* |
| Course id: 3ОВВ5И46 |
| Number of ECTS: 6 |
| Teacher: | Dr. Mirko Babić, full professor, Dr. Ivan Pavkov, assistant professor, |
| Course status | Elective |
| Number of active teaching classes (weekly) |
| Lectures: 2 | Practical classes: 2 | Other teaching types: | Study research work: | Other classes: |
| Precondition courses | None |
| 1. Educational goal

Introduction students with basics technical and technological solutions for drying, processing and storaging: fruit and grapes. |
| 1. Educational outcomes

On successful completion of this subject, the students should: a) to assemble mastery of the knowledge, techniques, skills and tools related to drying and primary processing fruits and grapes. b) be able to identify, analyze and solve drying and processing facilities problems, c) the knowledge gather in this subject will provoke creativity in design and management of fruits and vegetables handling system. |
| 1. Course content

Lectures:Basic physical properties fruit and grapes. Introduce in to the drying theory and air humidity. Material bilans for moisture and energy during drying. Design of the dryers for fruit and grapes and they work principals. Drying of other biomaterials. Sorting and classification biomaterials. Fruit and grapes preparation for drying. Cutting biomaterials. Enzymes activity. Antibacterial and antioxidant treatments. Vacuum drying. Osmotic drying. Sublimation drying - lyophilization. Other contemporary drying processes. Energy aspects of drying and rationalization. Renewable energy utilization Storage of dried products. Lifetime of product. Machines and materials for package the dried material. Practice:Measuring of the fruit and grapes basics physical properties. Calculation in diagram humid air, material bilans of of moisture and energy for air during drying processes. Preparation fruit and grapes for drying - laboratory practice, convective drying - laboratory practice, osmotic drying - laboratory practice. Planning of storage for drying fruit and grapes. Sorting and packaging. Business plan with basic ideas for drying and processing facilities. Study visits in centers for fruit and grapes processing.  |
| 1. Teaching methods

Lectures – oral presentations with power point softer, Practical classes- calculations and practical work in laboratory, Consultations and Term paper |
| Knowledge evaluation (maximum 100 points) |
| Pre-examination obligations | Mandatory | Points | Final exam | Mandatory | Points |
| Lecture attendance | Yes | 10 | *Oral part of the exam* | Yes | 40 |
| Test | Yes | 20 |  |
| Exercise attendance and practice work | Yes | 20 |
| *Term paper* | Yes | 10 |
| Literature  |
| Ord. | Author | Title | Publisher | Year |
|  | Enachescu Dauthy, Mircea | Fruit and Vegetable Processing | Food and Agriculture Organization of the United Nations, FAO Agricultural Services Bulletin No.119, Rome, p.240. | 1995 |
|  | Babić Mirko, Babić Ljiljana | Fruit and Grape Processing authorized lectures (in Serbian) | Faculty of Agriculture, Novi Sad, Serbia | 2010 |
|  | Babić, Ljiljana, Babić Mirko | Draying ans Storage (in Serbian) | Faculty of Agriculture, Novi Sad, Serbia | 2012 |

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| Znak univerziteta | UNIVERSITY OF NOVI SADFACULTY OF AGRICULTURE 21000 NOVI SAD, TRG DOSITEJA OBRADOVIĆA 8 | Znak fakulteta2 |
| Study Programme AccreditationUNDERGRADUATE ACADEMIC FRUIT SCIENCE AND VITICULTURE |
| Table 5.2 Course specification |