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| Course: | *Agroecology and Agroecosystems Protection* |
| Course id: 7МГБ9О01 |
| Number of ECTS: 6 |
| Teacher: | Prof. dr Ivana Maksimović, Doc. dr Srđan Šeremešić, Doc. dr Marina Putnik-Delić |
| Course status | Mandatory |
| Number of active teaching classes (weekly) |
| Lectures:3 | Practical classes:1 | Other teaching types: | Study research work:1 | Other classes: |
| Precondition courses | None/navesti ako ima |
| 1. Educational goal

This subject aims to introduce students to the agro-ecological bases of crop production and types and sources of pollution of agro-ecosystems and possibilities and ways of its protection. |
| 1. Educational outcomes

Upon passing the exam, students will be competent to recognize the elements of the agro-ecosystems and their interconnection, which will enable them to analyse and understand problems that can occur with deterioration of the production sources (soli, water) and pollution deriving from human activities.  |
| 1. Course content

Defining the agricultural production area. Agriculture in the light of agroecology. Cycling of material and energy in the agro ecosystem. The importance of leaf area, light and temperature to yield formation. Preventive cropping practices to mitigate the effects of drought. Balance humus of anthropogenic soil. Specific tillage for compacted and excessively wet soil. Ecological consequences of the application of organic and mineral fertilizers, pesticides, irrigation, municipal solid waste, wastewater, sewage sludge and liquid manure. Conservation tillage (strengths, weaknesses), reclamation treatment. Ameliorative fertilization. Alteration of weed communities in agroecosystem and control of resistant weeds. Management practices against erosion and deflation. Definition, causes, types and degree of agroecosystems contamination. Harmful effects of contaminants on wildlife. Pollution and preservation of air. Ecological significance of air, sources and classification of air pollutants, effects of pollution on soils and plants, plants tolerant to air pollutants, opportunities to reduce adverse effects in plant production. Pollution and water protection: Definition, types and sources of water pollution. Pollution of groundwater, and consequences. Indicators of water quality. Purification of water. Pollution and protection of soil. Sources and categories of soil pollution and damage. Environmental aspects of pesticides and fertilizers application. The effects of irrigation on soil properties. Soil contamination with heavy metals and radionuclides. Agro-economic importance of forests, forest belts and green spaces. Systems of agriculture and protection of agro ecosystems. The role of genetics and plant breeding the protection of agroecosystems.  |
| 1. Teaching methods

Lectures, Practical classes, Consultations, Research work, Seminar papers |
| Knowledge evaluation (maximum 100 points) |
| Pre-examination obligations | Mandatory | Points | Final exam (izabrati) | Mandatory | Points |
| Lecture attendance | Yes |  | Oral part of the exam | Yes |  |
| Test | Yes | 40+40 |  |
| Exercise attendance | Yes |  |
| Seminar | Yes | 20 |
| Literature  |
| Ord. | Author | Title | Publisher | Year |
|  | Craig C. Sheaffer Kristine M. Moncada | Introduction to Agronomy: Food, Crops, and Environment | Cengage Learning; 2 edition | 2011 |
|  | Stefan R. Gliessman | Agroecology: ecological processes in sustainable agriculture | CRC Press | 1997 |
|  | Adel El Titi | Soil Tillage in Agroecosystems | CRC Press | 2002 |
|  | [Hans Lambers](http://www.amazon.com/s/ref%3Dntt_athr_dp_sr_1?_encoding=UTF8&field-author=Hans%20Lambers&ie=UTF8&search-alias=books&sort=relevancerank), [F. Stuart Chapin III](http://www.amazon.com/s/ref%3Dntt_athr_dp_sr_2?_encoding=UTF8&field-author=F.%20Stuart%20Chapin%20%20III&ie=UTF8&search-alias=books&sort=relevancerank), [Thijs L. Pons](http://www.amazon.com/s/ref%3Dntt_athr_dp_sr_3?_encoding=UTF8&field-author=Thijs%20L.%20Pons&ie=UTF8&search-alias=books&sort=relevancerank)  | Plant Physiological Ecology, second edition | Springer | 2008 |
|  | Lincoln Taiz and Eduardo Zeiger  | Plant Physiology, Fifth Edition | Sinauer Associates | 2010 |

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| Znak univerziteta | UNIVERSITY OF NOVI SADFACULTY OF AGRICULTURE 21000 NOVI SAD, TRG DOSITEJA OBRADOVIĆA 8 | Znak fakulteta2 |
| Study Programme AccreditationMASTER ACADEMIC STUDIES FIELD PLANT GROWING |
| Table 5.2 Course specification |