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| Course: | ***Nutrient Cycle in the Environment*** |
| Course id:3МЗИ1И06 |
| Number of ECTS: 6 |
| Teacher: | prof.dr Darinka, M., Bogdanović, prof dr Maja, S., Manojlović, mr Ranko, R., Čabilovski |
| 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

The acquisition of expert knowledge about the cycles of biogenic elements in the environment, their importance in the food chain and the environment. |
| 1. Educational outcomes

A student who successfully completes the course "Nutrient cycles in the environment" will be able to apply the acquired knowledge in agricultural practices and in their scientific research. |
| 1. Course content

*Theoretical instruction*Cycles and global climate change. The cycle of carbon: organic matter in the soil, greenhouse gas emissions, lowering the concentration of CO2 in the air, measures to increase the organic matter content in the soil. Nitrogen cycle with special reference to the gaseous losses, migration and nitrate leaching and soil and water pollution. The cycle of phosphorus with special reference to the phosphorus losses by washing, and eutrophication of water. Potassium cycle. Cycles of necessary secondary macronutrient (sulfur, calcium, magnesium), the ratio of S/Se, Ca/Mg, K/Mg, Ca/K + Mg. The cycles of trace elements (boron, copper, zinc, manganese, molybdenum, cobalt, selenium). The importance of trace elements in the food chain, deficiency and toxicity, antagonism with other elements. Legislation and Conventions (Kyoto Protocol, EU directives for nitrates and phosphates, the maximum allowable concentration of trace elements in soil, plants, water, Agricultural Land Law, the Law on Organic Production).*Practical instruction*Field exercises: Setting up and maintenance of field trials, the importance of long-term stationary field trials. Assessment of the state of the balance of nutrients on the farm.Laboratory exercises: Determination of total, available and content of fractions of individual elements in soil and plant.  |
| 1. Teaching methods

Lectures, Practice/ Practical classes, Consultations |
| Knowledge evaluation (maximum 100 points) |
| Pre-examination obligations | Mandatory | Points | Final exam (izabrati) | Mandatory | Points |
| Lecture attendance | Yes | 10 | *Oral part of the exam* | Yes | 50 |
| Test | No |  |  |
| Exercise attendance | Yes | 10 |
| Term paper | Yes | 30 |
| Literature  |
| Ord. | Author | Title | Publisher | Year |
|  | Kastori R. | Monografija. «Azot agrohemijski, agrotehički, fiziološki i ekološki aspekti.» | Poljoprivredni fakultet, Novi Sad, | 2005 |
|  | Magdoff, F., Weil R.R. | Soil Organic Matter in Sustainable Agriculture | CRC Press, Florida | 2004 |
|  | De Clercq P. | Nutrient management legislation in European countries | Wageningen Pres, The Netherland | 2001 |
|  | Havlin J.L. | Soil fertility and fertilizers | Pearson education, Inc. Upper Saddle River, New Jersey 07458 | 2005 |
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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: SOIL SCIENCE AND PLANT NUTRITION |
| Table 5.2 Course specification |