|  |  |
| --- | --- |
| Course: | **PRINCIPLES OF AGRICULTURAL WATER USE** |
| Course id: |
| Number of ECTS: 6 |
| Teacher: | Ruzica Stricevic, Atila Bezdan, Stavros Alexandris, Boško Gajic  |
| Course status | Mandatory |
| Number of active teaching classes (weekly) |
| Lectures: 3 | Practical classes: 3 | Other teaching types: | Study research work: | Other classes: |
| Precondition courses | None |
| 1. Educational goal

Gain proficiency in agricultural hydrology; present analytical and experimental tools to evaluate agricultural water flows; introduce methodologies for the estimation of crop water requirements; and assess water quality for agricultural use and quality degradation resulting from agricultural use. |
| 1. Educational outcomes

Students have to be able to: identify water sources, sinks and storages in relation to agriculture; schedule irrigation; perform crop water balances; and evaluate irrigation and drainage efficiency |
| 1. Course content

*Theoretical lecturing***Soil physics**: properties, water potential, flow, infiltration, hydraulic conductivity, soil salinity and experimental methods. **Environmental physics**: microclimatology of radiation, transfer of momentum, heat and mass, crop micrometeorology. **Crop water requirements**: crop water status, the soil-plant-atmosphere continuous, reference evapotranspiration, crop evapotranspiration, methods for measurement and estimation. **Crop water balance**: water stress and effects on evapotranspiration and yield, crop water budget models and crop models, water production functions, dry farming, full and deficit irrigation scheduling. **Irrigation**: uniformity and efficiency, leaching fraction, introduction to individual and collective irrigation systems. **Introduction to on-farm and collective drainage systems.***Practical lecturing (Tutoring)*Exercise, literature reviewing, paper drafting |
| 1. Teaching methods

Lectures, exercises and a class paper. Students will accomplish a semester project and present results in oral and in writing. The work counts for 60% of the final grade. The lectures are held in English. Retake exams may be oral only. |
| Knowledge evaluation (maximum 100 points) |
| Pre-examination obligations | Mandatory | Points | Final exam | Mandatory | Points |
| Assignments | Yes | 60 | Written and Oral | Yes | 40 |
| Literature  |
| Ord. | Author | Title | Publisher | Year |
|  | Allen R. G., Pereira L. S., Raes D. and Smith M., | Crop evapotranspiration: guidelines for computing crop water requirements | FAO irrigation and drainage paper, Rome, Italy, 56, 300 p. | 1998 |
|  | Cuenca R. H. | Irrigation system design: an engineering approach | Englewood Cliffs, New Jersey, Prentice-Hall, Inc., 552 p. | 1989 |
|  | Hanks R. J. | Applied Soil Physics. Soil water and temperature applications | New York, NY, Springer-Verlag, 176 p. | 1992 |
|  | Hatfield J. L., and Baker J. M. | Micrometeorology in agricultural systems: Agronomy, v. 47 | Madison, Wisconsin, USA, American Society of Agronomy, Inc., Crop Science Society of America, Inc., Soil Science Society of America, Inc., 584 p. | 2005 |
|  | Monteith J. L., and Unsworth M. H. | Principles of environmental physics | London, UK., Edward Arnold, 291 p. | 1990 |

|  |  |  |
| --- | --- | --- |
| Znak univerziteta | UNIVERSITY OF NOVI SADFACULTY OF AGRICULTURE 21000 NOVI SAD, TRG DOSITEJA OBRADOVIĆA 8 | Znak fakulteta2 |
| Study Programme AccreditationMASTER ACADEMIC STUDIES - AGRICULTURAL WATER MANAGEMENT (LOLAqua) |
| Table 5.2 Course specification |