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| 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 | |

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