**Table 5.1** Course specification to doctoral study programs

|  |  |  |
| --- | --- | --- |
| **Course name: Irrigation scheduling under variable water availability and environmental concerns** | | |
| **Teacher or teachers:** [**Трајковић Р. Славиша**](../P%209.3%20Knjiga%20Nastavnika%20DOS%20He/34.%20Slavisa%20R.%20Trajkovic,%20redovni%20profesor.xlsx)**,** [**Тодоровић Р. Младен**](../P%209.3%20Knjiga%20Nastavnika%20DOS%20He/45.%20Mladen%20R.%20Todorovic,%20redovni%20profesor.xlsx) | | |
| **Course status:** Elective | | |
| **Number of ECTS:** 10 | | |
| **Precondition courses:** None | | |
| **Educational goal**  The course focuses on the optimization of irrigation scheduling under variable water availability and possible environmental constraints (salinity, low groundwater table). | | |
| **Educational outcomes**  Capability to schedule irrigation under the conditions of optimal and limited water availability and eventual environmental constraints. | | |
| **Course content** 1) Soil water balance in agriculture and its components.2) Soil physical and chemical characteristics and constraints.3) Weather variables and their measurement and estimate.4) Crop variables (length of growing season, effective rooting depth, crop coefficient - single and dual).5) Reference evapotranspiration and its estimate. Examples of estimation.6) Crop evapotranspiration and irrigation water requirements. Example of estimation.7) Irrigation scheduling and management approaches considering (regulated) deficit irrigation, supplementary irrigation. Optimization of irrigation. Examples. 8) Modern tools for automatization and management of irrigation. | | |
| **Literature**  1. Allen, R. G., Pereira, L. S., Raes, D., and Smith, M. (1998). "Crop Evapotranspiration. Guidelines for Computing Crop Water Requirements." *FAO Irrig. and Drain. Paper 56*, Roma, Italy.  2. Doorenbos, J., and Pruitt, W. O. (1977). "Crop water requirements." *FAO irrigation and drainage paper No. 24*, 2nd Ed., Food and Agricultural Organization of UN, Rome, Italy.  3. Jensen, M. E., Burman, R. D., and Allen, R. G. (1990). "Evapotranspiration and irrigation water requirements."  *ASCE manuals and reports on engineering practice No.70*, ASCE, New York, USA. | | |
| **Number of active teaching classes (weekly)** | Lectures: 4 | Study research work: 0 |
| **Teaching methods**  Presentation of theoretical concepts and their explanation (theory). Introduction to WinISAREG and AquaCrop models and their capabilities (demonstration). Guided practical work: Irrigation management under optimal and limited water availability and environmental constraints. | | |
| **Knowledge evaluation (maximum 100 points)**  **Pre-examination obligations Points Final exam Points**  Lecture attendance **10**  Oral part of the exam **30**  Colloquium exam **20**  Project task **10**  Homework **30** | | |