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| Course: | **CONSTRUCTED WETLAND SYSTEMS** |
| Course id: |
| Number of ECTS: **6** |
| Teacher: | **Jasmina Josimov-Dundjerski** |
| 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 goal of this course is to introduce the student with constructed wetlands, which is a relatively new technology used in the waste water management field. Special emphasis will be on novel findings that are or have perspective to be applied in practice. |
| 1. Educational outcomes

On successful completion of this subject, the students should: 1) be able to understand and critically analyze new literature of constructed wetlands2) be able to use the acquired knowledge in its own research work or in practice3) be able to assess the applicability of cnstructed wetlands in the given eco-hydrological conditions |
| 1. Course content

**Introduction to Treatment Wetlands.** (Wetland Characteristics; Types of Treatment Wetlands; Wetlands as a Treatment Technology)**Hydrology and Hydraulics.** (Wetland Hydrology; Types Wetlands - Hydraulics)**Treatment Wetland Vegetation.** (Wetland Macrophytes; Vegetative Communities in Treatment Wetlands; Oxygen Transport as a Treatment Function)**Energy Flows.** (Wetland Energy Flows; Evapotranspiration; Wetland Water Temperatures; Cold Climates)**Air, Water, and Soil Chemical Interactions.** (Fundamentals of Transfer; Oxygen Dynamics in Treatment Wetlands; Oxidation-Reduction Potential; Wetland Hydrogen Ion Concentrations; Alkalinity and Acidity)**Processes that Contribute to Pollutant Removals.** (Suspended Solids; BOD; Nitrogen; Phosphorus; Halogens, Sulfur, Metals, and Metalloids; Pathogens)**Design Basis.** (Sizing of Wetlands)**Practical work** - *Term paper*. |
| 1. Teaching methods

Consultations, Research work |
| Knowledge evaluation (maximum 100 points) |
| Pre-examination obligations | Mandatory | Points | Final exam | Mandatory | Points |
| Lecture attendance | No |  | *Written part of the theory*  | Yes | **40** |
| Test | No |  |  |
| Exercise attendance | No |  |
| *Term paper* | Yes | **60** |
| Literature  |
| Ord. | Author | Title | Publisher | Year |
|  | Scholz, M. | Wetland systems to control urban runoff | *Elsevier*, Amsterdam, ISBN 0-444-52734-6, 333 pp. | 2006 |
|  | Kadlec, R. H. and S. D. Wallace | Treatment wetlands | 2nd edition, *CRC Press*, Boca Raton,ISBN 13: 9781566705264, 1016 pp. | 2008 |
|  | Belić, A. and J. Josimov-Dunđerski | Biosystems in wastewater treatment | *University of Novi Sad, Faculty of Agriculture*, Novi Sad, ISBN 978-86-7520-118-2, 84 pp. (in Serbian) | 2007 |

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| Znak univerziteta | UNIVERSITY OF NOVI SADFACULTY OF AGRICULTURE 21000 NOVI SAD, TRG DOSITEJA OBRADOVIĆA 8 | Znak fakulteta2 |
| Study Programme AccreditationUNDERGRADUATE ACADEMIC STUDIES WATER MANAGEMENT  |
| Table 5.2 Course specification |