COURSE FICHE

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| **Title of Course:** | **Water Resources Management** |
| Course Code:  | PMTKGNB404CA |
| **Engagement per week (Lecture/Exercise/Laboratory):**  | 4\*45 minutes 2/ 2 / 0 |
| **Examination:**  | Oral examination  |
| **Credits:**  | 4 |
| **Proposed term**:  | Spring |
| **Lecturer:** | Institute of Engineering and Smart TechnologiesDepartment of Environmental Eng.**Dr. Dittrich Ernő assistant lecturer**dittrich@mik.pte.hu |
| **Scope of education:** | Structural Engineering; Computer Science Engineering |
| **Learning Objectives**: The course is designed to introduce students of Civil Engineering to the objectives of water resources management, based on brief history of the EU. The tasks, methods and tools of water management are covered in the course with Hungarian specialities of water management. |
| **Short Content:** Types and tasks of hydraulic engineering structures with the following topics: Climate change and water management. EU Water Directive. Water quality problems, and solutions. Watershed management of lowland and hilly areas. Regulation of lakes and rivers. Reservoirs and storage. Flood control and land drainage. Water power development. Water intake and pumping stations. Small hydraulic engineering structures. Characteristic environmental impacts of hydraulic engineering structures.The following physical processes and principles are described: the water balance equation, precipitation and its measurements, areal averages, interception, infiltration, evaporation, runoff, unit hydrograph theory, river morphology, hydrology of lakes, groundwater. |
| **General requirements and additional information** |
| **Language:** | English |
| **Requirements of course acknowledgement (during the semester):** | Attending all lectures is highly recommended. Minimum 70% attending is demand.   |
| **Examination and structure of the grade:** | Oral presentation |
| **Recommended readings and references:** | Recommended readings could be find at the and of each Powerpoint presentation.Some literature:* Loucks, Daniel P., van Beek, Eelco, Stedinger, Jery R., Dijkman, Jozef P.M.,Villars, Monique T.Water: Resources Systems Planning and Management: An Introduction to Methods, Models and Applications ISBN: 9231039989
* L. Lenton, Mike Muller: Integrated Water Resources Management in Practice: Better Water Management for Development ISBN: 9781844076499
* Integrated Urban Water Management int he City of the Future (2011) Kiadó: ICLEI European Secretaria. ISBN: 978-3-943107-08-1 (PDF) ISBN: 978-3-943107-02-9 (CD ROM)
* Correlje, A.F.et al(2008): Every Drop Counts-Environmentally Sound Technologies for Urban and Domestic Water Use Efficiency. ed.: Schuetze ,T.kiadó: TU Delft. ISBN: 978-92-807-2861-3
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| **Inscription to the course:** | Through the **NEPTUN** system.  |

**Schedule**

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| **Week of term** | **Topic of the lecture** |
| 1st06.02.2018 | Cancelled |
| 2nd13.02.2018 | Basics I. |
| **3rd****20.02.2018** | ***Basics and EU Water Directive*** |
| 4th27.02.2018 | Water quality problems I. |
| 5th06.03.2018 | Water quality problems II. |
| **6th****13.03.2018** | Climate change and water management I. |
| **7th****20.03.2018** | Climate change and water management II |
| **8th****27.03.2018** | Regulation of lakes and rivers. Reservoirs and storage. Flood control and land drainage. Inland navigation. Water power development. I. |
| 9th03.04.2018 | Spring (Easter) Holiday |
| **10th****10.04.2018** | Regulation of lakes and rivers. Reservoirs and storage. Flood control and land drainage. Water power development. II. |
| **11th****17.04.2018** | Watershed management of lowland and hilly areas I. |
| **12th****24.04.2018** | Watershed management of lowland and hilly areas II. |
| 13th01.05.2018 | Basics of Hydrology I. |
| **14th****08.05.2018** | Basics of Hydrology II. |
| **15th****15.05.2018** | *Summary* |

Pécs, 05. 02. 2018.

 **Dr. Ernő Dittrich** assistant lecturer