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| Course: | | ***Basics of Hydraulics*** | | | | | | | | |
| Course id: ЗОUV5022 | |
| Number of ECTS: 6 | |
| Teacher: | | Prof. Atila Salvai, Ph.D. | | | | | | | | |
| Course status | | Mandatory | | | | | | | | |
| Number of active teaching classes (weekly) | | | | | | | | | | |
| Lectures: 45 | | Practical classes: 45 | | | Other teaching types: | | Study research work: | | Other classes: | |
| Precondition courses | | None | | | | | | | | |
| 1. Educational goal   Introducing students to the basics of hydraulics and application in water management. | | | | | | | | | | |
| 1. Educational outcomes   Ability of students to apply the fundamentals of hydraulics in water management. | | | | | | | | | | |
| 1. Course content  * PROPERTIES OF FLUIDS (Fluid mechanics and hydraulics. Definition of a fluid. Specific weight. Mass density. Specific gravity. Viscosity. Vapor pressure. Surface tension. Capillarity. Fluid pressure). * HYDROSTATIC FORCE ON SURFACES (Force exerted on plane area. Line of action of force. Horizontal and vertical component of force). * BUOYANCY AND FLOTATION (Archimedes’ Principle. Stability of submerged and floating bodies). * TRANSLATION AND ROTATION OF LIQUID MASSES (Horizontal motion. Vertical motion. Rotation of open and closed vessels). * DIMENSIONAL ANALYSIS AND HYDRAULIC SIMILITUDE (Buckingham Pi theorem. Hydraulic models). * FUNDAMENTALS OF FLUID FLOW (Three significant concepts of fluid flow. Steady flow. Uniform flow. Equation of continuity. Energy equation. Velocity head and kinetic-energy correction factor. Bernoulli theorem. Energy line. Hydraulic grade line. Power). | | | | | | | | | | |
| 1. Teaching methods   Practice, Consultations. | | | | | | | | | | |
| Knowledge evaluation (maximum 100 points) | | | | | | | | | | |
| Pre-examination obligations | | | Mandatory | Points | | Final exam | | Mandatory | | Points |
| Lecture attendance | | | No |  | | Oral part of the exam | | Yes | | 40 |
| Exercise attendance | | | No |  | |  | | | | |
| Term paper | | | Yes | 60 | |
| Literature | | | | | | | | | | |
| Ord. | Author | | Title | | | Publisher | | | | Year |
|  | Salvai, A. | | Hydraulics | | | Script (in Serbian) | | | | 2014. |
|  | Ranald V. Giles | | Theory and Problems of Fluid Mechanics and Hydraulics | | | McGrow-Hill book Company | | | | 1962. |
|  | Victor, L., Streetar, E., Benjamin, W. | | Fluid Mechanics | | | McGrow-Hill book Company | | | | 1985. |
|  | Ven Te Chow | | Open-Channel Hydraulics | | | McGraw-Hill book Company | | | | 1959. |

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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  UNDERGRADUATE ACADEMIC STUDIES WATER MANAGEMENT |
| Table 5.2 Course specification | | |