## COURSE SYLLABUS SEMESTER FALL 2020/2021

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| ***Name of Course*** | ***Engineering Fluid Mechanics 3*** |
| ***Course Code*** | **MSB285ANEP** |
| ***Allotment of Hours per Week*** | **1 Lecture, 1 Practice** |
| ***Number of Credits*** | **2** |
| ***Program*** | **Civil Engineer BSc.** |
| ***Evaluation*** | **Exam (with grade)** |
| ***Semester*** | **3nd** |
| ***Prerequisites*** | **Eng.Fluid.Mecha2. (MSB283ANEP)** |
| ***Department*** | **Civil Engineering** |
| ***Instructor*** | **Dr. Judit PÁL-SCHREINER** |

## INTRODUCTION, GENERAL COURSE DESCRIPTION

This course exposes students to an expansive suite of topics and methods within the field of water resources engineering, emphasizes engineering fluid mechanics (Hydraulics).

## LEARNING OBJECTIVES

Engineering fluid mechanics concepts include fundamental concepts of fluid flow, pressurized flow in pipe and open-channel flow.

**Methodology:**
- Lectures: Lectures will give an introduction to the basic knowledge of the water supply and sewerage.
- Practical classes: Students will be able to practice the basic calculations and design through sample examples.
- Exam test: Accumulated knowledge is tested in an exam test.
- Practical test: Accumulated practice in basic calculations is tested in a practical test.

**Schedule:**

| Week | Topic of lecture |
|---|---|
| Week 1 | Course description; Orientation |
| Week 2 | Fundamental Concepts of Fluid Flow |
| Week 3 | Classification of flow, Continuity equation (Homework part1) |
| Week 4 | Energy equation, Bernoulli equation |
| Week 5 | Venture meters, Pitot tube |
| Week 6 | Laminar- and turbulent flow in pipes, loses 1. |
| Week 7 | Laminar- and turbulent flow in pipes, loses 2. (Homework part2) |

Week 8 Fall Break – no classes
Week 9 Siphons, Pumps
Week 10 Open-Channel Flow (rapidly varied flow, critical depth-general case) (Homework part3)
Week 11 Open-Channel Flow (hydraulic jump)
Week 12 Check Homeworks (Submission date)
Week 13 Practical Test
Week 14 Exam Test
Week 15 Retake exam test, retake practical test (if required)

## ATTENDANCE AND GRADING

**Attendance:**

Attending is required all classes, and will impact the grade (max. 10%). Unexcused absences will adversely affect the grade, and in case of absence from more than 30% of the total number of lesson will be grounds for failing the class. To be in class at the beginning time and stay until the scheduled end of the lesson is required, tardiness of more than 20 minutes will be counted as an absence. In the case of an illness or family emergency, the student must present a valid excuse, such as a doctor's note.

**Grading:**

Grading will follow the course structure with the following weight
10% - Class attendance, class activity
30% - Homeworks
30% - Practical test
30% - Exam test
A minimum of 55% is required to pass the exam

**Offered exam grade:**

| Evaluation in percents | Numeric grade |
|---|---|
| 89%-100% | 5 |
| 77%-88% | 4 |
| 66%-76% | 3 |
| 55%-65% | 2 |
| 0-54% | 1 |

## READINGS AND REFERENCE MATERIALS

[1.] Ernest Brater, Horace King, James Lindell, C. Wei: Handbook of Hydraulics 7th Edition ISBN-13: 978-0070072473; ISBN-10: 0070072477