# COURSE TITLE: QL03075: ENVIRONMENTAL HYDRAULICS

**Credits: 02 (1.5 Lecture – 0.5 Laboratory – 06 Self-Study)**

## EXPECTED LEARNING OUTCOMES

| Notation | Upon completion of this courses, students are able to | CĐR of program |
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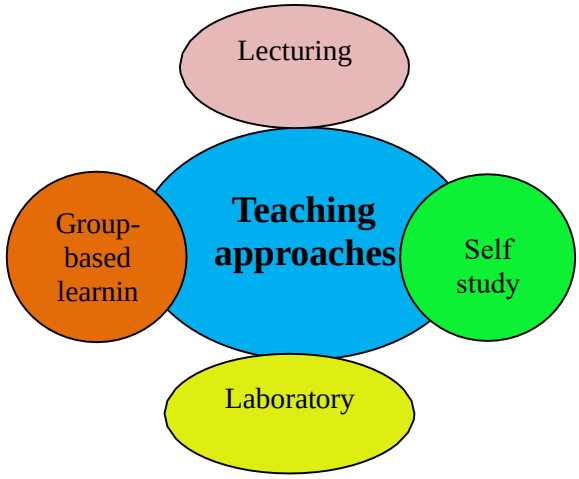
| **Knowledge** | | |
| **CELO1** | Apply basic concepts of liquids and fluid movement laws in different types of bed (pipe, channel, river) in the field of environment | ELO1: **Apply** the knowledge of natural science, politics, social science and humanities, law, economics, and awareness of contemporary issues in the field of environmental sciences. |
| **CELO2** | Apply knowledge of environmental hydraulics to solve practical problems related to designing water supply and drainage systems, and monitoring systems of flow, monitoring soil and water pollution | ELO5: **Design** waste treatment facilities (solid wastes, wastewater, and air pollutants) according to national and international standards and regulations. |
| **Skills** | | |
| **CELO3** | Proficient use of machines and equipment to measure pressure, flow rate ... determine characteristics of water and flow | ELO9: **Apply** appropriate approaches, suitable methods, and techniques to investigate, survey, and study environmental problems. |
| **Attitude** | | |
| **CELO4** | Demonstrate a self-studying and gather experience to improve professional skills | ELO11: **Define** a clear career orientation; possess a passion for one's career and a sense of lifelong learning. |

## CONTENTS

Chapter 1: Introduction
Chapter 2: Hydrostatics
Chapter 3. Dynamic basis of liquids
Chapter 4. Head loss and flow measurement
Chapter 5. Flow through orifice, mouthpiece, ray




## STUDENT TASKS

-Attendance: All students attending this module must attend full classes in accordance with university's regulations.
-Preparation for the lecture: All students participating in this module must read the lecture delivered by lecturer and read relevant book before the class.
-Laboratory: All students must attend all laboratory sessions, write lab reports under lecturer's supervision
- Mid-sem exam: 01 midterm exam
- Final exam: 01 final exam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## ASSESSMENT METHODS

**1. Grading system: 10**

**2. Weighting**

- Attendance: 10%
- Laboratory: 15%
- Mid-sem exam: 15%
- Final exam: 60%


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