

COURSE SYLLABUS Modelling for Environmental Management Credits: 02 (Lectures 02 – Practices 0 – Self-study 06) Code: MT 03061



Expected learning outcomes

Course expected learning outcomes

Upon the completion of the course, student able to

Expected learning outcomes of the program

Knowledge

CELO1

Distinguish types of environmental models and their applications in environmental pollution control and management.

ELO2: Analyze environmental quality including designing and conducting experiments, collecting data, and interpreting results.

CELO2	Construct a simple theoretical model according to modeling development steps for environmental management purposes.	ELO 3: Evaluate the impact of natural resource exploitation and emissions on environmental quality.
CELO3	Simulate the environmental pollution process according to the dynamic modeling approach	ELO4: Develop sustainable solutions for the management and protection of the environment and natural resources based on different perspectives of natural science, social science, and humanities.
Skills		
CELO4	Data collection and analysis on environmental database	ELO 9: Apply appropriate approaches, suitable methods, and techniques to investigate, survey, and study environmental problems.
CELO5	Use specialized computer software in environmental modeling	ELO10: Use modern technology, equipment, and techniques in the management and protection of the environment and natural resources.
CELO6	Scenario analysis for problems solving in environmental management	ELO6: Apply systematic, critical, and creative thinking in solving problems in the environmental and related fields.
Attitude		
CELO7	Determine potential applications of environmental modelling in the future job, having a self-study orientation in the model development.	ELO11: Demonstrate ethical standards of the profession, carrying out the responsibility of environmental protection and serving the sustainable development of Vietnam and the world.



Course description

The course addresses the general introduction and major steps in the development of environmental models, and how they are used for decision-making, with a particular emphasis on air pollution, water quality and land use change. Topics to be covered include basic concepts of modelling, model development methods, model calibration, model validation and scenario analysis. These topics will be applied specifically to the air pollution dispersion, river water quality dynamics and land use change analysis.





- assignments.
- Attend the class and sharing idea with the class.
- Group discussion: participate the group discussion on the subjects related to environmental management
- Computer practice: building computer models.
- E-learning: attend online lectures, searching documents and complete assignment on the MS-Teams





Student responsibilities



Course instructors

- Attendance: Students must attend at least 75% of the class and participate in class activities.
- Practice: attend fully 5 assignments and 1 midterm exam on the computer model development.
- Self-study: read and review the learning materials provided by lecturers through e-learning; participate the group discussions under the instruction by lecturers.

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