

COURSE ID SHEET



Course No. **5057**

NTUA

Semester:

6

Core

X

Elective

Specialization

Title:

CHEMICAL PROCESSES ENGINEERING I

Aim:

Analysis and synthesis of physical and chemical phenomena (kinetics) leading to simulation and design of ideal reactors.

Content:

- **Homogeneous Chemical Processes Engineering:** Batch reactors. Steady-state mixed flow reactors. Steady-state plug flow reactors. Size comparison of single reactors. Semi-batch reactors, Recycle reactor. Non-Isothermal Reactors.
- **Heterogeneous Chemical Processes Engineering:** Fluid-particle reactions. Fluid-fluid reactions. Slurry reactors. Adsorption reactors.
- **Laboratory of Chemical Processes Engineering:** Six exercises are provided to be performed by all students during Chemical Reaction Engineering I and II courses. Laboratory exercises are a necessary part of science education. They enable students to better understand the principles discussed in lectures, and provide them with hands-on experience of the practical aspects of scientific research.

Hours per semester:

LECTURES	26	EXERCISES	26	LABORATORY	19,5	HOME-WORK	108,5	TOTAL HOURS: 180
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Student performance/evaluation:

The evaluation of the students will be done through:

- A Final (written) Examination (FE), including the solving of exercises without using books or notes.
- Solving of Exercises (SE).
- Evaluation of the Laboratory Exercises (LE).

The final grade results as follows:

Final Grade = max{[0.7x(FE)+0.3x(LE)], [0.4x(FE)+0.3x(LE)+0.3x(SE)]}

FE,LE,SE = {0, 10}