

Course name:	Synthesis and design of processes
Number of instruction hours	20
Outline of course/module content	Preliminary analysis and evaluation of processes. Understanding process conditions. Input, output and recycle structure. Synthesis and optimization of chemical processes. Use of process simulators for process synthesis and modelling. Process integration for efficient use of materials and energy. Heat exchange network (HEN Design). Mass exchange network (MEN Design). Process optimization. Optimization approaches to process synthesis and design – constraints. Unit operations and flowsheet analysis for pollution prevention. Environmental cost accounting. Process modifications aiming for minimisation of emissions into water, air and land. Engineering economic analysis of chemical processes. Case studies.
Description of instruction methods	Lectures, consultations.
Description of course/module requirements	Oral exam. Written report.