Course Unit Title	**MOE504 Process Engineering**
Programme of study	MSc in Oil and Gas and Offshore Engineering
Lecturer	Dr.-Ing. Paris A. Fokaides
Type of course unit	Compulsory
ECTS	7
Year of study:	1
Semester(s) offered	Fall Semester 2012, 2013, 2014, 2015
Course content	▪ Introduction to process engineering ▪ Presentation and analysis of main physical and chemical processes ▪ Applied process engineering in the oil and gas industry
Course modules:	1. Introduction to process engineering ▪ Definition of process ▪ Mass, energy and momentum conservation ▪ Analogy between heat and mass transfer ▪ Process flow charts 2. Mass Transfer ▪ Mass diffusion ▪ Boundary Conditions ▪ Steady and transient mass diffusion ▪ Mass convection 3. Physical Processes ▪ Heat transfer in process engineering ▪ Types of heat exchangers ▪ Analysis of heat exchangers ▪ Design and selection of heat exchangers ▪ Simultaneous heat and mass transfer 4. Chemical Processes ▪ Chemical reaction kinetics ▪ Chemical reactors operation and design ▪ Analysis of chemical reactors ▪ Design and selection of chemical reactors ▪ Catalysis and catalysts 5. Applied process engineering in the oil and gas industry ▪ Boiling and condensation heat transfer ▪ Boiling regimes and the boiling curve ▪ Film and dropwise condensation ▪ Chemical reactors in refineries ▪ Catalytic refinery processes
Textbooks:	Levenspiel O. (1999). Chemical Reaction Engineering. John Willey & Sons.
Instruction language	English
External reference	link