

Course: Utility Systems

credits: 5

Course code WBVH19US
Name Utility Systems
Study year 2019-2020
ECTS credits 5
Language English
Coordinator D.A.G. Kurstjens

Modes of delivery Assignment
Education
Assessments Utility Systems - Assignment

Learning outcomes

The student is able to:

- Explain which factors and aspects are to be considered in the design and adaptation of industrial installations.
- Construct, interpret and use the grand composite diagram to identify heat exchange options, specify the required utilities (duty, temperatures, mass flow), and create a PFD of the generation system for heat and cold.
- Explain the function and characteristics of various types of reactors, dryers, heat exchangers, steam systems, cooling systems, chillers, heat pumps and thermal buffers.
- Analyze and design utility networks; their structure and the control of flows and temperatures.
- Suggest and implement options to improve heat recovery in batch processes
- Address practical restrictions and implementation issues for process integration and changing energy sources.

Content

Making process plants more energy efficient requires a common long-term vision of all departments and leading professionals within the company. This course provides knowledge that helps to translate principles and analyses (exergy, pinch, process data) into viable concept designs for utility systems for heat and cold for continuous and batch processes. It deals with major hardware and the structure and control of utility systems.

Included in programme(s)

Minor Energy Efficiency in the Process Industry
Exchange Energy Efficiency in the Process Industry (autumn)

School(s)

Institute of Engineering