Course: Heat Transfer — credits: 5

Course code	CTVH24WARMTE
Name	Heat Transfer
Study year	2026-2027
ECTS credits	5
Language	Dutch, with parts in English
Coordinator	M.E.F. Apol
Modes of delivery	Practical / Training Tutorial
Assessments	Heat Transfer Practice - Other assessment Heat Transfer Theory - Written, organised by STAD examinations

Learning outcomes

This module has the following learning outcomes:

You use the quantities of specific heat, specific mass, volume flow, mass flow, temperature difference and heat flow correctly in heat transfer calculations.

You calculate for a given heat transfer situation the overall heat transfer coefficient and total heat flow for conduction, conduction in combination with convection and radiation.

You carry out the design of heat exchangers for application in the process and food industry, applying the principles of heat transfer by conduction, convection and radiation, including time-dependent behaviour.

You determine at pilot scale the heat flow and overall heat transfer coefficient for heat transfer in a plate heat exchanger, a concentric tube heat exchanger and a shell and tube heat exchanger, and understand the concepts of entrainment and counter flow to perform the experiments at the required conditions.

You apply numerical methods in solving heat transfer problems in complex situations.

Content

The subject of heat transfer concerns the qualitative understanding of the concepts of heat flow and heat transfer. Quantitatively, the subject deals with the concepts: heat transfer by conduction and convection and a combination of these. It quantitatively discusses heat transfer by radiation for simple geometry. It covers the calculation of heat transfer determining quantities: heat flow, overall heat transfer coefficient, and partial heat transfer coefficient.

Included in programme(s)

Chemical Engineering

School(s)

Engineering, Life Sciences & ICT

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