	Studiengang: *Program:*	**Bachelor of Science Maschinenbau** *Bachelor of Science in Mechanical Engineering*			FACH HOCHSCHULE LÜBECK University of Applied Sciences
1	**Modul:** *Module:*	**Heat Transfer**			**Englisch** *English*
		Semester *Semester*	**Dauer** *Duration*	**Status** *Status*	**Turnus** *Regular cycle*
		6. Semester	1 Semester	compulsary	annually
	Kreditpunkte *Credits*	**Aufwand** *Workload*	**Kontaktzeit** *Contact-hours*	**Selbststudium** *Student's efforts*	**Gruppengröße** *Team size*
	4 ECTS	120 h	3 SWS = 60 h lectures 1 SWS =15 h labs	30 h pre-/post-preparation 30 h exercises	<25 (lecture)

2 Beschreibung
Description

The course covers the basics of conduction, convection, radiation, and heat exchangers

3 Lernziele
Learning Outcomes

Upon successful completion of this course, the student will:

- know the fundamentals of conduction, convection, and radiation heat transfer mechanisms.
- have the ability to solve heat transfer problems
- be able to design and rate heat exchangers
- be able to work with HEX design software

4 Schlüsselqualifikationen
Key qualifications

Sozialkompetenz	Methodenkompetenz	Selbstkompetenz / Personenkompetenz	Interkulturelle Kompetenz	Medienkompetenz
X	X	X		

5 Lehrveranstaltung/ -methoden
Course type and methods

- Seminar-like lecture
- Exercise, case-studies
- Lab HEX measurements and evaluation

6 Vorbedingungen / Vorkenntnisse
Prerequisites

By topic:

- Undestanding of the energy balance
- Understanding of the basics of fluid flow
- Basic thermodynamics
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7 Arbeitsmittel / Literatur
Required material / Literature

Introduction to Heat Transfer, Incropera and DeWitt, Wiley

Detailinformationen

8 Inhalte

Course topics

- Introduction to heat transfer mechanisms and solution methodology
- Conduction
- Convection
- Heat Exchangers
- Radiation heat transfer

9 Prüfungsform

Assessment

Written examination

10 Voraussetzung für die Vergabe von Kreditpunkten

Requirements for granting of credits

- Successfully passing the written examination
- Attending lab and Issuing acceptable lab reports

11 Stellenwert der Note in der Endnote

Meaning of the mark concerning final exam

Anteilig / Proportionally: 5/240

12 Weiterführende Veranstaltungen

Related courses

Seminar design project (4th year at MSOE)

13 Bezug zu Zielen des Studiengangs

Related objectives of the study program / Outcomes

14 Zuordnung

Classification

Mathematik & Naturwissenschaft	Ingenieur-wissenschaften	Ingenieur-anwendungen	Entwicklung & Konstruktion	Werkstoffe	Wirschaft, Management, Sprachen	Anderes
X	X	X	X			

15 Modulbeauftragter / Lehrpersonen

Responsible person / Lecturers

Prof. Dr. Müller-Menzel / Prof. Dr. Müller-Menzel