

Applied Energy Technology: Climatisation (E745026)

Course size (nominal values; actual values may depend on programme)
 Credits 3.0 Study time 90 h Contact hrs 36.0 h

Course offerings and teaching methods in academic year 2018-2019

Offering	Language	Teaching Method	Hours
A (semester 2)	Dutch	self-reliant study activities	30.0 h
		practicum	18.0 h
		lecture	12.0 h
		seminar: coached	6.0 h
		exercises	

Lecturers in academic year 2018-2019

Lecompte, Steven TW03 lecturer-in-charge

Offered in the following programmes in 2018-2019

Programme	crdts	offering
Master of Science in Electrical Engineering Technology (main subject Electrical Engineering)	3	A
Master of Science in Electromechanical Engineering Technology	3	A

Teaching languages

Dutch

Keywords

Indoor climate, climate control, air conditioning , heating, ventilation, cooling , refrigeration

Position of the course

This course wants to give students insight in design and operation of air conditioning systems

Contents

Comfort in buildings, heating and cooling, energy balance of a building, passive house standard, first law on open systems, enthalpy, second law, entropy, TS diagram, chiller cycle heat pump cycle, COP, compressor chiller and heat pump
 Psychrometrics, definition, moisture content, relative humidity, enthalpy, Hx diagram
 HVAC system layout, refrigeration and heat pump technology, heating systems, end units

Initial competences

This course builds on the basic knowledge of thermodynamics, fluid mechanics, and machines (pumps, compressors, fans)

Final competences

- 1 Define basic components of an HVAC system
- 2 Calculate psychrometric processes
- 3 Recognize and select heating and cooling systems in buildings
- 4 Calculate the energy balance of a building and installation
- 5 Measure and report on the energy performance of HVAC-systems

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Lecture, practicum, self-reliant study activities, seminar: coached exercises

Extra information on the teaching methods

Lectures are supplemented by exercise training and lab sessions

Learning materials and price

Slides and notes on Minerva

References

Course content-related study coaching

Evaluation methods

end-of-term evaluation

Examination methods in case of periodic evaluation during the first examination period

Open book examination

Examination methods in case of periodic evaluation during the second examination period

Open book examination

Examination methods in case of permanent evaluation

Participation, report

Possibilities of retake in case of permanent evaluation

examination during the second examination period is not possible

Extra information on the examination methods

Written exercise exam

Report and presentation lab sessions

Calculation of the examination mark

12/20 exercise exam

8/20 lab reports and presentation