

Course size (nominal values; actual values may depend on programme)

Credits	3.0	Study time	90 h	Contact hrs	30.0 h
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Course offerings and teaching methods in academic year 2018-2019

A (semester 1)	Dutch	seminar: coached	15.0 h
		exercises	
		lecture	11.25 h
		demonstration	3.75 h

Lecturers in academic year 2018-2019

Morent, Rino	TW17	lecturer-in-charge
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Offered in the following programmes in 2018-2019

	crdts	offering
Bachelor of Science in Engineering: Architecture	3	A
Preparatory Course Master of Science in Engineering: Architecture (main subject Architectural Design and Construction Techniques)	3	A
Preparatory Course Master of Science in Engineering: Architecture (main subject Urban Design and Architecture)	3	A

Teaching languages

Dutch

Keywords

Thermodynamics, Transport Phenomena

Position of the course

To gain a basic knowledge of the subjects cited below. To apply this knowledge to solve physics problems.

Contents

- Thermodynamics: Temperature, thermal expansion, Heat, first law of thermodynamics, Kinetic gas theory, Entropy, second law of thermodynamics, Heat pumps, coolers,?
- Physical transport phenomena: Hydrostatics, Hydrodynamics, Momentum transfer, Heat transport, Collective transport

Initial competences

Final competences

- 1 To gain a good understanding of fundamental principles and concepts in thermodynamics and transport phenomena.
- 2 Be able to model physics-related problems and develop problem solving skills.

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

Demonstration, lecture, seminar: coached exercises

Learning materials and price

Young, Hugh D. and Freedman, Roger A. and Ford, Lewis A., Sears and Zemansky's university physics with modern physics., San Francisco : Addison-Wesley, 2008. ISBN: 0-321-50130-6 Location: TBBS.YC21.3.Y68

References

- Natuurkunde voor Wetenschap en Techniek, Douglas C.GIANCOLI, Academic Service (Prentice Hall/Academic Service).
- Physics for Scientists and Engineers, Paul A.TIPLER, W.H.Freeman and company; Worth publishers.
- Physics for Scientists and Engineers with modern Physics. Raymond SERWAY; John JEWETT. International Student Edition. Thomson; 7th Edition

Course content-related study coaching

Interactive support via Minerva (forum, e-mail), personally through electronic appointment

Evaluation methods

end-of-term evaluation

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

Written examination with open questions

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

Written examination with open questions

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation

not applicable

Calculation of the examination mark