Module title	Industrial Wastewater Treatment – RWTH Aachen
Identifier	3013273
Duration (Semester)	one semester
Cycle (Semester)	winter semester
Valid from	winter semester 2017
Valid until	-
Module level	Master
Content	The overall aims of this course are for the students (1) to gain an understanding of the basic processes used for industrial wastewater treatment and (2) to learn how these processes can be combined to develop a tailor-made treatment system for a specific application. This is illustrated for selected industrial sectors.
Learning Objectives/ Learning Outcomes	On successfully completing this course unit, students will be able… …to define the aims and specific requirements of industrial wastewater treatment. …to explain mechanical, physical, thermal and biological unit processes which are used to treat industrial wastewaters or side-streams from production. …to describe the application areas as well as the advantages and disadvantages of the technologies presented in the course. …to combine the unit processes in order to set up a treatment scheme for a specific application under consideration of the wastewater characteristics and treatment objectives. …to calculate relevant process parameters using mass balances and given design data.
(Study-Specific) Prerequisites	None
(recommended) Requirements	Knowledge from the field municipal wastewater treatment is highly recommended.
References	**RWTH Library** Patterson (1985): Industrial wastewater treatment technology ; **Resources available on the internet** Woodard &; AMP: Industrial Waste Treatment Handbook, 2nd Edition (2006) Chapters available for free download on https://www.sciencedirect.com/book/9780750679633/industrial-waste-treatmenthandbook **Other resources** Cervantes, Pavlostathis, van Haandel (eds.) (2006): Advanced Biological Treatment Processes for Industrial Wastewaters, IWA Publishing, London, ISBN: 9781843391142 ; Meinck, Stooff, Kohlschütter (1968): Industrieabwässer, 4. Auflage, G. Fischer Verlag, Stuttgart ; Ng Wun Jern (2006): Industrial Wastewater Treatment. Imperial College Press. ISBN: 1-86094-580-5; Patwardhan (2017): Industrial Wastewater Treatment. 2nd revised edition. PHI Learning. ISBN: 8120353323 ; Ranade &; Rhandari (2014): Industrial Wastewater Treatment, Recycling and Reuse. ButterworthHeinemann. ISBN: 9780080999685 ; Smith &; Scott (2005): Dictionary of water and waste management, in EWA Publishing, ISBN 1 84339103 1 or Elsevier Butterworth-Heinemann, ISBN 0 7506 6525 4 ; Tchobanoglous, Burton, Stensel (2003): Wastewater Engineering, Metcalf and Eddy, McGraw-Hill, Wakefield

Language	English
Examination Terms	Graded written exam. There are no admission requirements for attending the exam.
Miscellaneous	-
Module coordinator	Univ.-Prof. Dr.-Ing. Thomas Wintgens
ETCS credits	5
Contact time (WSH)	3
Examination duration (min)	0
Total hours (h)	120
Contact hours (h)	45
Self-study hours (h)	75

Exam node (Kennung)

Title	ECTS Credits	Contact time (WSH)	Recommended Semester (Study start winter)	Recommended Semester (Study start summer)
Written exam (or oral exam) Industrial Wastewater Treatment (301327301)	5	0	3rd semester	no semester recommended

Offer node

Title	ECTS Credits	Contact time (WSH)	Recommended Semester (Study start winter)	Recommended Semester (Study start summer)
Lecture/exercise Industrial Wastewater Treatment	-	3	3rd semester	no semester recommended