

Environmental and Recycling Technology (M. Eng.)

Module – Number		743	Obligatory in specialization Recycling Technology (RT)	
Module name		Plant Planning for Recycling Technology / Project Work		
Module coordinator		Prof. Dr.-Ing. Michael Rutz		
Title		Plant Planning for Recycling Technology / Project Work		
Title of examination		Plant Planning for Recycling Technology / Project Work		
Semester		2 nd		
Course type	Language	Lecture + PW	English	
Credit hours/ ECTS/ Workload		2/1/1	5	150
Formal Conditions		Bachelor of Engineering or Bachelor of Science degree		

1. Content and objectives

Content:

The course provides principles of planning and projecting recycling systems. Based on the basic project organization, the approach and methodology of the individual project phases are presented.

Specifically, the preliminary project, basic engineering, detailed engineering as well as assembly and commissioning are dealt with. Further training will be provided by the use of examples.

Calculation and design of selected system components (e.g. shredding machines, sorting machines, classifying machines, dedusting technology; conveyor technology)

Planning of complete systems.

Learning objectives:

Students are able to plan and design recycling systems and organize their implementation. The students have knowledge of project organization and the implementation of individual project phases and are able to apply this to specific projects. They can use planning software and special tools. They are able to present the design, the progress and the results.

Literature: For preparation and follow-up the following textbooks are recommended:

1. Gupta, A., Yan, D.S.: Mineral Processing Design and Operation, Elsevier München, 2006. ISBN: 0444635890, EAN: 9780444635891.
2. Pahl, G.; Beitz, W.; Feldhusen, J., Grote, K.: Engineering Design: A Systematic Approach, Springer, 2006. ISBN: 1846283183.
3. Worell, E.; Reuter, M. (ed.): Handbook of Recycling, Elsevier Inc., 2014. ISBN: 9780123964595 eBook ISBN: 9780123965066.
4. Claus, J. : Planung komplexer Abfallbehandlungsanlagen; Dissertation TU Berlin, 2002
5. Sattler, Kasper: Verfahrenstechnische Anlagen – Planung, Bau und Betrieb. Wiley-VCH, 2000
6. Bernecker, G.: Planung und Bau verfahrenstechnischer Anlagen; 3.Auflage; VDI-Verlag Düsseldorf; 1984
7. Höffl, K.: Zerkleinerungs- und Klassiermaschinen, Dt. Verlag für Grundstoffindustrie, Leipzig 1985
8. Schubert, H.: Handbuch der Mechanischen Verfahrenstechnik, Bd. 1+2,WILEY-VCH-Verlag, Weinheim 2003
9. Weber, K.: Engineering verfahrenstechnischer Anlagen, Praxishandbuch mit Checklisten und Beispielen, Springer 2016; ISBN 978-3-662-52897-6
10. Bernecker, G.: Planung und Bau verfahrenstechnischer Anlagen Projektmanagement und Fachplanungsfunktionen, Springer 4. Auflage 2012; ISBN-13: 9783642626111
11. Ripperger, S., Nikolaus, K.: Entwicklung und Planung verfahrenstechnischer Anlagen, Springer 2020; ISBN 978-3-662-60427-4

2. Method(s) of instruction

Lecture and Project work in a team. The project includes an excursion to the relevant operating facilities.

3. Requirements for attendance

Successful participation of the lecture Project Management.

4. Usability of this module

This module is an obligatory module in the Master's ERT.

5. Requirements for assessment

Students need to pass the module examination, which encompasses all contents of the lecture.
Presentation of the results, final report, excursion report

6. CECTS credits

Modules are assessed by a module examination, which is credited by 5 credit points according to the ECTS (European Credit Transfer and Accumulation System).

7. Frequency of offer

The module is scheduled for the first academic year.

8. Workload

Participation in the course	= 20 h
Preparation and follow-up (of the lecture)	= 20 h
Excursion	= 10 h
Preparation for examination	= 110 h

The entire workload encompasses 150 hours, which equals 5 ECTS credit points.

9. Duration of module

The module is held within one semester.