

Module: Planning of Technological Investments and Simulation

Level Bachelor Short Name PTIS						
Department, Facility Course of Studies Business Administration and Engineering, Bachelor Compulsory/elective Compulsory Semester of Studies Semester of Studies Length (semesters) Teaching Language English Teaching Language Exam Type Exam Type Exam Length (minutes) Learning Outcomes The course aims to transfer the basics and actually used tools to plan technological investments, to use simulation methodologies and to evaluat the economic impact of the investment. This will enable the students to make good investment decisions into technological assets. This includes the usage of a simulation tool for plant as well as shop floor layouts. The targets are: Students can apply production specific issues and their methodologies for a qualified investment decision process based on business cases. Students can work with an IT-based simulation tool for shop floor planning They will simulate and optimize plants and their production processes by using this dynamic software application tool Participation Prerequisites Consideration of Gender and Diversity Issues Applicability Mechanical Engineering, Bachelor ECTS Credit Points Semester Hours per Week Weth Semester Hours per Week Workload (hours) Semester Hours per Week 4 Workload (hours) 5 Semester Hours per Week 4 Workload (hours) 150 Participation py Wilse Exam Language English Self-Study Hours Exam Language English One-third Grades The course aims to transfer the basics and actually used tools to plan technological assets. This includes the economic impact of the investment, to use simulation tool for plant as well as shop floor layouts. The targets are: Students are able to plan technological assets. This includes the economic impact of the investment for production industries. Students are able to plan technological investments, i.e. plants, shop floors and their equipment for production process based on business cases. Students can work with an IT-based simulation tool for shop floor planning They will simulate and optimize plants and t	Level	Bachelor	Short Name	PTIS		
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Remarks	Applicability					
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1 01.07.2019



Module Course: Planning of Technological Investments and **Simulation**

(of Module: Planning of Technological Investments and Simulation)

Course Type	Lecture	Form of Learning	Presence
Mandatory Attendance	yes	ECTS Credit Points	5
Participation Limit		Semester Hours per Week	4
Group Size		Workload (hours)	150
Teaching Language		Presence Hours	45
Study Achievements "Studienleistung", SL)		Self-Study Hours	105
SL Length (minutes)		SL Grading System	

Exam Type	Exam Language
Exam Length (minutes)	Exam Grading System
Learning Outcomes	
Participation Prerequisites	

The previous section is filled only if there is a course-specific exam.

Contents

Fundamentals in planning of technological investments

- One-dimensional decision tools
 - · Static methodologies
 - · Dynamic methodologies
- Multi-dimensional decision tools
 - · Qualitative ranking methodologies
 - · Risk and sensitivity analysis

Introduction in planning of technological systems and their simulation

- · Specification of the planning process
 - Target planning
 - Resource planning
 - Implementation planning
- Plant simulation software FLEXSIM
 - Introduction
 - Case studies

Literature

Aggteleky, B., Fabrikplanung - Werksentwicklung und Betriebsrationalisierung, Band 1: Grundlagen, Zielplanung, Vorarbeiten, Carl Hanser Verlag, München, Wien, 1998.

> 2 01.07.2019

Aggteleky, B., Fabrikplanung - Werksentwicklung und Betriebsrationalisierung, Band 2: Betriebsanalyse, Feasibility- Studie, Carl Hanser Verlag, München, Wien, 2001.

Aggteleky, B., Fabrikplanung - Werksentwicklung und Betriebsrationalisierung, Band 3: Ausführungsplanung und Projektmanagement, Carl Hanser Verlag, München, Wien, 1990.

Däumler, F., Anwendung von Investitionsrechnungsverfahren in der Praxis, Verlag NWB, Herne/Berlin, 2010.

Pawellek, G., Ganzheitliche Fabrikplanung: Grundlagen, Vorgehensweise, VDI-Buch, Springer Verlag, Berlin, 2014.

Wiendahl, H.-P., Planung modularer Fabriken: Vorgehen und Beispiele aus der Praxis, Hanser Verlag, 2013.

Ziegenbein, K., Controlling, F. Kiehl Verlag, Ludwigshafen, 2012

Remarks

3 01.07.2019