

General Information:

Module number:	WIW-5223: Decision Optimization (Universität Augsburg)
Title (dt.):	Decision Optimization
Title (en.):	Decision Optimization
Module level:	MSc
Abbreviation:	-
Subtitle:	-
Duration:	One semester
Occurrence - summer/winter:	Winter
Occurrence - regular/irregular:	Regular
Language:	German
Credits:	4
Specialization:	Operations Management and Markets (Selected Topic)
Date:	First & second half of the semester
Location:	Augsburg (University)
FIM-exclusivity:	No

Workload:

Contact hours:	42
Self-study hours:	78
Total hours:	120

Achievment and assessment methods:

Description of achievment and assessment methods:	The module examination is based on a written exam. By formulating optimization models and doing calculations, students have to demonstrate their ability to practically work with the mathematical concepts presented in the course and apply them to solve decision problems.
Type of assessment:	Written
Duration of assessment (min):	60 min
Assessment retake:	Next semester

Description:

(Recommended) prerequisites	Good knowledge of Mathematics on Bachelor level as well as basic knowledge of linear / integer optimization (taught, e.g., in the Individual Study Course "Operations Research") and basic knowledge of stochastic processes are required.
Content:	<ol style="list-style-type: none"> 1. Model-based Planning 2. Analysis of Optimization Models <ul style="list-style-type: none"> • Duality • Opportunity Cost and Sensitivity Analysis • Additional Alternatives

Intended learning outcomes:

Upon successful completion of this module, students are able to

- formulate appropriate optimization problems depending on the decision problem on hand.
- identify and apply appropriate optimization methods for different classes of optimization problems.
- evaluate possible applications of standard software based on the given problem.

Teaching and learning methods:

The module consists of a lecture and a supplementary tutorial. Presentations are supported by lecture notes. Work sheets with problems for preparation in home work are discussed during the tutorials on the blackboard. Students are intended to intensively deal with the contents presented and discussed during the lectures and exercises.

Media:

Presentation slides, blackboard, exercise sheets

Reading list:

Domschke, W.; A. Drexl, R. Klein and A. Scholl: Einführung in Operations Research. 9th ed., Springer, Berlin et al., 2015.
Domschke, W.; A. Drexl, R. Klein, A. Scholl and S. Voß: Übungen und Fallbeispiele zum Operations Research. 8th ed., Springer, Berlin et al., 2015.
Klein, R. and A. Scholl: Planung und Entscheidung - Konzepte, Modelle und Methoden einer modernen betriebswirtschaftlichen Entscheidungsanalyse. 2nd ed., Vahlen, Munich, 2011.

Responsible for module:

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Lecturer:

1. Lecturer:

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Courses:

1. Course:

Type:

Lecture

Name:

Decision Optimization

Weekly hours per semester:

2

2. Course:

Type:

Exercise

Name:

Decision Optimization

Weekly hours per semester:

2

(Recommended) audience:

1. Program:

Name:

MSc Finanz- und Informationsmanagement (FIM)

2. Program:

Name:

Master iBWL

3. Program:

Name:

4. Program:

Name:

5. Program:

Name: