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Module WIW-POM-PMW-M-7

Operations Management für WI (M, 9.0 LP)

Module Identification

Module Number	Module Name	CP (Effort)
WIW-POM-PMW-M-7	<i>Operations Management für WI</i>	9.0 CP (270 h)

Basedata

CP, Effort	9.0 CP = 270 h
Position of the semester	1 Sem. in WiSe
Level	[7] Master (Advanced)
Language	[DE/EN] German or English as required
Module Manager	Sahling, Florian, Prof. Dr. (PROF DEPT: WIW) (/staff/53/)
Lecturers	Köppel, Stephan, M. Sc. (WMA DEPT: WIW) (/staff/601/) Rickers, Steffen, M. Sc. (WMA DEPT: WIW) (/staff/488/)
Area of study	[WIW-POM] Production Management
Reference course of study	[WIW-88.179-SG] M.Sc. Business Administration and Engineering specialising in Mechanical Engineering (/mhb/FB-WIW/cos-545/)
Lifecycle-State	[NORM] Active

Courses

Type/SWS	Course Number	Choice in Module-Part	SL	PL	CP	Sem.
2V	WIW-POM-OP-K-7 (/mhb/courses/WIW-POM-OP-K-7/)	P	-	PL1	3.0	WiSe
2K	WIW-POM-QMP-K-6 (/mhb/courses/WIW-POM-QMP-K-6/)	P	-	PL1	3.0	WiSe
2V	WIW-POM-MG-K-7 (/mhb/courses/WIW-POM-MG-K-7/)	P	-	PL1	3.0	WiSe

- About **[WIW-POM-OP-K-7]**: Title: "Operative Production Management"; Presence-Time: 30 h; Self-Study: 60 h

- About **[WIW-POM-QMP-K-6]**: Title: "Quantitative Methods in Operations Management"; Presence-Time: 30 h; Self-Study: 60 h
- About **[WIW-POM-MG-K-7]**: Title: "Modelling and Optimization with GAMS"; Presence-Time: 30 h; Self-Study: 60 h

Examination achievement PL1

- Form of examination: **written exam (Klausur) (240 Min.)**
- Examination Frequency: each semester

Written exam (270 minutes) covering the content of the lectures Operative Production Management, Quantitative Methods in Operations Management and Modelling and Optimization with GAMS.

Evaluation of grades

The grade of the module examination is also the module grade.

Contents

From **[WIW-POM-OP-K-7] Operative Production Management** (/mhb/courses/WIW-POM-OP-K-7/):

- Master Production Planning
- Deterministic and stochastic lot sizing problems
- Scheduling problems

From **[WIW-POM-QMP-K-6] Quantitative Methods in Operations Management** (/mhb/courses/WIW-POM-QMP-K-6/):

- Introduction in modelling software GAMS
- Modelling mixed integer programs
- Matheuristics, e.g. Fix-and-Relax, Fix-and-Optimize
- Column Generation

From **[WIW-POM-MG-K-7] Modelling and Optimization with GAMS** (/mhb/courses/WIW-POM-MG-K-7/):

- Introduction to a commercial optimization software
- Implementation of mathematical models in the optimization software
- Application areas: production planning, location planning, etc.
- Implementation of efficient solution procedures

Competencies / intended learning achievements

Upon successful completion of the module, students will be able:

- to decide on the selection of quantitative optimization models for production planning,
- to formulate different lot sizing problems,
- to evaluate quantitative solutions,
- to assess the effects of forecast quality on production planning,
- to know how decision problems arising in Operation Management can be modelled in GAMS,
- to solve these problems using suitable exact and/or heuristic solution approaches.

Literature

From **[WIW-POM-OP-K-7] Operative Production Management** (/mhb/courses/WIW-POM-OP-K-7/):

Script / further literature will be announced during the lecture.

From **[WIW-POM-QMP-K-6] Quantitative Methods in Operations Management** (/mhb/courses/WIW-POM-QMP-K-6/):

Slides are made available that contain a list of complementary literature.

From **[WIW-POM-MG-K-7] Modelling and Optimization with GAMS** (/mhb/courses/WIW-POM-MG-K-7/):

Slides are made available that contains a list of complementary literature

Requirements for attendance (informal)

None

Requirements for attendance (formal)

None

References to Module / Module Number [WIW-POM-PMW-M-7]**Module-Pool****Name**

[WIW-POM-MPOOL-7 (/mhb/modulepools/WIW-POM-MPOOL-7/)] Field of Specialization: Produktionsmanagement
