

Module Handbook (<https://modhb.uni-kl.de/>)

[TUK \(https://www.uni-kl.de\)](https://www.uni-kl.de) [MODHB \(https://modhb.uni-kl.de/\)](https://modhb.uni-kl.de/) [Homepage \(/\)](#)

Module EIT-LRS-437-M-4

Optimal Control (M, 3.0 LP)

Module Identification

Module Number	Module Name	CP (Effort)
EIT-LRS-437-M-4	<i>Optimal Control</i>	3.0 CP (90 h)

Basedata

CP, Effort	3.0 CP = 90 h
Position of the semester	1 Sem. in SuSe
Level	[4] Bachelor (Specialization)
Language	[EN] English
Module Manager	Görges, Daniel, apl. Prof. Dr.-Ing. (EXT DEPT: EIT) (/staff/618/)
Lecturers	Görges, Daniel, apl. Prof. Dr.-Ing. (EXT DEPT: EIT) (/staff/618/)
Area of study	[EIT-LRS] Control Systems
Reference course of study	[EIT-82.781-SG#2019] B.Sc. Electrical and Computer Engineering [2019] (/mhb/FB-EIT/cos-523/)
Lifecycle-State	[NORM] Active

Courses

Type/SWS	Course Number	Choice in Module-Part	SL	PL	CP	Sem.
2V	EIT-LRS-437-K-4 (/mhb/courses/EIT-LRS-437-K-4/)	P	-	PL1	3.0	SuSe

- About [EIT-LRS-437-K-4]: Title: "Optimal Control"; Presence-Time: 28 h; Self-Study: 62 h

Examination achievement PL1

- Form of examination: **written exam (Klausur) (120 Min.)**
- Examination Frequency: each semester

Evaluation of grades

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

Contents

From [EIT-LRS-437-K-4] **Optimal Control** (/mhb/courses/EIT-LRS-437-K-4/):

- Introduction to optimization and optimal control
- Optimization of functions
- Optimization of functionals
- Optimization of dynamic systems
- Linear-quadratic optimal control
- Dynamic programming

Competencies / intended learning achievements

After completing this module you can...

- ... categorize and formulate optimization and optimal control problems.
- ... explain the theoretical background of optimization and optimal control.
- ... solve optimization and optimal control problems with analytical and numerical methods.
- ... design, implement and evaluate optimal controllers.

Requirements for attendance (informal)

Modules:

- [EIT-LRS-504-M-3] Linear Control (M, 5.0 LP) (/mhb/modules/EIT-LRS-504-M-3/)

Requirements for attendance (formal)

None

References to Module / Module Number [EIT-LRS-437-M-4]

Course of Study	Section	Choice/Obligation
[EIT-82.781-SG#2019] B.Sc. Electrical and Computer Engineering [2019] (/mhb/FB-EIT/cos-523/)	Major-Specific Advanced Subjects	[P] Compulsory
[EIT-82.?-SG#2021] B.Sc. Electrical and Computer Engineering [2021] (/mhb/FB-EIT/cos-685/)	Major-Specific Advanced Subjects	[P] Compulsory
[EIT-88.?-SG#2021] M.Sc. Automation and Control (A&C) [2021] (/mhb/FB-EIT/cos-676/)	A&C Core Courses	[P] Compulsory