Module EIT-LRS-426-M-7

Robot and Motion Control (M, 4.0 LP)

Module Identification

Module Number	Module Name	CP (Effort)
EIT-LRS-426-M-7	*Robot and Motion Control*	4.0 CP (120 h)

Basedata

CP, Effort	4.0 CP = 120 h
Position of the semester	1 Sem. in SuSe
Level	[7] Master (Advanced)
Language	[EN] English
Module Manager	Liu, Steven, Prof. Dr.-Ing. (PROF | DEPT: EIT) (/staff/345/)
Lecturers	Liu, Steven, Prof. Dr.-Ing. (PROF | DEPT: EIT) (/staff/345/)
Area of study	[EIT-LRS] Control Systems
Reference course of study	[EIT-88.781-SG#2010] M.Sc. Electrical and Computer Engineering [2010] (/mhb/FB-EIT/cos-556/)
Livecycle-State	[NORM] Active

Courses

Type/SWS	Course Number	Choice in Module-Part	SL	PL	CP	Sem.
3V	**EIT-LRS-426-K-7** (/mhb/courses/EIT-LRS-426-K-7/)	P	-	PL1	4.0	SuSe

- About **[EIT-LRS-426-K-7]**: Title: "Robot and Motion Control"; Presence-Time: 42 h; Self-Study: 78 h

Examination achievement PL1

- Form of examination: **oral examination (30 Min.)**
- Examination Frequency: each semester

Evaluation of grades

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

Contents

From [EIT-LRS-426-K-7] Robot and Motion Control (/mhb/courses/EIT-LRS-426-K-7/)**:**

- Homogene Koordinatentransformation
- Kinematische Analyse nach Denavit-Hartenberg
- Differentielle Kinematik
- Beschreibung der Roboterdynamik nach Lagrange und Newton-Euler
- Path- und Trajektorienplanung
- Motion Control von Robotern
- Interaction control von Robotern

Competencies / intended learning achievements

- Befähigung zur Analyse von Roboterstrukturen
- Beherrschen von grundlegenden kinematischen Beziehungen bei Robotern
- Beherrschen von grundlegenden dynamischen Beziehungen bei Robotern
- Kenntnisse der Motionplanung für Robotersysteme
- Beherrschen der Grundstrukturen und der wichtigsten Verfahren zur Roboterregelung

Requirements for attendance (informal)

Modules:

- [EIT-LRS-504-M-3] Linear Control (M, 5.0 LP) (/mhb/modules/EIT-LRS-504-M-3/)
- [EIT-LRS-505-M-7] Nonlinear and Adaptive Control (M, 5.0 LP) (/mhb/modules/EIT-LRS-505-M-7/)

Requirements for attendance (formal)

None

References to Module / Module Number [EIT-LRS-426-M-7]

Course of Study	Section	Choice/Obligation
[EIT-88.781-SG#2010] M.Sc. Electrical and Computer Engineering [2010] (/mhb/FB-EIT/cos-556/)	Elective Subjects	[W] Elective Module
[EIT-88.?-SG#2021] M.Sc. Electrical and Computer Engineering [2021] (/mhb/FB-EIT/cos-686/)	Technical Elective Modules	[W] Elective Module
[EIT-88.A20-SG#2021] M.Sc. European Master in Embedded Computing Systems (EMECS) [2021] (/mhb/FB-EIT/cos-566/)	Elective Subjects	[W] Elective Module
[EIT-88.?-SG#2021] M.Sc. Embedded Computing Systems (ESY) [2021] (/mhb/FB-EIT/cos-677/)	Elective Subjects	[W] Elective Module

Module-Pool	Name
[GS-CVT-EE-E-MPOOL-6 (/mhb/modulepools/GS-CVT-EE-E-MPOOL-6/)]	Catalog Electives Electrical and Computer Engineering