

Module Handbook

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Course INF-60-03-K-5

Fundamentals of Embedded Systems (4V+2U, 8.0 LP)

Course Type

SWS	Type	Course Form	CP (Effort)	Presence-Time / Self-Study
-	K	Lecture with exercise classes (V/U)	8.0 CP	156 h
4	V	Lecture		56 h
2	U	Exercise class (in small groups)		28 h
(4V+2U)			8.0 CP	84 h 156 h

Basedata

SWS	4V+2U
CP, Effort	8.0 CP = 240 h
Position of the semester	1 Sem. in SuSe
Level	[5] Master (Entry Level)
Language	[DE/EN] German or English as required
Lecturers	Berns, Karsten, Prof. Dr. (PROF DEPT: INF) Schürmann, Bernd, PD Dr.-Ing. (WMA DEPT: INF, GS)
Area of study	[INF-ES] Embedded Systems and Robotics
Lifecycle-State	[NORM] Active

Possible Study achievement

- Verification of study performance: **proof of successful participation in the exercise classes (ungraded)**
- Details of the examination (type, duration, criteria) will be announced at the beginning of the course.

Contents

- Overview of embedded systems
- Introduction to electronics
- Basic transistor circuits, operational amplifier, A/D converter
- Introduction to system theory (e.g. Laplace transformation, convolution, filter)
- Control and digital signal processing
- Sensors and actuators
- Hardware platforms for embedded systems

Literature

- Any introduction text book to electronics.
- Any introduction text book to mechatronic systems.
- Concrete literature will be announced in the lecture.

Requirements for attendance (informal)

Courses

- [INF-02-10-K-2] Computer Organization and System Software (4V+2U, 8.0 LP)

Requirements for attendance (formal)

None

References to Course [INF-60-03-K-5]

Module	Name	Context	
[INF-60-03-M-5]	Fundamentals of Embedded Systems	P: Obligatory	4V+2U, 8.0 LP
Course-Pool	Name		
[INF-ES_V-KPOOL-6]	Lectures of the teaching area Embedded Systems and Robotics		