

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

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## Module EIT-FUN-402-M-4

Wireless Communication (M, 5.0 LP)

### Module Identification

Module Number	Module Name	CP (Effort)
EIT-FUN-402-M-4	<i>Wireless Communication</i>	5.0 CP (150 h)

### Basedata

CP, Effort	5.0 CP = 150 h
Position of the semester	1 Sem. in SuSe
Level	[4] Bachelor (Specialization)
Language	[EN] English
Module Manager	Schotten, Hans D., Prof. Dr.-Ing. (PROF   DEPT: EIT) (/staff/347/)
Lecturers	Han, Bin, Dr.-Ing. (WMA   DEPT: EIT) (/staff/685/) Schotten, Hans D., Prof. Dr.-Ing. (PROF   DEPT: EIT) (/staff/347/)
Area of study	[EIT-FUN] Wireless Communication and Navigation
Reference course of study	[EIT-82.A44-SG#2018] B.Sc. Media and Communication Technology [2018] (/mhb/FB-EIT/cos-527/)
Lifecycle-State	[NORM] Active

### Courses

Type/SWS	Course Number	Choice in Module-Part	SL	PL	CP	Sem.
2V+2U	EIT-FUN-402-K-4 (/mhb/courses/EIT-FUN-402-K-4/)	P	-	PL2	5.0	SuSe

- About [EIT-FUN-402-K-4]: Title: "Wireless Communication"; Presence-Time: 56 h; Self-Study: 94 h

### Examination achievement PL1

- Form of examination: examination in form of partial achievements

- Examination Frequency: each semester

Written exam 90 min. (60%) + Lab exam (40%)

The lab points is determined individually for each student, depending on the active participation in the lab (4x 90 min) and the lab reports

## Evaluation of grades

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

### Contents

From [EIT-FUN-402-K-4] **Wireless Communication** (/mhb/courses/EIT-FUN-402-K-4/):

- Wireless channels
- Baseband systems: sampling & quantization, Shannon limit multiplexing
- Fundamentals of cellular communication
- Multiple access technologies
- Coding / decoding, modulation / demodulation
- Mobility management
- Simulink laboratories for wireless communications
- Architectures and control of mobile communications systems

### Competencies / intended learning achievements

After completing this module you can...

- ... list and explain wireless communication methods.
- ... describe and analyze basic characteristics of mobile communications.
- ... quantitatively evaluate methods of wireless communications.
- ... simulate simple wireless communication systems with Simulink.

### Requirements for attendance (informal)

**Modules:**

- [EIT-EMS-454-M-2] Principles and Applications of Probability Theory (M, 4.0 LP) (/mhb/modules/EIT-EMS-454-M-2/)
- [EIT-NAT-315-M-2] Fundamentals of Signals and Systems (M, 5.0 LP) (/mhb/modules/EIT-NAT-315-M-2/)

### Requirements for attendance (formal)

None

References to Module / Module Number [EIT-FUN-402-M-4]

<b>Course of Study</b>	<b>Section</b>	<b>Choice/Obligation</b>
[EIT-88.781-SG#2010] M.Sc. Electrical and Computer Engineering [2010] (/mhb/FB-EIT/cos-556/)	Specialization Modules	[P] Compulsory
[EIT-88.781-SG#2010] M.Sc. Electrical and Computer Engineering [2010] (/mhb/FB-EIT/cos-556/)	Elective Subjects	[W] Elective Module
[EIT-82.A44-SG#2018] B.Sc. Media and Communication Technology [2018] (/mhb/FB-EIT/cos-527/)	Advanced Subjects	[P] Compulsory
[EIT-88.?-SG#2021] M.Sc. Electrical and Computer Engineering [2021] (/mhb/FB-EIT/cos-686/)	Major Communication Technology (KOM)	[P] Compulsory
[EIT-88.?-SG#2021] M.Sc. Electrical and Computer Engineering [2021] (/mhb/FB-EIT/cos-686/)	Technical Elective Modules	[W] Elective Module
[EIT-82.?-SG#2021] B.Sc. Media and Communication Technology [2021] (/mhb/FB-EIT/cos-681/)	Advanced Subjects	[P] Compulsory
[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