

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

TUK (<https://www.uni-kl.de>)   MODHB (<https://modhb.uni-kl.de/>)   Homepage (/)

## Module EIT-EMS-655-M-7

Microelectronic Circuit and System Design II (M, 5.0 LP)

### Module Identification

Module Number	Module Name	CP (Effort)
EIT-EMS-655-M-7	<i>Microelectronic Circuit and System Design II</i>	5.0 CP (150 h)

### Basedata

CP, Effort	5.0 CP = 150 h
Position of the semester	1 Sem. in SuSe
Level	[7] Master (Advanced)
Language	[EN] English
Module Manager	Wehn, Norbert, Prof. Dr.-Ing. (PROF   DEPT: EIT) (/staff/349/)
Lecturers	Wehn, Norbert, Prof. Dr.-Ing. (PROF   DEPT: EIT) (/staff/349/)
Area of study	[EIT-EMS] Microelectronic Systems Design
Reference course of study	[EIT-88.781-SG#2010] M.Sc. Electrical and Computer Engineering [2010] (/mhbf/B-EIT/cos-556/)
Lifecycle-State	[NORM] Active

### Courses

Type/SWS	Course Number	Choice in Module-Part	SL	PL	CP	Sem.
3V+1U	EIT-EMS-655-K-7 (/mhbf/courses/EIT-EMS-655-K-7/)	P	-	PL1	5.0	SuSe

- About [EIT-EMS-655-K-7]: Title: "Microelectronic Circuit and System Design II"; Presence-Time: 56 h; Self-Study: 94 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-EMS-655-K-7] **Microelectronic Circuit and System Design II** (/mhb/courses/EIT-EMS-655-K-7/):

- Analysis and optimization of power/energy in microelectronic circuits and systems
- Interconnect in advanced technology nodes
- Timing issues and optimization
- Network-on-Chip architectures
- Techniques to increase throughput
- Memory Architectures
- 3D integration

### Competencies / intended learning achievements

After completing this module you can...

- ... explain, analyze, assess, and design complex SoC architectures in State-of-the-Art technologies.
- ... use modern EDA tools for given tasks.
- ... read, understand and assess scientific publications in this field.

### Requirements for attendance (informal)

**Modules:**

- [EIT-EMS-654-M-4] Microelectronic Circuit and System Design I (M, 4.0 LP) (/mhb/modules/EIT-EMS-654-M-4/)
- [EIT-EMS-708-M-4] Fundamentals of Microelectronics (M, 4.0 LP) (/mhb/modules/EIT-EMS-708-M-4/)

### Requirements for attendance (formal)

None

## References to Module / Module Number [EIT-EMS-655-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/)	Specialization Modules	[P] Compulsory
[EIT-88.781-SG#2010] M.Sc. Electrical and Computer Engineering [2010] (/mhb/FB-EIT/cos-556/)	Specialization Modules	[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/)	Core Program	[WP] Compulsory Elective
[EIT-88.-SG#2021] M.Sc. Embedded Computing Systems (ESY) [2021] (/mhb/FB-EIT/cos-677/)	Elective Subjects	[W] Elective Module