

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

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Module EIT-EIS-566-M-7

Robust Digital Systems (M, 3.0 LP)

Module Identification

Module Number	Module Name	CP (Effort)
EIT-EIS-566-M-7	<i>Robust Digital Systems</i>	3.0 CP (90 h)

Basedata

CP, Effort	3.0 CP = 90 h
Position of the semester	1 Sem. in SuSe
Level	[7] Master (Advanced)
Language	[EN] English
Module Manager	Stoffel, Dominik, apl. Prof. Dr.-Ing. (WMA DEPT: EIT) (/staff/623/)
Lecturers	Stoffel, Dominik, apl. Prof. Dr.-Ing. (WMA DEPT: EIT) (/staff/623/)
Area of study	[EIT-EIS] Electronic Design Automatization
Reference course of study	[EIT-88.781-SG#2010] M.Sc. Electrical and Computer Engineering [2010] (/mhb/FB-EIT/cos-556/)
Lifecycle-State	[NORM] Active

Courses

Type/SWS	Course Number	Choice in Module-Part	SL	PL	CP	Sem.
2V	EIT-EIS-566-K-7 (/mhb/courses/EIT-EIS-566-K-7/)	P	-	PL1	3.0	SuSe

- About [EIT-EIS-566-K-7]: Title: "Robust Digital Systems"; Presence-Time: 28 h; Self-Study: 62 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-EIS-566-K-7] **Robust Digital Systems** (/mhb/courses/EIT-EIS-566-K-7/):

- Dependability measures for hardware/software systems
- CMOS failure mechanisms
- Fault models
- Manufacturing test
- Design for Testability
- Hardware-based fault tolerance approaches
- Software-based fault tolerance approaches
- Information redundancy (error detecting and correcting codes)
- Design validation

Competencies / intended learning achievements

- Understand reliability threats during design, manufacturing and run time of digital systems
- Understand current techniques and methodologies to enhance the quality and reliability of digital hardware/software systems

Requirements for attendance (informal)

Modules:

- [EIT-EIS-314-M-2] Fundamentals of Information Processing (M, 6.0 LP) (/mhb/modules/EIT-EIS-314-M-2/)
- [EIT-EIS-571-M-4] Architecture of Digital Systems I (M, 4.0 LP) (/mhb/modules/EIT-EIS-571-M-4/)
- [EIT-EIS-573-M-4] Architecture of Digital Systems II (M, 4.0 LP) (/mhb/modules/EIT-EIS-573-M-4/)
- [EIT-EMS-324-M-2] Digital Technology Laboratory I (M, 4.0 LP) (/mhb/modules/EIT-EMS-324-M-2/)

Requirements for attendance (formal)

None

References to Module / Module Number [EIT-EIS-566-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. Automation and Control (A&C) [2021] (/mhb/FB-EIT/cos-676/)	Elective Modules	[W] Elective Module
[EIT-88.?-SG#2021] M.Sc. Embedded Computing Systems (ESY) [2021] (/mhb/FB-EIT/cos-677/)	Elective Subjects	[W] Elective Module