Module EIT-EIS-660-M-7

Synthesis and Optimization of Microelectronic Systems II (M, 3.0 LP)

Module Identification

Module Number	Module Name	CP (Effort)
EIT-EIS-660-M-7	*Synthesis and Optimization of Microelectronic Systems II*	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	Kunz, Wolfgang, Prof. Dr.-Ing. (PROF | DEPT: EIT) (/staff/344/)
Lecturers	Kunz, Wolfgang, Prof. Dr.-Ing. (PROF | DEPT: EIT) (/staff/344/)
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/)
Livecycle-State	[NORM] Active

Courses

Type/SWS	Course Number	Choice in Module-Part	SL	PL	CP	Sem.
2V	**EIT-EIS-660-K-7** (/mhb/courses/EIT-EIS-660-K-7/)	P	-	PL1	3.0	SuSe

- About **[EIT-EIS-660-K-7]**: Title: "Synthesis and Optimization of Microelectronic Systems II"; Presence-Time: 28 h; Self-Study: 62 h

Examination achievement PL1

- Form of examination: **written exam (Klausur) (60 Min.)**
- Examination Frequency: each semester

Evaluation of grades

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

Contents

From [EIT-EIS-660-K-7] Synthesis and Optimization of Microelectronic Systems II (/mhb/courses/EIT-EIS-660-K-7/)**:**

- Synthesis problem at the register transfer level
- Two-level minimization, ESPRESSO
- Functional decomposition
- Boolean and algebraic methods based on division
- Timing analysis
- Technology mapping
- Layout-driven synthesis

Competencies / intended learning achievements

After completing this module you can...

- ... explain the technology inside a modern tool for logic synthesis.
- ... list and elaborate on the strengths and limitations of optimization algorithms.
- ... list important trends in this field and their scientific challenges.

Requirements for attendance (informal)

Modules:

- [EIT-EIS-571-M-4] Architecture of Digital Systems I (M, 4.0 LP) (/mhb/modules/EIT-EIS-571-M-4/)

Requirements for attendance (formal)

None

References to Module / Module Number [EIT-EIS-660-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.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