

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

[TUK \(https://www.uni-kl.de\)](https://www.uni-kl.de) [MODHB \(https://modhb.uni-kl.de/\)](https://modhb.uni-kl.de/) [Homepage \(/\)](#)

Module EIT-DSV-531-M-4

Digital Signal Processing (M, 4.0 LP)

Module Identification

Module Number	Module Name	CP (Effort)
EIT-DSV-531-M-4	<i>Digital Signal Processing</i>	4.0 CP (120 h)

Basedata

CP, Effort	4.0 CP = 120 h
Position of the semester	1 Sem. in WiSe/SuSe
Level	[4] Bachelor (Specialization)
Language	[DE/EN] German or English as required
Module Manager	Potchinkov, Alexander, Prof. Dr.-Ing. (PROF DEPT: EIT) (/staff/340/)
Lecturers	Herzog, Stephan, Dr.-Ing. (WMA DEPT: EIT) (/staff/615/ Potchinkov, Alexander, Prof. Dr.-Ing. (PROF DEPT: EIT) (/staff/340/)
Area of study	[EIT-DSV] Digital Signal Processing
Reference course of study	[EIT-82.781-SG#2019] B.Sc. Electrical and Computer Engineering [2019] (/mhb/FB-EIT/cos-523/)
Lifecycle-State	[NORM] Active

Courses

Type/SWS	Course Number	Choice in Module-Part	SL	PL	CP	Sem.
3V	EIT-DSV-531-K-4 (/mhb/courses/EIT-DSV-531-K-4/)	WP	-	PL1	4.0	WiSe
3V	EIT-DEK-536-K-4 (/mhb/courses/EIT-DEK-536-K-4/)	WP	-	PL1	4.0	SuSe

- About [EIT-DSV-531-K-4]: Title: "Digital Signal Processing"; Presence-Time: 42 h; Self-Study: 78 h
- About [EIT-DEK-536-K-4]: Title: "Digital Signal Processing"; Presence-Time: 42 h; Self-Study: 78 h

Examination achievement PL1

- Form of examination: **written exam (Klausur) (90 Min.)**
- Examination Frequency: each semester

Evaluation of grades

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

Contents

From [EIT-DSV-531-K-4] Digital Signal Processing (/mhb/courses/EIT-DSV-531-K-4/):

- Discrete-time signals and systems,
- discrete convolution,
- difference equations,
- Fourier transform,
- z-transform,
- FIR and IIR digital filters,
- sampling of signals,
- discrete Fourier transform (DFT),
- fast Fourier transform (FFT),
- fast convolution.

From [EIT-DEK-536-K-4] Digital Signal Processing (/mhb/courses/EIT-DEK-536-K-4/):

- Discrete-time signals and systems,
- discrete convolution,
- difference equations,
- Fourier transform,
- z-transform,
- FIR and IIR digital filters,
- sampling of signals,
- discrete Fourier transform (DFT),
- fast Fourier transform (FFT),
- fast convolution.

Competencies / intended learning achievements

- Beherrschen der Systemtheorie linearer zeitdiskreter Systeme
- Beherrschen der Berechnungsverfahren linearer zeitdiskreter Systeme im Zeit- und Frequenzbereich
- Verstehen wichtiger Systemstrukturen
- Grundlegende Kenntnisse des Systementwurfs und der DFT-Anwendungen

Requirements for attendance (informal)

None

Requirements for attendance (formal)

None

References to Module / Module Number [EIT-DSV-531-M-4]

Course of Study	Section	Choice/Obligation
[EIT-82.781-SG#2019] B.Sc. Electrical and Computer Engineering [2019] (/mhb/FB-EIT/cos-523/)	Major-Specific Advanced Subjects	[P] Compulsory
[EIT-82.781-SG#2019] B.Sc. Electrical and Computer Engineering [2019] (/mhb/FB-EIT/cos-523/)	Major-Specific Advanced Subjects	[P] Compulsory
[EIT-82.781-SG#2019] B.Sc. Electrical and Computer Engineering [2019] (/mhb/FB-EIT/cos-523/)	Major-Specific Advanced Subjects	[P] Compulsory
[EIT-88.781-SG#2010] M.Sc. Electrical and Computer Engineering [2010] (/mhb/FB-EIT/cos-556/)	Theoretical Part	[P] Compulsory
[EIT-88.781-SG#2010] M.Sc. Electrical and Computer Engineering [2010] (/mhb/FB-EIT/cos-556/)	Theoretical Part	[P] Compulsory
[EIT-82.A44-SG#2018] B.Sc. Media and Communication Technology [2018] (/mhb/FB-EIT/cos-527/)	Core Subjects	[P] Compulsory
[EIT-82.?-SG#2021] B.Sc. Electrical and Computer Engineering [2021] (/mhb/FB-EIT/cos-685/)	Major-Specific Advanced Subjects	[P] Compulsory
[EIT-82.?-SG#2021] B.Sc. Electrical and Computer Engineering [2021] (/mhb/FB-EIT/cos-685/)	Major-Specific Advanced Subjects	[P] Compulsory
[EIT-88.?-SG#2021] M.Sc. Electrical and Computer Engineering [2021] (/mhb/FB-EIT/cos-686/)	Major Automation & Control (AUT)	[P] Compulsory
[EIT-88.?-SG#2021] M.Sc. Electrical and Computer Engineering [2021] (/mhb/FB-EIT/cos-686/)	Major Power Engineering (ENT)	[P] Compulsory
[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. Automation and Control (A&C) [2021] (/mhb/FB-EIT/cos-676/)	A&C Core Courses	[P] Compulsory
[EIT-88.?-SG#2021] M.Sc. Embedded Computing Systems (ESY) [2021] (/mhb/FB-EIT/cos-677/)	Elective Subjects	[W] Elective Module