

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

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Module EIT-NAT-912-M-4

Video Signal Processing I (M, 3.0 LP)

Module Identification

Module Number	Module Name	CP (Effort)
EIT-NAT-912-M-4	<i>Video Signal Processing I</i>	3.0 CP (90 h)

Basedata

CP, Effort	3.0 CP = 90 h
Position of the semester	1 Sem. in SuSe
Level	[4] Bachelor (Specialization)
Language	[DE] German
Module Manager	Urbansky, Ralph, Prof. Dr.-Ing. (PROF DEPT: EIT) (/staff/348/)
Lecturers	Urbansky, Ralph, Prof. Dr.-Ing. (PROF DEPT: EIT) (/staff/348/)
Area of study	[EIT-NAT] Communications Engineering
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	EIT-NAT-912-K-4 (/mhb/courses/EIT-NAT-912-K-4/)	P	-	PL1	3.0	SuSe

- About [EIT-NAT-912-K-4]: Title: "Video Signal Processing I"; 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-NAT-912-K-4] Video Signal Processing I (/mhb/courses/EIT-NAT-912-K-4/):

- Grundlagen der mehrdimensionalen Signalverarbeitung
- Statistische Methoden zur Analyse
- Modelle
- Optimierungsverfahren
- Inhaltsbezogene Analyse von Bildsignalen
- Physiologische und psychovisuelle Grundlagen des Sehens
- Quantisierung und Quellencodierung
- Bildcodierverfahren (JPEG, MPEG)
- Anwendungen, Übertragungsmedien und Standardisierung

Competencies / intended learning achievements

- Kenntnisse der Prinzipien visuellen Wahrnehmung (Auflösung, Farbe, Bewegung)
- Kenntnisse von Verfahren der verlustlosen und verlustbehafteten Bildcodierung
- Kenntnisse über Videosysteme und Videosignale in Zeit- und Frequenzbereich
- Grundlegende Kenntnisse des Entwurfs von Systemen der digitalen Videosignalverarbeitung

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-NAT-912-M-4]

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-82.A44-SG#2018] B.Sc. Media and Communication Technology [2018] (/mhb/FB-EIT/cos-527/)	Core Subjects	[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