HAW Kiel
Hochschule für Angewandte Wissenschaften Kiel
Kiel University of Applied Sciences

MI140 - Audio/Video Design and Processing

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General information	
Module Code	MI140
Unique Identifier	
Module Leader(s)	Prof. Dr. Prochnow, Steffen (steffen.prochnow@haw-kiel.de)
Lecturer(s)	Prof. Dr. Prochnow, Steffen (steffen.prochnow@haw-kiel.de)
Offered in Semester	Wintersemester 2023/24
Module duration	1 Semester
Occurrence frequency	Regular
Module occurrence	In der Regel im Wintersemester
Language	Englisch
Recommended for international students	Yes
Can be attended with different study programme	Yes

Curricular relevance (according to examination regulations)

Study Subject: M.Sc. - MIE - Information Engineering (PO 2022, V3)
Module type: Wahlmodul
Semester: 1, 2, 3

Qualification outcome

Areas of Competence: Knowledge and Understanding; Use, application and generation of knowledge; Communication and cooperation; Scientific self-understanding / professionalism.

The central subject of the module is the design of sounds, visuals and all related creative and technical areas.

Various software for audio and visual production is used (e.g. processing, open frameworks, Unity, Puredata, Max / MSP).
The idea here is experimenting with e.g. :
- techniques and methods for sound synthesis
- video and sound design
- Interaction techniques with video, sound or light installations.

Students develop a creative and technical installation or performance during the semester. The kind and technology of the installation used are freely selectable. The presentation of the project work at the end of the semester is basis for the grade.

Various creative design techniques can be used to implement the project work, for example:
- Network technology for communication between several computers (e.g. OSC, Midi)
- Interactive design with the computer (e.g. Kinect or various game controllers)
- Surround sound or light installation

For the creative, experimental work, a surround music system (consisting of 10 room loudspeakers) and various mini computers (e.g. Raspberry Pi) for sound and video installations are available.

Knowledge of composition or video production is not required.

Content information

Content	- Experimentation with Interactive Media - Programming of sounds and visual representations - Network supported interaction sensors (e.g. camera, body/gesture tracking, etc) - AR/VR/MR and AI for Media Interaction - 3D Audio systems for Sound localization - Programming languages for sound synthesis, sampling and processing - Methods and strategies of generative representations - Possible: e.g. programming of mini computers (e.g. Raspberry Pi) - Practicing in individual programming projects - No prior knowledge of art/sound generation necessary
Literature	- James R. Parker, Generative Art: Algorithms as Artistic Tool, Durvile, 2019 - Benedikt Gross, et al., Generative Design: Visualize, Program, and Create with JavaScript in p5.js, Princeton Architectural Press, 2018 - Yu Zhang, et. al., Coding Art: The Four Steps to Creative Programming with the Processing Language (Design Thinking), Apress, 2021 - Matt Pearson, Generative Art - A practical Guide using Processing, Manning Publications, 2011. - Daniel Shiffman, The Nature of Code: Simulating Natural Systems with Processing, 2012 - Johannes Kreidler, Loadbang: Programming Electronic Music in Pd, Wolke Verlag, 2009. - Andy Farnell, Designing Sound, MIT Press, 2010.

Teaching formats of the courses

Teaching format	SWS
Labor	2
Lehrvortrag	2

Workload	
Number of SWS	4 SWS
Credits	5,00 Credits
Contact hours	48 Hours
Self study	102 Hours

Module Examination	
Examination prerequisites according to exam regulations	None
MI140 - Projektbezogene Arbeiten	Method of Examination: Projektbezogene Arbeiten Weighting: 100% wird angerechnet gem. § 11 Absatz 2 PVO: No Graded: Yes