Anlage 5

Modulhandbuch des Studiengangs

Expanded Realities
Bachelor of Arts

des Fachbereichs Media

der Hochschule Darmstadt – University of Applied Sciences

INHALTSVERZEICHNIS

§ 0 Vorbemerkungen

(1) Sämtliche Module werden im Sinne des § 1 Abs.7 ABPO durch folgende Punkte beschrieben:

1. Die Inhalte (Indicative Module Contents);
2. Die Lern- und Qualifikationsziele (Learning Outcomes) im Sinne von zu erwerbenden Kompetenzen (Competencies);
3. Die Lehrveranstaltungen (Type of Course) mit den Lehr- und Lernformen (Teaching Methods);
4. Den nach den Lehrveranstaltungen und Lernformen des Moduls aufgeschlüsselten Arbeitsaufwand (Workload) und die Zahl der vergebenen Punkte (CP);
5. Die Voraussetzungen für die Zulassung zu dem Modul (Prerequisites Subjects)
6. Die Dauer (Duration) und zeitliche Gliederung (Semester) sowie die Häufigkeit des Angebots (Module Frequency);
7. Die Verwendbarkeit des Moduls in verschiedenen Studiengängen (Used in other Courses);
8. Die Beschreibung der im Modul zu erbringenden Prüfungsvorleistungen und Prüfungen (Assessment Methods), sowie gegebenenfalls weitere Voraussetzungen für den erfolgreichen Abschluss des Moduls (Prerequisites for CP).

(2) Die Übersicht über die Module in Anlage 1 der BBPO enthält:

1. Den nach den Lehrveranstaltungen und Lernformen des Moduls aufgeschlüsselten Arbeitsaufwand (workload) und die Zahl der vergebenen Punkte (CP);
2. Die Dauer des Angebots (Duration);
3. Die Art und Form der im Modul zu erbringenden Prüfungen.

(3) Die Zulassungsvoraussetzungen zum Bachelormodul sind in § 12 BBPO, zu allen anderen Modulen in § 11 BBPO geregelt. Darüber hinaus sind eventuelle weitere Zulassungsvoraussetzungen in den Modulbeschreibungen aufgeführt.

(4) Die Wahlpflichtmodule sind in Anlage 2 der BBPO aufgeführt und beschrieben.

§ 1 The Principle of Project Based Learning Workshops

Preconditions

Facing the rise of complexity

Media-Projects are characterized by a two-dimensional multi-disciplinarity: They are on first hand a combination of Media Design, Media Management, Media Technology (the "classical" disciplines) and on the other hand more and more often a combination of the diverse but meanwhile highly specific media genres with linear and/or interactive modalities like anima-tion, game, installations, video, film, sound, augmented and virtual reality ... Teaching should correspond to the exposure of complexity by accentuating respective methods how to handle this rising complexity.

Facing new concepts of work

The change from an industrial to a knowledge-oriented society has deep impact on contemporary and future work patterns. Moreover the half-value period of tools and software gets shorter ever. For the individual worker this means the rise of self directed work, self-motivation, self-organisation, lifelong learning and beyond this – teamwork in international (which means multi-cultural) settings. This requires teaching methods, which help students to reach the qualifications necessary in these fields.

Supporting constructivist learning

In the traditional sense, learning means to memorize and to recall facts. Thus declarative knowledge will be acquired in a static way, which is suitable in complex situations to only a limited extent. The future media developer rather needs practical methodological skills and problem solving competencies. Therefore a change from an instructional to a constructivist view of teaching is helpful. In this sense learning means to incorporate the persistent fundamentals on the one hand and to actively construct thought-patterns on the other hand.

Supporting active learning

Constructivist learning means the change from reproduction to production, from gaining knowledge to developing competencies, from examination to facilitation, from teaching to coaching. These requirements can be fulfilled by an adequate link between theory and practice.

Supporting to learn how to learn

Knowledge management is a central task of our knowledge society. Until today the idea of mainly explicit exchange of knowledge prevails. But especially in the media industry a change from codified knowledge (externalized knowledge) to tacit knowledge (implied/implicit knowledge) is necessary.

Definition

Project-based learning (PBL) is a student-centred pedagogical strategy, applied to the study courses, in which students learn about the given indicative subjects in the context of complex, multifaceted, and realistic problems. Working in groups, students identify what they already know, what they need to know, and how and where to access new information that may lead to resolution of the problem. The role of the instructor is that of a facilitator of learning who provides appropriate scaffolding of that process by (for example), asking probing questions, providing appropriate resources, and leading class discussions, as well as designing student assessments.

Implementation into the study programme

This form of teaching should embrace the disciplines Technology and Computer Science, Design for Expanded Realities, Methodology and Science as inherent parts of a workshop module with a given semester's topic. The module will follow the timeline of a real life situation including the steps:
Research, Concept and Development (e.g. Production and Implementation), Publishing, Evaluation and Documentation.

Way of teaching

From a constructivist perspective in a project-based learning strategy, the role of the instructor is to guide the learning process rather than provide. In this perspective, feedback and reflection on the learning process and group dynamics are essential components of PBL. Students are considered to be active agents who engage in social knowledge construction. Nevertheless, a professional and reliable input-framework is necessary.

Teaching methods in the workshops can be:
• Seminar
• Impulse keynote talk
• Coaching
• Discussion

General learning outcomes

In Detail PBL develops the following skills:
• Ability for critical thinking
• Analytical and methodological skills, i.e. transferable skills

- Research skills
- Problem solving skills
- Project management skills
- Communication, negotiation and conflict resolution skills
- Acquisition of knowledge that is flexibly usable
- Development of interdisciplinary competencies
- Social competency
- Capacity for teamwork
- Lifelong learning skills

Project phases

(Basic grid, to be adapted to focal-point-specific workshops)
- Define rules of work
- Analyse situation
- Define problem
- Design research & distribute work
- Research/work
- Share results & analyse results
- Conclusion

Benefits of PBL compared to traditional lecture teaching

- With a given project/workshop/production context, students want to learn to a greater extent than in pure lecture scenarios
- Students take ownership of the need to learn
- Students learn by doing – practice, trial-and-error, repetition, experimenting
- Making sense of what is being learned is more obvious – 'getting one's head around it'
- Better effects by learning from feedback: other people's reactions, seeing the results
- Deepening one's learning by explaining it to others, teaching, coaching
- Further deepening one's learning, by making informed judgements on one's own
- Work and on others' work – self- and peer-assessing

§ 2 Modulbeschreibungen der Pflichtmodule im 1. Semester

1	**Modulname (Module name)**
	Basic Principles of Design and Expanded Realities
1.1	**Modulkürzel (Shorthand symbol)**
	ER-D1
1.2	**Art (Kind)**
	Mandatory module
1.3	**Lehrveranstaltung (Lecture)**
	Basic Principles of Design and Expanded Realities
1.4	**Semester (Semester)**
	1st Semester
1.5	**Modulverantwortliche(r) (Module responsible)**
	Prof. Tilmann Kohlhaase, Prof. Dr. Frank Gabler
1.6	**Weitere Lehrende (Other teachers)**
	N.N. (associate lecturers)
1.7	**Studiengangsniveau (Degree level)**
	Bachelor
1.8	**Lehrsprache (Teaching language)**
	English
2	**Inhalt (Content)**
	General Description
	This module covers theoretical and practical aspects and provides a broad foundation for conceptual and practical design processes in the field of expanded realities. The learner will gain a factual and conceptual knowledge base with emphasis on design principles condensed from traditional disciplines like motion pictures, animation, game, theatre, interaction design, scenography, architecture or sound and music. In addition an insight is given into fundamental aspects of world building and simulation related to human perception in expanded realities. The module encourages students to develop and discuss an analytic, creative, critical and ethical approach to visual literacy in the field.

Indicative Module Content

- Basic conceptual design and prototyping for expanded realities
- Introduction to user-centered design methods and experience design
- Spatial design and spatial vision
- Principles and concepts of ambient design
- Worldbuilding concepts using computer generated images and animation
- Basic principles of cinematography and visual storytelling in film, games and animation
- Basic principles of 3D modelling and 3D-animation
- Basic elements and principles of game play design
- Introduction to basic design methods (idea generation, research, concept development and prototyping)
- Introduction to analysis and critique of existing concepts in the field of expanded realities
- Principles of design and audio-visual composition.
- Introduction to basic design principles of cinematography, scenography, sound design, animation, game design, theatre
- Volumetric film
- Basic concepts of virtual worlds
- Introduction to animation

3	**Ziele (Learning Outcomes)**

After successful completion students shall demonstrate the following skills:

1_Knowledge & Understanding:
- Identify and describe basic aesthetic, structural and dramaturgical elements of time-based and interactive scenarios and experiences.
- Demonstrate awareness of ethical issues and history in current areas of expanded realities and ability to discuss these in relation to personal beliefs and values.
- Understand and demonstrate knowledge of basic principles and methods of conceptual and practical design and their impact on expanded realities.

2_Intellectual skills:
- Analyse and describe expanded realities in terms of their usage of space, time, motion, sound and interaction.
- Identify key elements of existing design concepts for expanded realities from an aesthetic point of view.
- Demonstrate an awareness of genre languages and conventions typically applied to expanded realities.
- Apply basic tools and methods of design accurately and carefully to a well-defined problem and appreciate the complexity of expanding realities.

3_Competences and Practical & Professional skills:
- Identify and apply basic methods of generating, developing and visualizing ideas in the context of an expanded realities production.
- Develop and document basic visual research for scenarios in expanded realities.
- Develop simple expanded realities concepts focusing on visual languages, narrative styles and experiences specific for the genre.
- Select and apply tools and methods to build and introduce 360⁰ environments, virtual worlds and time-

based experiences.
- Pitch and evaluate design concepts in regards and relevance to the field of expanded reality projects.

4_Transferable skills:
- Evaluate own strengths and weakness within criteria largely set by others.
- Take responsibility for own learning with appropriate support.
- Communicate effectively in a format appropriate to the media disciplines and report and document practical procedures in a clear and concise manner.

4	**Lehr- und Lernformen (Teaching Methods)**
	a) Lecture (V)
	b) Practical sessions (Ü)
	Media: Use of changing media according to the possibilities given in the lecture hall, seminar room or laboratory room.

5	**Arbeitsaufwand und Credit Points (Workload and Credits)**
	10 CP
	a) 2 SWS/32 h
	b) 5 SWS/80 h
	Self-Study: 138 h
	Workload: 250 h

6	**Prüfungsform, Prüfungsdauer und Prüfungsvoraussetzung (Assessment Methods)**
	The part of pre-examinations at the final mark in form of homework, practical work and documentation is 70%.
	The part of the final presentation and written documentation at the final mark is 30%.
	Opportunities to repeat the pre-examinations and examinations are provided in the following semester.
	The lecturer announces exemptions in the form of examination according to §10 ABPO in the first week of the lecture period.

7	**Notwendige Kenntnisse (Prerequisite Subjects)**
	Not applicable / entfällt

8	**Empfohlene Kenntnisse (Recommended Subjects)**
	Not applicable / entfällt

9	**Dauer, zeitliche Gliederung und Häufigkeit des Angebots (Duration, time structure and frequency of the offer)**
	2 (V) + 5 (Ü) SWS, Winter Term
10	**Verwendbarkeit des Moduls (Usability of the module)**
	Not applicable / entfällt
11	**Literatur (Literature)**
	Will be announce at the beginning of the lecture period

Fundamentals of Technology in Expanded Realities

1	**Modulname (Module name)**
	Fundamentals of Technology in Expanded Realities
1.1	**Modulkürzel (Shorthand symbol)**
	ER-T1
1.2	**Art (Kind)**
	Mandatory module
1.3	**Lehrveranstaltung (Lecture)**
	Fundamentals of Technology in Expanded Realities
1.4	**Semester (Semester)**
	1st Semester
1.5	**Modulverantwortliche(r) (Module responsible)**
	Prof. Dr. Frank Gabler
1.6	**Weitere Lehrende (Other teachers)**
	N.N. (associate lecturers)
1.7	**Studiengangsniveau (Degree level)**
	Bachelor
1.8	**Lehrsprache (Teaching language)**
	English
2	**Inhalt (Content)**
	General Description
	This module provides a fundamental understanding of computer technology, electronics and basic programming skills. The students should deepen their knowledge and gain practical experience in media technology and with formats such as digital images, video, sound and computer generated 3D-environments. This course will also provide basic knowledge in mathematics, physics and how to apply them by the use of numerical mathematics (e.g. algorithms).
	Indicative Module Content
	• Profound understanding of data and information • Basic understanding of audio-visual technology and capture devices • Basic understanding of electronics • Introduction to state-of-the-art game engines as development environment • Computer as a tool (e.g. I/O operations, hard- and software interfaces) • Basics of network-technology • Fundamentals of Computer Graphics

	• Introduction to computer science and programming (methods, programming environments) • Basics of logic and logical operations • Solid knowledge of basic math (e.g. geometry, linear algebra, simple differential equations) • Applied numerical mathematics
3	**Ziele (Learning Outcomes)** After successful completion students shall demonstrate the following skills: **1_Knowledge & Understanding:** • Understand the meaning and use of analog and digital data in computer science. • Demonstrate understanding of syntax, data and knowledge. • Show understanding of the different forms of audio-visual media and their representation in computer science. • Understand and use basic audio-visual capture devices. • Understand and use the computer and related media hardware as a tool to design and create applications in the field of expanded realities. • Describe and apply basic software architectures, data structures, algorithms in the field of expanded realities. • Describe the role of computer science and technology in different media areas. **2_Intellectual skills:** • Understand and make use of basic concepts, design patterns and methods for software development. • Analyse, understand and develop algorithms. **3_Competenes and Practical & Professional skills:** • Demonstrate basic programming skills. • Demonstrate fundamental knowledge in electronics. • Gain and apply basic knowledge in applied mathematics. • Gain and apply basic knowledge in physics. • Apply basic knowledge in numerical mathematics. **4_Transferable skills:** • Understand to role of technology in society and as driver for creative innovations. • The use of mathematics and physics in different field of expanded realities.
4	**Lehr- und Lernformen (Teaching Methods)** a) Lecture (V) b) Practical sessions (Ü) Media: Use of changing media according to the possibilities given in the lecture hall, seminar room or laboratory room.
5	**Arbeitsaufwand und Credit Points (Workload and Credits)** 10 CP a) 2 SWS/32 h

	b) 6 SWS/96 h Self-Study: 122 h Workload: 250 h
6	**Prüfungsform, Prüfungsdauer und Prüfungsvoraussetzung (Assessment Methods)** The part of pre-examinations at the final mark in form of homework, practical work and documentation is 50%. If the module exam is conducted as a written exam in accordance with § 12, the duration is 90 minutes. The part of written exam at the final mark is 50%. Opportunities to repeat the pre-examinations and examinations are provided in the following se-mester. The lecturer announces exemptions in the form of examination according to §10 ABPO in the first week of the lecture period.
7	**Notwendige Kenntnisse (Prerequisite Subjects)** Not applicable / entfällt
8	**Empfohlene Kenntnisse (Recommended Subjects)** Not applicable / entfällt
9	**Dauer, zeitliche Gliederung und Häufigkeit des Angebots (Duration, time structure and frequency of the offer)** 2 (V) + 6 (Ü) SWS, Winter Term
10	**Verwendbarkeit des Moduls (Usability of the module)** Not applicable / entfällt
11	**Literatur (Literature)** Will be announce at the beginning of the lecture period

Applied Sciences 1

1	**Modulname (Module name)**
	Applied Sciences 1
1.1	**Modulkürzel (Shorthand symbol)**
	ER-S1
1.2	**Art (Kind)**
	Mandatory module
1.3	**Lehrveranstaltung (Lecture)**
	Applied Sciences 1
1.4	**Semester (Semester)**
	1st Semester
1.5	**Modulverantwortliche(r) (Module responsible)**
	Prof. Dr. Frank Gabler
1.6	**Weitere Lehrende (Other teachers)**
	N.N. (associate lecturers)
1.7	**Studiengangsniveau (Degree level)**
	Bachelor
1.8	**Lehrsprache (Teaching language)**
	English
2	**Inhalt (Content)**
	General Description
	The expanded realities module *Applied Science 1* follows an interdisciplinary approach to human sciences, cognitive sciences and natural sciences.
	It provides the students with fundamental knowledge in STEM (Science, Technology, Engineering, and Mathematics) related fields of science and research and their role and importance in expanded realities. Another major goal is to convey and understand the role of cognitive science, physiology, psychology and human perception in the field of expanded realties.
	Indicative Module Content
	• Profound understanding of human senses • Knowledge of human physiology • Knowledge and awareness of cognitive science and psychology in the field of expanded realities • The role of STEM (Science, Technology, Engineering, and Mathematics) in expanded realities • Emerging technologies and their influence for expanded realities

3	**Ziele (Learning Outcomes)**
	On successful completion of this module the students shall be able to or to demonstrate the following skills:
	1_Knowledge & Understanding:
	• Show knowledge in the principles and limitations of human perception (visual, acoustical, tactile, etc.).
	• Demonstrate basic knowledge of human physiology.
	2_Intellectual skills:
	• Understanding cognitive science and psychology in the field of expanded realities.
	• Understand the role of mathematics, physics and technology in the field of expanded realities.
	3_ Competences and Practical & Professional skills:
	• Understand the role of STEM (Science, Technology, Engineering, and Mathematics) and apply it in further research and project development.
4	**Lehr- und Lernformen (Teaching Methods)**
	c) Lecture (V)
	d) Practical sessions (Ü)
	Media: Use of changing media according to the possibilities given in the lecture hall, seminar room or laboratory room.
5	**Arbeitsaufwand und Credit Points (Workload and Credits)**
	5 CP
	c) 2 SWS/32 h
	d) 2 SWS/32 h
	Self-Study: 61 h
	Workload: 125 h
6	**Prüfungsform, Prüfungsdauer und Prüfungsvoraussetzung (Assessment Methods)**
	The part of pre-examinations at the final mark in form of homework, practical work and documentation is 50%.
	If the module exam is conducted as a written exam in accordance with § 12, the duration is 90 minutes. The part of written exam at the final mark is 50%.
	Opportunities to repeat the pre-examinations and examinations are provided in the following se-mester.
	The lecturer announces exemptions in the form of examination according to §10 ABPO in the first week of the lecture period.

7	**Notwendige Kenntnisse (Prerequisite Subjects)**
	Not applicable / entfällt
8	**Empfohlene Kenntnisse (Recommended Subjects)**
	Not applicable / entfällt
9	**Dauer, zeitliche Gliederung und Häufigkeit des Angebots (Duration, time structure and frequency of the offer)**
	2 (V) + 2 (Ü) SWS, Winter Term
10	**Verwendbarkeit des Moduls (Usability of the module)**
	Not applicable / entfällt
11	**Literatur (Literature)**
	Will be announce at the beginning of the lecture period

1	**Modulname (Module name)**
	Methodologies 1: Media Studies
1.1	**Modulkürzel (Shorthand symbol)**
	ER-M1
1.2	**Art (Kind)**
	Mandatory module
1.3	**Lehrveranstaltung (Lecture)**
	Methodologies 1: Media Studies
1.4	**Semester (Semester)**
	1st Semester
1.5	**Modulverantwortliche(r) (Module responsible)**
	Prof. Claudia Söller-Eckert, Prof. Tilmann Kohlhaase, Prof. Dr. Frank Gabler
1.6	**Weitere Lehrende (Other teachers)**
	N.N. (associate lecturers)
1.7	**Studiengangsniveau (Degree level)**
	Bachelor
1.8	**Lehrsprache (Teaching language)**
	English
2	**Inhalt (Content)**
	General Description
	The *Methodologies Strand* complements the student's understanding of contexts and development methods within the field of expanded realities production. It aims to strengthen the student's organization and communication skills, their critical, quality oriented thinking and their awareness for audiences and users.
	The module *Media Studies* provides the students with elementary interdisciplinary knowledge and skills to reflect applications and experiences of expanded realities with respect to their economic, historic, cultural, aesthetic and ethical dimensions and contexts.
	It introduces basic methodical knowledge and skills to analyse and critique expanded realities productions with regard to characteristics of format, genre and audio-visual language. It provides a first overview over concepts and strategies to identify and describe the historic, cultural, ethical and social dimensions of productions in the field of expanded realities.
	It introduces the students to the major challenges of communication in economically globalized and socially diversified media spheres and provides the students with critically informed knowledge about issues of gender and diversity representation.

| | **Indicative Module Content**

• Introduction to the history and basic concepts of digital media (film, video, games, basics of cinematography and animation theory)
• Introduction to the history of expanded realities (technology, experiences, milestones)
• Introduction to elementary terms, basic concepts and methods of expanded realities
• Introduction and overview of cultural, aesthetic, ethical and economic dimensions of expanded realities applications and experiences
• Introduction to fundamental characteristics of formats and genres and in the field of expanded realities
• Introduction to the role of users and audiences
• Introduction to gender and diversity representation in the arts and in popular culture
• Introduction to scientific methods of research and documentation with regard to media representation of diversity and interculturalism
• Introduction to communication skills for intercultural communication and collaboration in international teams |
|---|---|
| **3** | **Ziele (Learning Outcomes)**

After successful completion of the module Media Studies learners will be able to:

1_Knowledge & Understanding:
• Demonstrate basic knowledge of the historical and technological development of expanded realities.

2_Intellectual skills:
• Identify and apply elementary terms, basic theoretical concepts and methods related to the study of expanded realities.
• Identify and describe fundamental characteristics of formats and genres and in the field of expanded realities.
• Identify and discuss issues of gender and diversity representation in the media and their ethical, social and humanitarian implications (e.g. imbalanced or stereotyped representation of age, gender, ethnicity, culture, religion, social and economic status).
• Identify and apply creative strategies to foster diversity and interculturalism in expanded realities scenarios.

3_Competences and Practical & Professional skills:
   • Articulate a basic understanding of historic, cultural, aesthetic, ethical and economic dimensions of expanded realities applications and experiences
   • Appreciate the role of users and audiences.
   • Demonstrate awareness and skills for intercultural communication and collaboration.
   • Show communication skills though written and oral forms. |
| **4** | **Lehr- und Lernformen (Teaching Methods)**

Seminar (Sem)

Media: Use of changing media according to the possibilities given in the lecture hall, seminar room or laboratory room. |

5	**Arbeitsaufwand und Credit Points (Workload and Credits)**
	5 CP
	2 SWS / 32 h
	Self-Study: 93 h
	Workload: 125 h
6	**Prüfungsform, Prüfungsdauer und Prüfungsvoraussetzung (Assessment Methods)**
	The part of pre-examinations at the final mark in form of homework, practical work and documentation is 50%.
	If the module exam is conducted as a written exam in accordance with § 12, the duration is 90 minutes. The part of written exam at the final mark is 50%.
	Opportunities to repeat the pre-examinations and examinations are provided in the following se-mester.
	The lecturer announces exemptions in the form of examination according to §10 ABPO in the first week of the lecture period.
7	**Notwendige Kenntnisse (Prerequisite Subjects)**
	Not applicable / entfällt
8	**Empfohlene Kenntnisse (Recommended Subjects)**
	Not applicable / entfällt
9	**Dauer, zeitliche Gliederung und Häufigkeit des Angebots (Duration, time structure and frequency of the offer)**
	2 (Sem) SWS, Winter Term
10	**Verwendbarkeit des Moduls (Usability of the module)**
	Not applicable / entfällt
11	**Literatur (Literature)**
	Will be announce at the beginning of the lecture period

§ 3 Modulbeschreibungen der Pflichtmodule im 2. Semester

1	**Modulname (Module name)**
	Principles of Design and Expanded Realities
1.1	**Modulkürzel (Shorthand symbol)**
	ER-D2
1.2	**Art (Kind)**
	Mandatory module
1.3	**Lehrveranstaltung (Lecture)**
	Principles of Design and Expanded Realities
1.4	**Semester (Semester)**
	2nd Semester
1.5	**Modulverantwortliche(r) (Module responsible)**
	Prof. Tilmann Kohlhaase, Prof. Dr. Frank Gabler
1.6	**Weitere Lehrende (Other teachers)**
	N.N. (associate lecturers)
1.7	**Studiengangsniveau (Degree level)**
	Bachelor
1.8	**Lehrsprache (Teaching language)**
	English
2	**Inhalt (Content)**
	General Description
	This module will focus on the role of the self and immersion in expanded realities. When creating and designing new realities observation, simulation, evaluation and a deep understanding of perception will be driving forces and tools in the process. The learner is encouraged to adopt a critically informed, analytic and creative approach to the iterative resolution of design challenges related to media information, entertainment products and industrial applications in the field of expanded realities.
	Indicative Module Content
	• Basic principles and methods of character creation development and design • Basics of interaction design, mental models and metaphors • Introduction to creative methods and strategies (e.g. Moodboards, Kanban, Design Thinking)

	• General methods and strategies of visual storytelling, cinematography and dramaturgy for expanded realities • Tools and forms of storytelling like archetypes, rhythm, empathy, structure, genres, serials • Methods of observation and analysis of human behaviours • Prototyping in three-dimensional spaces • Psychology of user experience and behaviour • Principles of motion and navigation in virtual worlds • Principles of control attention and orientation in 360^0 environments like light, movement, gaze, sound, ambient design etc. • Introduction to analysis and critique of existing concepts in the field of expanded realities • Introduction to sound design for virtual worlds (e.g. ambient sound, spatial audio, binaural sound) • Introduction to analysis and critique of existing concepts in the field of expanded realities • Introduction to character animation • Expanded Realties as prototyping environment • Expanded Realties in industrial and social applications and experiences • Expanded Realties methods in education and science
3	**Ziele (Learning Outcomes)** After successful completion students shall demonstrate the following skills: **1_Knowledge & Understanding** • Demonstrate critical understanding of fundamental theories, methods and practices involved with creating design concepts for expanded realities. • Identify and describe typical elements and characteristics of ludic and narrative scenarios with regard to genre languages. • Demonstrate a deep knowledge and understanding of the various roles of the user(s) in expanded realities regarding immersion and experience. **2_ Intellectual skills** • Demonstrate an awareness and analytical reflection of genre specific historical and contemporary developments as well as current trends in the field of expanded realities. • Recognize and evaluate processes and conceptualisations of immersion, engagement, representation, experience and identification in expanded realities. • Interpret and critique design concepts for applications and experiences in the field of expanded realities with regard to their functional and aesthetic qualities. **3_Competences and Practical & Professional Skills** • Understand and apply concepts of visual, auditive and narrative storytelling and their implication in expanded realities • Identify and apply principles of character creation and design in context of agency, presence, behaviour and storytelling in expanded realities. • Understand and use different roles of users like player, audience or explorer and their impact on the social and emotional structure of the experience. • Identify and apply standard methods of iteration and prototyping in the context of expanded realities. • Define and apply key principles of human-human and human-machine interaction simulating behaviour and nonverbal communication like gestures, gaze, voice or sense of locality. • Generate and document structured conceptual research for expanded realities scenarios

	• Shape believable and consistent audio-visual representations of action, emotion and mood by employing principles of animation, character performance, environment and game design. **4_Transferable skills** • Apply relevant criteria to articulate, discuss and evaluate creative decisions. • Demonstrate effective methods in self-directed work. • Show confidence in application of own criteria of judgement and challenge received opinion as well as reflect on action.
4	**Lehr- und Lernformen (Teaching Methods)** a) Lecture (V) b) Practical sessions (Ü) Media: Use of changing media according to the possibilities given in the lecture hall, seminar room or laboratory room.
5	**Arbeitsaufwand und Credit Points (Workload and Credits)** 10 CP a) 2 SWS/32 h b) 5 SWS/80 h Self-Study: 138 h Workload: 250 h
6	**Prüfungsform, Prüfungsdauer und Prüfungsvoraussetzung (Assessment Methods)** The part of pre-examinations at the final mark in form of homework, practical work and documentation is 70%. The part of the final presentation and written documentation at the final mark is 30%. Opportunities to repeat the pre-examinations and examinations are provided in the following semester. The lecturer announces exemptions in the form of examination according to §10 ABPO in the first week of the lecture period.
7	**Notwendige Kenntnisse (Prerequisite Subjects)** Not applicable / entfällt
8	**Empfohlene Kenntnisse (Recommended Subjects)** Not applicable / entfällt

9	**Dauer, zeitliche Gliederung und Häufigkeit des Angebots (Duration, time structure and frequency of the offer)**
	2 (V) + 5 (Ü) SWS, Summer Term
10	**Verwendbarkeit des Moduls (Usability of the module)**
	Not applicable / entfällt
11	**Literatur (Literature)**
	Will be announce at the beginning of the lecture period

1	**Modulname (Module name)**
	Technology in Expanded Realities
1.1	**Modulkürzel (Shorthand symbol)**
	ER-T2
1.2	**Art (Kind)**
	Mandatory module
1.3	**Lehrveranstaltung**
	Technology in Expanded Realities
1.4	**Semester (Semester)**
	2nd Semester
1.5	**Modulverantwortliche(r) (Module responsible)**
	Prof. Dr. Frank Gabler
1.6	**Weitere Lehrende (Other teachers)**
	N.N. (associate lecturers)
1.7	**Studiengangsniveau (Degree level)**
	Bachelor
1.8	**Lehrsprache (Teaching language)**
	English
2	**Inhalt (Content)**
	General Description
	To design and develop applications in the field of expanded realities a profound knowledge and extensive programming skillset is needed. This module provides a fundamental understanding in programing in state-of-the-art 3D game engines, software architecture concepts like Object Oriented Programming and Design Pattern, basic 2D- and 3D graphics programming. The students will learn how to use sensor- and actuators technology for their own applications and how to integrate controller technology. The course will also address motion capturing for animation and real-time tracking. Fundamental understanding of technology and use of HMD (Head mounted displays) for VR- and AR Applications will be achieved.
	Indicative Module Content
	• Programming state-of-the-art game engines • Rendering technologies- and pipelines • Basics of sensor- and actuators technology • Basics of motion capturing and real-time tracking • Controller technology

	• Basic design pattern for software architecture • OOP (object oriented programming) ad advanced data structures • Network technology • Software architecture tools and methods • Real-time effects, particle systems and shaders • Sound sources and effects into 3D environments • HMD (Head mounted displays) for VR- and AR Applications
3	**Ziele (Learning Outcomes)** After successful completion students shall demonstrate the following skills: **1_Knowledge & Understanding:** • Attain basic knowledge of basic design pattern for software architecture. • Gain and apply basic knowledge in network technology. • Demonstrate a basic understanding in the workflow and development in state-of-the-art game engine environments. • Show understanding of rendering technologies- and pipelines. • Gain and apply basic knowledge in technical art. **2_Intellectual skills:** • Understanding of technological requirements for applications in the field of expanded realities. • Demonstrate the ability to analyse complex tasks and implement them as algorithms. **3_Competences and Practical & Professional skills:** • Understand the advantages and the use state-of-the-art software architecture tools and methods. • Gain basic knowledge in collaborative software development environments. • Use concepts like OOP (object oriented programming) and advanced data structures practically. • Understand and apply basics of network- and multiplayer technology (e.g. games). • Understand and apply basic concepts of mobile application development. • Using visual real-time effects, particle systems and shaders. • Demonstrate the integration of sound sources into 3D environments. • Understand and apply basic rigging technologies. **4_Transferable skills:** • Understand technology and computer science as tools and sources for the creative process.
4	**Lehr- und Lernformen (Teaching Methods)** a) Lecture (V) b) Practical sessions (Ü) Media: Use of changing media according to the possibilities given in the lecture hall, seminar room or laboratory room.

5	**Arbeitsaufwand und Credit Points (Workload and Credits)**
	10 CP
	a) 2 SWS/32 h
	b) 6 SWS/96 h
	Self-Study: 122 h
	Workload: 250 h
6	**Prüfungsform, Prüfungsdauer und Prüfungsvoraussetzung (Assessment Methods)**
	The part of pre-examinations at the final mark in form of homework, practical work and documentation is 50%.
	If the module exam is conducted as a written exam in accordance with § 12, the duration is 90 minutes. The part of written exam at the final mark is 50%.
	Opportunities to repeat the pre-examinations and examinations are provided in the following se-mester.
	The lecturer announces exemptions in the form of examination according to §10 ABPO in the first week of the lecture period.
7	**Notwendige Kenntnisse (Prerequisite Subjects)**
	Not applicable / entfällt
8	**Empfohlene Kenntnisse (Recommended Subjects)**
	Not applicable / entfällt
9	**Dauer, zeitliche Gliederung und Häufigkeit des Angebots (Duration, time structure and frequency of the offer)**
	2 (V) + 6 (Ü) SWS, Summer Term
10	**Verwendbarkeit des Moduls (Usability of the module)**
	Not applicable / entfällt
11	**Literatur (Literature)**
	Will be announce at the beginning of the lecture period

1	**Modulname (Module name)** Applied Sciences 2
1.1	**Modulkürzel (Shorthand symbol)** ER-S2
1.2	**Art (Kind)** Mandatory module
1.3	**Lehrveranstaltung (Lecture)** Applied Sciences 2
1.4	**Semester (Semester)** 2nd Semester
1.5	**Modulverantwortliche(r) (Module responsible)** Prof. Dr. Frank Gabler , Prof. Tilmann Kohlhaase
1.6	**Weitere Lehrende (Other teachers)** N.N. (associate lecturers)
1.7	**Studiengangsniveau (Degree level)** Bachelor
1.8	**Lehrsprache (Teaching language)** English
2	**Inhalt (Content)** **General Description** The expanded realities module *Applied Science 2:* Sub-module *Scientific Work Process* provides the students with fundamental knowledge in the scientific work process. Main emphasis of the module is the imparting of theoretical foundations for independent scientific work. The learner will understand and apply different scientific research methods. Furthermore the module provides the students with fundamental knowledge of how to approach a scientific publication and how to conduct a profound literature research. The students will learn how to use information management techniques and read and write scientific publications. **Indicative Module Content** • Purpose and goals of scientific work • Different forms and structures of artistic research • Basic structure of a research projects • Science theory

	• Scientific research methods
	• Inductive and deductive research logic
	• Objectivity in the research process
	• Founding and management of research projects
	• Scientific talks and presentation
3	**Ziele (Learning Outcomes)**
	On successful completion of this module the students shall be able to or to demonstrate the following skills:
	1_Knowledge & Understanding:
	• Understand the purpose and goals of scientific work.
	• Show understanding of the basic structure of a research project.
	• Understand different forms and structure of artistic research.
	• Understand important concepts of science theory.
	• Understand the limits of objectivity in the research process.
	• Understand and apply different scientific research methods.
	• Understand and apply form and structure of scientific papers.
	• Understand and apply the requirements of a scientific bibliography.
	2_Intellectual skills:
	• Apply principles of scientific theory.
	• Apply the requirements of scientific hypotheses.
	3_Competenes and Practical & Professional skills:
	• Develop a correct formulation of scientific hypotheses.
	• Make use of information management techniques.
	• Prepare and perform a scientific talk/presentation.
	• Explain and apply techniques for scientific writing, and research methodology to prepare the writing of a scientific report, poster, paper or degree project.
	• Conduct a profound literature research, work on the Internet.
	• Make use of information management techniques.
4	**Lehr- und Lernformen (Teaching Methods)**
	a) Lecture (V) / Seminar (Sem)
	b) Practical sessions (Ü)
	Media: Use of changing media according to the possibilities given in the lecture hall, seminar room or la-

		boratory room.
5	**Arbeitsaufwand und Credit Points (Workload and Credits)**	
	5 CP	
	a) 2 SWS/32 h	
	b) 2 SWS/32 h	
	Self-Study: 61 h	
	Workload: 125 h	
6	**Prüfungsform, Prüfungsdauer und Prüfungsvoraussetzung (Assessment Methods)**	
	The part of pre-examinations at the final mark in form of homework, practical work and documentation is 50%.	
	If the module exam is conducted as a written exam in accordance with § 12, the duration is 90 minutes. The part of written exam at the final mark is 50%.	
	Opportunities to repeat the pre-examinations and examinations are provided in the following semester.	
	The lecturer announces exemptions in the form of examination according to §10 ABPO in the first week of the lecture period.	
7	**Notwendige Kenntnisse (Prerequisite Subjects)**	
	Not applicable / entfällt	
8	**Empfohlene Kenntnisse (Recommended Subjects)**	
	Not applicable / entfällt	
9	**Dauer, zeitliche Gliederung und Häufigkeit des Angebots (Duration, time structure and frequency of the offer)**	
	2 (V) + 2 (Ü) SWS, Summer Term	
10	**Verwendbarkeit des Moduls (Usability of the module)**	
	Not applicable / entfällt	
11	**Literatur (Literature)**	
	Will be announce at the beginning of the lecture period	

1	**Modulname (Module name)**
	Methodologies 2: Expanded Realities Studies
1.1	**Modulkürzel (Shorthand symbol)**
	ER-M2
1.2	**Art (Kind)**
	Mandatory module
1.3	**Lehrveranstaltung (Lecture)**
	Methodologies 2: Expanded Realities Studies
1.4	**Semester (Semester)**
	2nd Semester
1.5	**Modulverantwortliche(r) (Module responsible)**
	Prof. Claudia Söller-Eckert, Prof. Tilmann Kohlhaase, Prof. Dr. Frank Gabler
1.6	**Weitere Lehrende (Other teachers)**
	N.N. (associate lecturers)
1.7	**Studiengangsniveau (Degree level)**
	Bachelor
1.8	**Lehrsprache (Teaching language)**
	English
2	**Inhalt (Content)**
	General Description
	The *Methodologies Strand* complements the student's understanding of contexts and development methods within the field of expanded realities production with a holistic, knowledge-based methical approach. It aims to strengthen the student's organization and communication skills, their critical, quality oriented thinking and their awareness for audiences and users.
	The module *Expanded Realities Studies* provides the students with relevant methical knowledge and skills to analyse and critique expanded realities productions with regard to characteristics of format, genre and audio-visual language. It provides learners with common concepts and strategies to identify and describe the historic, cultural, ethical and social and economic dimensions of related productions.
	It provides a foundation for communication and cooperation in expanded realities project teams and a knowledge summary in the core disciplines. The students are introduced to theories, methods and practices typically involved in the development, production and distribution of applications in the field of expanded realities.

	Indicative Module Content
	• Expanded realities studies: key terms, concepts, perspectives and milestones
	• Studies of narratology and storytelling for expanded realities
	• Studies of cinematography, animation and sound in expanded realities
	• Studies of content, genres, genre languages, formats, styles and audio-visual language in expanded realities
	• Notions and concepts of space, time, environment and architecture in virtual environments
	• Audiences and users: concepts and theories of media perception, media effects and media usage
	• Experiment and Avant-garde in expanded realities
	• Expanded Realities business: Producing and production development in the international media industries
	• Introduction to fundamental concepts and strategies of project management
	• Professional methods and practices of producing and production management
3	**Ziele (Learning Outcomes)**
	After successful completion of the module *Expanded Realities Studies* learners will be able to:
	1_Knowledge & Understanding:
	• Exhibit a basic understanding of relevant concepts, methods and practices involved with creating and producing media in the field of expanded realities.
	• Demonstrate knowledge of elementary concepts and theories related to art history and visual culture and apply them to productions in the field of expanded realities.
	• Display an understanding of fundamental concepts, methods and practices of project management in the creative industries.
	2_Intellectual skills:
	• Analyse and critically evaluate productions in the field of expanded realities with regard to content, formal structure and audio-visual language.
	• Identify and describe genres, formats, styles and genre languages in the field of expanded realities.
	• Identify and describe typical roles and workflows in the related industries.
	3_Competences and Practical & Professional skills:
	• Explain and apply key terms and perspectives of expanded realities studies.
	• Carry out basic research under supervision; document and present research results in a structured manner.
	• Understand and explore the role and behaviour of users and audiences.
	• Identify and describe relevant conceptual models, methods and practices in the development process of projects

4	**Lehr- und Lernformen (Teaching Methods)**
	a) Lecture (V) / Seminar (Sem)
	b) Practical sessions (Ü)
	Media: Use of changing media according to the possibilities given in the lecture hall, seminar room or laboratory room.
5	**Arbeitsaufwand und Credit Points (Workload and Credits)**
	5 CP
	a) 1 SWS/16 h
	b) 1 SWS/16 h
	Self-Study: 93 h
	Workload: 125 h
6	**Prüfungsform, Prüfungsdauer und Prüfungsvoraussetzung (Assessment Methods)**
	The part of pre-examinations at the final mark in form of homework, practical work and documentation is 50%.
	If the module exam is conducted as a written exam in accordance with § 12, the duration is 90 minutes. The part of written exam at the final mark is 50%.
	Opportunities to repeat the pre-examinations and examinations are provided in the following semester.
	The lecturer announces exemptions in the form of examination according to §10 ABPO in the first week of the lecture period.
7	**Notwendige Kenntnisse (Prerequisite Subjects)**
	Not applicable / entfällt
8	**Empfohlene Kenntnisse (Recommended Subjects)**
	Not applicable / entfällt
9	**Dauer, zeitliche Gliederung und Häufigkeit des Angebots (Duration, time structure and frequency of the offer)**
	1 (V) + 1 (Ü) SWS, Summer Term
10	**Verwendbarkeit des Moduls (Usability of the module)**
	Not applicable / entfällt
11	**Literatur (Literature)**
	Will be announce at the beginning of the lecture period

§ 4 Modulbeschreibungen der Pflichtmodule im 3. bis 7. Semester

1	**Modulname (Module name)**
	Project 3: Discover Space and Time
1.1	**Modulkürzel (Shorthand symbol)**
	ER-P3
1.2	**Art (Kind)**
	Mandatory module
1.3	**Lehrveranstaltung (Lecture)**
	Project 3: Discover Space and Time
1.4	**Semester (Semester)**
	3. Semester
1.5	**Modulverantwortliche(r) (Module responsible)**
	Prof. Dr. Frank Gabler , Prof. Tilmann Kohlhaase
1.6	**Weitere Lehrende (Other teachers)**
	N.N. (associate lecturers)
1.7	**Studiengangsniveau (Degree level)**
	Bachelor
1.8	**Lehrsprache (Teaching language)**
	English
2	**Inhalt (Content)**
	General Description
	"Discover space and time" – this is the leitmotif of this interdisciplinary first project of the study course.
	In this first project students are familiarized with the aesthetic and technological implications related to the creation three-dimensional interactive immersive (virtual) worlds.
	They are encouraged to integrate fundamental concepts of interaction, storytelling, cinematography and gameplay. The students get introduced to the standard project stages of ideation, concept development, planning, preproduction, production and testing, thus gaining first producing skills. They are encouraged to take responsibility for self-directed, group-oriented learning processes and to explore individual and collective methods of problem solving. Furthermore they take different roles and functions in the production process to find and develop their own strength and artistic voice.
	In producing a simple three-dimensional virtual experience, the students are exposed to the dynamics of the various disciplines and roles that contribute to productions in the field of expanded realities. They become

confronted with fist essential practice and will explore their creative potential.

They gain an increasing awareness of the aesthetic specificities of genres, formats and constraints, which will guide them in their creative decision-making.

Indicative Module Content

- Basics of object oriented software development

- Basic principles of computer graphics

- Basics of application testing and quality assurance in software development

- Basics of computer generated graphics: modelling, rigging, texturing/shading, animation, lighting/rendering, asset-creation

- Proper structuring and formatting to support code maintenance and reuse

- Software architectures of game engines, computer games and computer generated 3D environments
- Interface technology and man-machine interaction (MMI)
- Implementations of simple interaction models

- HMD (Head mounted displays) for VR- and AR Applications
- Introduction to stereoscopy in expanded realities
- Controller technology and interaction principles for virtual environments

- Techniques and strategies of idea generation, concept development and concept presentation

- Introduction to design methods (research/design heuristics, iteration, design documentation basics) and analysis of existing expanded realities concepts

- Basic visualization and prototyping

- Introduction to interaction design

- Introduction to user-centered design and usability

- Introduction to storytelling for expanded realities (principles of linear and non-linear storytelling and dramaturgy)

- Introduction to sound design: the role of sound for virtual environments

3	**Ziele (Learning Outcomes)**

1_Knowledge & Understanding:

- Understand and experience key characteristics of team based projects and related communication processes.
- Understand and apply basic methods of project management.

2_Intellectual skills:

- Identify basic concepts and models of culture and communication and apply them to the field of expanded realities production and reception.

- Demonstrate methodical and practical skills in creating, visualizing and evaluating ideas and concepts related to expanded realities.

3_Competences and Practical & Professional skills:

	• Document the project development and the deliverables of the project management. • Apply and document basic principles of research to relevant areas of a project task, such as: project topic, audience/user, existing products, social and cultural environment, functional and technical conditions. • Produce a prototype of simple three-dimensional virtual experience in an appropriate media language and with necessary technical skills.
4	**Lehr- und Lernformen (Teaching Methods)** Main Module: Project based learning (Pro) Media: Use of changing media according to the possibilities given in the lecture hall, seminar room or laboratory room.
5	**Arbeitsaufwand und Credit Points (Workload and Credits)** 15 CP 8 SWS/128 h Self-Study: 247 h Workload: 375 h
6	**Prüfungsform, Prüfungsdauer und Prüfungsvoraussetzung (Assessment Methods)** Examination Prerequisite: The part of pre-examinations in the sub-module **Media Technology** at the final mark in form of homework, written or oral exam or portfolio is 20%. The part of pre-examinations in the sub-module **Media Design** at the final mark in form of homework, written or oral exam or portfolio is 20%. The part of pre-examinations in the sub-module **Methodologies** at the final mark in form of homework, written or oral exam or portfolio is 20%. If the module or sub-module exam is conducted as a written exam in accordance with § 12, the duration is 90 minutes. Final Examination (Project): The part of the final presentation and written documentation of the project at the final mark is 40% Opportunities to repeat the pre-examinations and examinations are provided in the following semester. The lecturer announces exemptions in the form of examination according to §10 ABPO in the first week of the lecture period.
7	**Notwendige Kenntnisse (Prerequisite Subjects)** Not applicable / entfällt

8	**Empfohlene Kenntnisse (Recommended Subjects)**
	Not applicable / entfällt
9	**Dauer, zeitliche Gliederung und Häufigkeit des Angebots (Duration, time structure and frequency of the offer)**
	8 SWS, Winter Term
10	**Verwendbarkeit des Moduls (Usability of the module)**
	Not applicable / entfällt
11	**Literatur (Literature)**
	Will be announce at the beginning of the lecture period

1	**Modulname (Module name)**
	Methodologies 3: Creative Methods and Producing
1.1	**Modulkürzel (Shorthand symbol)**
	ER-M3
1.2	**Art (Kind)**
	Mandatory module
1.3	**Lehrveranstaltung (Lecture)**
	Methodologies 3: Creative Methods and Producing
1.4	**Semester (Semester)**
	3. Semester
1.5	**Modulverantwortliche(r) (Module responsible)**
	Prof. Claudia Söller-Eckert, Prof. Tilmann Kohlhaase, Prof. Dr. Frank Gabler
1.6	**Weitere Lehrende (Other teachers)**
	N.N. (associate lecturers)
1.7	**Studiengangsniveau (Degree level)**
	Bachelor
1.8	**Lehrsprache (Teaching language)**
	English
2	**Inhalt (Content)**
	General Description
	The *Methodologies Strand* complements the student's understanding of contexts and development methods within the field of expanded realities production with a holistic, knowledge-based methical approach. It aims to strengthen the student's organization and communication skills, their critical, quality oriented thinking and their awareness for audiences and users.
	The module *Creative Methods and Producing* provides learners with the knowledge, skills, competencies and methods required to develop concepts and productions in the field of expanded realities. By encouraging a diverse approach to idea generation and prototyping learners expand their development processes and adopt a creative approach to problem solving.
	Indicative Module Content
	Introductions into:
	• Introduction to theories of creativity, convergent thinking and innovation
	• Techniques and strategies of creative idea generation and development

	• Methods and practices of a professional project management in the creative industries and in expanded realities • Roles and workflows in producing media, tools and devices for expanded realities • Risk-Management in development of expanded realities • Introduction to business models for expanded realities • Introduction to media and entertainment law as basis for productions in the field of expanded realities • Intellectual property rights management and information security
3	**Ziele (Learning Outcomes)** After successful completion of the module *Expanded Realities Studies* learners will be able to: **1_Knowledge & Understanding:** • Identify principle theories of creativity and their potential for holistic design, interdisciplinary development and communication strategies. • Understand and develop business models for expanded realities. • Identify and apply media and entertainment laws **2_Intellectual skills:** • Describe and understand a variety of creative and analytical methods of idea generation and development steps. • Describe and understand professional methods of presentation, simulation and prototyping of expanded realities. • Describe and understand concepts, methods and practices of project management in the creative industries and in expanded realities. • Describe and understand typical roles and workflows in expanded realities. **3_Competences and Practical & Professional skills:** • Apply a variety of creative and analytical methods of idea generation and development steps. • Apply professional methods of presentation, simulation and prototyping of expanded realities. • Apply concepts, methods and practices of project management in the creative industries and in expanded realities. • Apply typical roles and workflows in expanded realities.
4	**Lehr- und Lernformen (Teaching Methods)** Seminar (Sem) Media: Use of changing media according to the possibilities given in the lecture hall, seminar room or laboratory room.
5	**Arbeitsaufwand und Credit Points (Workload and Credits)** 5 CP 3 SWS/48 h Self-Study: 77 h Workload: 125 h

6	**Prüfungsform, Prüfungsdauer und Prüfungsvoraussetzung (Assessment Methods)**
	The part of pre-examinations at the final mark in form of homework, practical work and documentation is 40%.
	If the module exam is conducted as a written exam in accordance with § 12, the duration is 90 minutes. The part of written exam at the final mark is 60%.
	Opportunities to repeat the pre-examinations and examinations are provided in the following semester.
	The lecturer announces exemptions in the form of examination according to §10 ABPO in the first week of the lecture period.
7	**Notwendige Kenntnisse (Prerequisite Subjects)**
	Not applicable / entfällt
8	**Empfohlene Kenntnisse (Recommended Subjects)**
	Not applicable / entfällt
9	**Dauer, zeitliche Gliederung und Häufigkeit des Angebots (Duration, time structure and frequency of the offer)**
	3 SWS (Sem), Winter Term
10	**Verwendbarkeit des Moduls (Usability of the module)**
	Not applicable / entfällt
11	**Literatur (Literature)**
	Will be announce at the beginning of the lecture period

Praxismodul

1	**Modulname (Module name)**
	Industrial Placement
1.1	**Modulkürzel (Shorthand symbol)**
	ER-IP
1.2	**Art (Kind)**
	Mandatory module
1.3	**Lehrveranstaltung (Lecture)**
	Internship module
1.4	**Semester (Semester)**
	4. Semester
1.5	**Modulverantwortliche(r) (Module responsible)**
	Prof. Dr. Frank Gabler
1.6	**Weitere Lehrende (Other teachers)**
	N.N. (associate lecturers)
1.7	**Studiengangsniveau (Degree level)**
	Bachelor
1.8	**Lehrsprache (Teaching language)**
	English
2	**Inhalt (Content)**
	General Description
	The industrial placement takes five months. There will be accompanying studies at university before the placement and after the placement. The course before the placement gives information about industrial places and about the organisation of the placement. In the course after the placement the students give a presentation about their projects in the placement and about their experiences. Students have to produce a detailed report about their projects.
	Indicative Module Content
	The students work in the fields of:
	• Concept, planning and / or production and / or postproduction of movie, animation, video, TV and AV projects in the field of Expanded Realities (e.g. VR-Film)
	• Concept, planning and / or production of ER-multimedia projects
	• Concept, planning and / or production of games in field of expanded realities (e.g. VR/AR/MR-game),
	• Concept, planning and / or production of simulations in field of expanded realities
	• Concept, planning and / or production of audio applications (e.g. 360° or 3D audio
	• Concept, planning and / or production of ER-media systems
	• Management and marketing of multimedia products and media systems

3	**Ziele (Learning Outcomes)**
	On successful completion of this subject the student will be able to:
	1_Knowledge & Understanding:
	• Understand and reflect the practical work of a designer, producer, developer in the field of expanded realities
	2_Intellectual skills:
	• Reflect new fields of application and new professional methods
	3_Competences and Practical & Professional skills:
	• Integrate needs of practice in coming projects
	• Integrate methods of practice in coming projects
4	**Lehr- und Lernformen (Teaching Methods)**
	a) Lectures (V)
	b) Tutorials, group discussions and peer reviews, Presentation (Ü)
	c) Industrial placement (IP)
	Media: Use of changing media according to the possibilities given in the lecture hall, seminar room or laboratory room.
5	**Arbeitsaufwand und Credit Points (Workload and Credits)**
	30 CP
	a) 2 SWS/30 h
	b) 2 SWS/30 h
	c) Self-Study: 690 h
	Workload: 750 h
6	**Prüfungsform, Prüfungsdauer und Prüfungsvoraussetzung (Assessment Methods)**
	The examination is based on IP-Report and presentation of IP-Report with a part of 100%
	The lecturer announces exemptions in the form of examination according to §10 ABPO in the first week of the lecture period.
7	**Notwendige Kenntnisse (Prerequisite Subjects)**
	Not applicable / entfällt
8	**Empfohlene Kenntnisse (Recommended Subjects)**
	Not applicable / entfällt

Praxismodul

9	**Dauer, zeitliche Gliederung und Häufigkeit des Angebots (Duration, time structure and frequency of the offer)**
	2 (V) +2 (Ü) SWS + Industrial Placement, Summer Term
10	**Verwendbarkeit des Moduls (Usability of the module)**
	Not applicable / entfällt
11	**Literatur (Literature)**
	Will be announce at the beginning of the lecture period

1	**Modulname (Module name)** Project 5: Expand Realities
1.1	**Modulkürzel (Shorthand symbol)** ER-P5
1.2	**Art (Kind)** Mandatory module
1.3	**Lehrveranstaltung (Lecture)** Project 5: Expand Realities
1.4	**Semester (Semester)** 5. Semester
1.5	**Modulverantwortliche(r) (Module responsible)** Prof. Dr. Frank Gabler , Prof. Tilmann Kohlhaase
1.6	**Weitere Lehrende (Other teachers)** N.N. (associate lecturers)
1.7	**Studiengangsniveau (Degree level)** Bachelor
1.8	**Lehrsprache (Teaching language)** English
2	**Inhalt (Content)** General Description "**Expand Realities**" – this is the leitmotif of this interdisciplinary project of the study course. In this project students are familiarized with the aesthetic and technological implications related to the creation of interactive experiences and/or applications in an expanded environment (e.g. augmented or mixed reality). This project focuses on the development of a working prototype on design and technical level for a defined target group and platform. The students are encouraged to integrate industrial standard production methods and practices. They will acquire and apply advanced skills in problem solving and quality assurance, budgeting and project management in order to conceive and produce a marketable product. Based on scientific methods they establish branding, marketing objectives. They will explore and apply advanced methodical tools of analysis and evaluation with regard to audience/user-centred design. They will be exposed to advanced media technologies like platforms, distribution channels and input devices. By creating a product for a defined platform and user group, the students learn to generate ideas, concepts and solutions in response to identified market, industrial and scientific needs.

	Indicative Module Content
	• Introduction to financing and funding of expanded realities products • Legal aspects of production and distribution • Ideation and creative methods (e.g. Design Thinking) • Creating, documenting and presenting design concepts • Basics of visual branding, intellectual property and visual communication for expanded realities • Immergence, presence and agency in expanded realities • Character design and character animation • Environment and world design, digital scenography • Interaction design for expanded realities, introduction to concepts and methods of user centered design • Storytelling and dramaturgy for linear and non-linear formats in expanded realities • Advanced cinematography for animations and games • Game design (level design, game balancing, game mechanics) • Design methods: iteration, prototyping and pre-visualization, implementation) • Basics of sound design, music and dialogue writing for animations and games • Intermediate game mechanics and game engine based computer graphics, animation, simulation and lighting techniques. • Advanced software architectures and principles in state-of-the-art game engines (also cross platform and mobile applications) • Introduction to artificial intelligence for expanded realities • Intermediate physics programming in game engines • Introduction to user interfaces for expanded realities • Advanced tools and technologies for prototyping and pre-visualisation • Testing and usability analysis • Introduction to frameworks (SDK, API) for expanded realities (e.g. augmented and mixed reality) experiences and applications. • Introduction to technology for expanded /mixed reality applications like (e.g. HMDs, glasses)
3	**Ziele (Learning Outcomes)** On successful completion of this module the student will be able to: **1_Knowledge & Understanding:** • Show a profound understanding of the user as recipient in an expanded realities experience. **2_Intellectual skills:** • Develop a detailed and targeted design concept, which answers a creative brief and envisions a defined user/audience. • Demonstrate standard techniques and methods of an iterative design process. **3_Competences and Practical & Professional skills:** • Demonstrate the use of appropriate research and presentation methods in the development and implementation of a project. • Apply an appropriate range of specialised software and hardware tools in the execution and completion of a project. • Demonstrate the use of state-of-the-art technology for expanded/mixed reality devices for experiences and applications.

		• Apply modern techniques and methods of software development.
4	**Lehr- und Lernformen (Teaching Methods)**	
	Main Module: Project based learning (Pro)	
	Media: Use of changing media according to the possibilities given in the lecture hall, seminar room or laboratory room.	
5	**Arbeitsaufwand und Credit Points (Workload and Credits)**	
	20 CP	
	10 SWS/160 h	
	Self-Study: 340 h	
	Workload: 500 h	
6	**Prüfungsform, Prüfungsdauer und Prüfungsvoraussetzung (Assessment Methods)**	
	Examination Prerequisite:	
	The part of pre-examinations in the sub-module **Media Technology** at the final mark in form of homework, written or oral exam or portfolio is 20%.	
	The part of pre-examinations in the sub-module **Media Design** at the final mark in form of homework, written or oral exam or portfolio is 20%.	
	The part of pre-examinations in the sub-module **Methodologies** at the final mark in form of homework, written or oral exam or portfolio is 20%.	
	If the module or sub-module exam is conducted as a written exam in accordance with § 12, the duration is 90 minutes.	
	Final Examination (Project):	
	The part of the final presentation and written documentation of the project at the final mark is 40%	
	Opportunities to repeat the pre-examinations and examinations are provided in the following semester.	
	The lecturer announces exemptions in the form of examination according to §10 ABPO in the first week of the lecture period.	
7	**Notwendige Kenntnisse (Prerequisite Subjects)**	
	Not applicable / entfällt	
8	**Empfohlene Kenntnisse (Recommended Subjects)**	
	Not applicable / entfällt	
9	**Dauer, zeitliche Gliederung und Häufigkeit des Angebots (Duration, time structure and frequency of the offer)**	
	10 SWS, Winter Term	

Project 5: Expand Realities

10	**Verwendbarkeit des Moduls (Usability of the module)**
	Not applicable / entfällt
11	**Literatur (Literature)**
	Will be announce at the beginning of the lecture period

1	**Modulname (Module name)**
	Project 6: Expand Experience and Expectation
1.1	**Modulkürzel (Shorthand symbol)**
	ER-P6
1.2	**Art (Kind)**
	Mandatory module
1.3	**Lehrveranstaltung (Lecture)**
	Project 6: Expand Experience and Expectation
1.4	**Semester (Semester)**
	6. Semester
1.5	**Modulverantwortliche(r) (Module responsible)**
	Prof. Dr. Frank Gabler , Prof. Tilmann Kohlhaase
1.6	**Weitere Lehrende (Other teachers)**
	N.N. (associate lecturers)
1.7	**Studiengangsniveau (Degree level)**
	Bachelor
1.8	**Lehrsprache (Teaching language)**
	English
2	**Inhalt (Content)**
	General Description
	"**Expand Experience and Expectation**" – this is the leitmotif of this interdisciplinary project of the study course.
	The aim of the Project is to ideate, develop, produce and implement a fully functional highly immersive product in the field of expanded realities, which fathoms out the possibilities of state-of-the-art technology and appropriate design- and interaction concepts. The immersion of the user and principles of interaction in expanded realities applications and/or experiences take the central role. The students will make use of creative methods and strategies (e.g. Design Thinking) to experience the full live circle of development from brief through presentation, iteration/testing and conceptual work to final production. Students are encouraged to explore the potential of cross-format, cross-platform and transmedia concepts in the field of expanded realities.
	A particularly strong focus will be on detailed preproduction according to leading industry standards. The study and critical reflection of advanced subjects in media design and media technology will enable them to transcend common aesthetic standards and established models of user/audience participation.
	The project work will integrate advanced project management aspects, which enable students to develop scenarios for emerging or future technological environments and market conditions where their project might be successfully used or applied. They will be asked to self-reflect their conceptual work at all stages

and to evaluate decisions made in the conceptual process in order to optimize the results. The students learn how to set up modern business start-ups in the field of media.

Indicative Module Content

- Agile management, rapid prototyping
- Business models in the entertainment industry, distribution and marketing of expanded realities products, strategies for online distribution
- Keeping a vision through the development and realisation of a project
- Advanced project management skills including project plan, work breakdown structure, project management software, asset management
- Learning from the avant-garde: current design topics in expanded realities
- Creativity and experiment: examples from art, design and cinematography
- Expanded realities culture (advanced level): concepts, practices and ethical frameworks
- Introduction to Art Direction for expanded realities
- Databases and cloud based data storage for applications and experiences in expanded realities
- Distributed and/or parallel computing and advanced network technologies and topologies
- Advanced application (e.g. game) development principles and practice: writing clear, efficient and highly performing code, structured testing and quality assurance
- Advanced Artificial Intelligence in expanded realities
- Advanced HCI (human computer interaction) in expanded realities
- Creating and documenting advanced design concepts and develop and devise programmes, art bibles and design bibles
- Sound design, music and dialogue for expanded realities

3 Ziele (Learning Outcomes)

On successful completion of this module the student will be able to:

1_Knowledge & Understanding:

- Understand the requirements and structures if to setup and fund a start-up business.
- Gain and demonstrate a broadened understanding of linear and nonlinear design structures and strategies.
- Gain and demonstrate confident use of production tools and design strategies in conceptual and technical development of media productions.
- Understand, discuss and apply emerging interaction technologies in expanded realities (e.g. artificial intelligence).

2_Intellectual skills:

- Gain ability for critical thinking concerning innovation, new formats and technologies.
- Demonstrate creativity, independence and inventiveness in the approach and methods used to develop, direct and implement a project.
- Make informed choices through a critical approach to information gained through appropriate research methods in the development and implementation of ideas for a project.

3_Competences and Practical & Professional skills:

- Manage a self-initiated project from brief through preproduction, iteration/testing to production and presentation.
- Ability to transfer and reflect technical innovation into cultural and/or social innovations.
- Demonstrate a self-reflective and self-critique in creation of a highly immersive application or experience.
- Perform advanced software architecture and programming in the field of expanded realities.

4	**Lehr- und Lernformen (Teaching Methods)**
	Main Module: Project based learning (Pro)
	Media: Use of changing media according to the possibilities given in the lecture hall, seminar room or laboratory room.

5	**Arbeitsaufwand und Credit Points (Workload and Credits)**
	20 CP
	10 SWS/160 h
	Self-Study: 340 h
	Workload: 500 h

6	**Prüfungsform, Prüfungsdauer und Prüfungsvoraussetzung (Assessment Methods)**
	Examination Prerequisite:
	The part of pre-examinations in the sub-module **Media Technology** at the final mark in form of homework, written or oral exam or portfolio is 20%.
	The part of pre-examinations in the sub-module **Media Design** at the final mark in form of homework, written or oral exam or portfolio is 20%.
	The part of pre-examinations in the sub-module **Methodologies** at the final mark in form of homework, written or oral exam or portfolio is 20%.
	If the module or sub-module exam is conducted as a written exam in accordance with § 12, the duration is 90 minutes.
	Final Examination (Project):
	The part of the final presentation and written documentation of the project at the final mark is 40%
	Opportunities to repeat the pre-examinations and examinations are provided in the following semester.
	The lecturer announces exemptions in the form of examination according to §10 ABPO in the first week of the lecture period.

7	**Notwendige Kenntnisse (Prerequisite Subjects)**
	Not applicable / entfällt

8	**Empfohlene Kenntnisse (Recommended Subjects)**
	Not applicable / entfällt

9	**Dauer, zeitliche Gliederung und Häufigkeit des Angebots (Duration, time structure and frequency of the offer)**
	10 SWS, Summer Term

10	**Verwendbarkeit des Moduls (Usability of the module)**
	Not applicable / entfällt

Project 6: Expand Experience and Expectation

11	**Literatur (Literature)**
	Will be announce at the beginning of the lecture period

Project 7: Research-Project

1	**Modulname (Module name)**	Project 7: Research-Project
1.1	**Modulkürzel (Shorthand symbol)**	ER-P7R
1.2	**Art (Kind)**	Mandatory module
1.3	**Lehrveranstaltung (Lecture)**	Project 7: Research-Project
1.4	**Semester (Semester)**	7. Semester
1.5	**Modulverantwortliche(r) (Module responsible)**	All professors of Expanded Realities, N.N. (associate lecturers)
1.6	**Weitere Lehrende (Other teachers)**	N.N. (associate lecturers)
1.7	**Studiengangsniveau (Degree level)**	Bachelor
1.8	**Lehrsprache (Teaching language)**	English
2	**Inhalt (Content)**	

Inhalt (Content)

Indicative Module Content

The student(s) submits a briefing document for a linear and/or interactive to a desired projectcoach. Once this brief has been accepted, the student then writes a planning document, containing:
- A project proposal
- The results of the necessary research, developing the project
- The description of a developed rough concept for the project
- A project plan

Project Schedule:
- Application with briefing document
- Agreement on deliverables according to chosen subject with coach
- Delivery of research- and concept-plan
- Discussion sessions and review of preliminary results (group/peer reviews)
- Final Presentation (assessment)

Project 7: Research-Project

3	**Ziele (Learning Outcomes)**
	On successful completion of this subject the student will be able to:
	1_Knowledge & Understanding:
	• Understand the importance of profound and professional research as ground for advanced project development.
	2_Intellectual skills:
	• Use appropriate methodologies with regard to research for technology or product development.
	• Identify and design for the cultural environment in which a product will be used or experienced.
	• Use appropriate methodologies with regard to market research.
	• Use appropriate research methodologies with regard to expanded realities studies.
	• Use appropriate research methodologies with regard to cultural, historical, ethical or aesthetic aspects of expanded realities.
	• Use appropriate methodologies with regard to product concept and development.
	• Use appropriate methodologies to plan the project organisation and financing of a media-project
	• Use appropriate methodologies to explore the topic for an interactive and/or linear product in the field of expanded realities.
	3_Competences and Practical & Professional skills:
	• Carry out extensive and detailed user/audience research for a product.
4	**Lehr- und Lernformen (Teaching Methods)**
	• Coaching
	• Tutorials, group discussions and peer reviews
	• Presentation and demonstration
	Media: Use of changing media according to the possibilities given in the lecture hall, seminar room or laboratory room.
5	**Arbeitsaufwand und Credit Points (Workload and Credits)**
	15 CP
	4 SWS/64 h
	Self-Study: 311 h
	Workload: 375 h
6	**Prüfungsform, Prüfungsdauer und Prüfungsvoraussetzung (Assessment Methods)**
	The part of pre-examinations at the final mark in form of a research documentation and poster is 75%
	The part of the final presentation at the final mark is 25%
	Opportunities to repeat the pre-examinations and examinations are provided in the following semester.
	The lecturer announces exemptions in the form of examination according to §10 ABPO in the first week of the lecture period.

7	**Notwendige Kenntnisse (Prerequisite Subjects)**
	Successful completion of all modules of semester 1-5, except two elective modules

8	**Empfohlene Kenntnisse (Recommended Subjects)**
	Not applicable / entfällt

9	**Dauer, zeitliche Gliederung und Häufigkeit des Angebots (Duration, time structure and frequency of the offer)**
	4 SWS, Winter Term

10	**Verwendbarkeit des Moduls (Usability of the module)**
	Not applicable / entfällt

11	**Literatur (Literature)**
	Will be announce at the beginning of the lecture period

Bachelor Module incl. Colloquium

1	**Modulname (Module name)** Bachelor Module incl. Colloquium
1.1	**Modulkürzel (Shorthand symbol)** ER-P7B
1.2	**Art (Kind)** Mandatory module
1.3	**Lehrveranstaltung (Lecture)** Bachelor Module incl. Colloquium
1.4	**Semester (Semester)** 7. Semester
1.5	**Modulverantwortliche(r) (Module responsible)** All professors of Expanded Realities
1.6	**Weitere Lehrende (Other teachers)** N.N. (associate lecturers)
1.7	**Studiengangsniveau (Degree level)** Bachelor
1.8	**Lehrsprache (Teaching language)** English
2	**Inhalt (Content)** **Indicative Module Content** Students may develop and realise a media system or media product, such as an expanded realities application, expanded realities experience or a digital media installation. The work should demonstrate a deep understanding of how to apply a range of methods and tools in arriving at a professional solution. Students may explore a concept from a cultural or market perspective that they wish to develop as a proposal to industry. Students developing ideas should cater for the cultural, technical, aesthetic and business aspects of a particular idea and explore all these aspects through sound research methods. Students should be able to create and present a prototype that has a sound technological basis as well as a clear focus with regard to the needs of a target group. Such projects should demonstrate an awareness of the market in which the proposed project will operate or be displayed. Prototypes may be aimed at business, cultural, academic or community based environments. Projects can be the product of individual or team effort and in the case of teamwork the project proposed should outline clearly the areas of responsibility for each member of the team. Project Schedule: • Discussion sessions and review of preliminary ideas

	• Student presentation of ideas (seminars; individual and group reviews) • Rapid Prototyping (group/peer reviews) • Prototype Presentation (group/peer reviews) • Final Presentation (assessment)
3	**Ziele (Learning Outcomes)** On successful completion of this subject the student will be able to **1_Knowledge & Understanding:** • Show a profound understanding of all aspects concerning content, users, design, cultural context and technology in expanded realities environments and experiences. **2_Intellectual skills:** • Discuss the design, cultural, technical and economic issues related to the project • Show appropriate use of project management skills and tools in application of project resources and in meeting project milestones on time and to specifications **3_Competences and Practical & Professional skills:** • Demonstrate judgement in the application of appropriate research and design methods in arriving at final solution(s) for the proposed project • Demonstrate specialised technical, creative or conceptual skills and tools in the development, completion and presentation of the project outcomes • Show critical personal reflection and accountability in relation to learning from successful and unsuccessful project outcomes
4	**Lehr- und Lernformen (Teaching Methods)** • Coaching • Tutorials, group discussions and peer reviews • Presentation and demonstration Media: Use of changing media according to the possibilities given in the lecture hall, seminar room or laboratory room.
5	**Arbeitsaufwand und Credit Points (Workload and Credits)** 15 CP 4 SWS/64 h Self-Study: 311 h Workload: 375 h
6	**Prüfungsform, Prüfungsdauer und Prüfungsvoraussetzung (Assessment Methods)** The part of the Bachelor Project at the final mark is 75% The part of the Colloquium at the final mark is 25%

7	**Notwendige Kenntnisse (Prerequisite Subjects)**
	Successful completion of all modules of semester 1-5 (including IP), except two elective modules
8	**Empfohlene Kenntnisse (Recommended Subjects)**
	Not applicable / entfällt
9	**Dauer, zeitliche Gliederung und Häufigkeit des Angebots (Duration, time structure and frequency of the offer)**
	4 SWS, Winter Term
10	**Verwendbarkeit des Moduls (Usability of the module)**
	Not applicable / entfällt
11	**Literatur (Literature)**
	Will be announce at the beginning of the lecture period

§ 5 Modulbeschreibung der Electives im 3. und 5. Semester

1	**Modulname (Module name)**	
	Elective in Expanded Realities	
1.1	**Modulkürzel (Shorthand symbol)**	
	ER-E	
1.2	**Art (Kind)**	
	Elective module	
1.3	**Lehrveranstaltung (Lecture)**	
	Elective in Expanded Realities	
1.4	**Semester (Semester)**	
	3., 5. Semester	
1.5	**Modulverantwortliche(r) (Module responsible)**	
	Prof. Dr. Frank Gabler	
1.6	**Weitere Lehrende (Other teachers)**	
	N.N. (associate lecturers)	
1.7	**Studiengangsniveau (Degree level)**	
	Bachelor	
1.8	**Lehrsprache (Teaching language)**	
	English	
2	**Inhalt (Content)**	
	General Description	
	The learners broaden their knowledge and competencies in specialised media fields related to Expanded Realities. They work in genre-spanning teams and contexts and/or gain and deepen knowledge from other media foci.	
	Topics would commonly address relevant fields to expanded realities such as Design in ER (TV/film, animation, games, sound, interfaces, storytelling, virtual worlds, et.al.), Technology in ER (VR/AR/MR systems, media systems, mobile systems, interfaces, networks, programming, et.al.) and Media Studies.	
	They may incorporate mind-sets and methods from different disciplines: design, cinema, TV, game, digital technology, computer science, media culture, psychology, social studies, marketing and management.	
	Indicative Module Content	

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The electives may be chosen from the following fields or topics:

- Technology and Computer Science
- Design for Expanded Realities
- Methodologies for Expanded Realities
- Research and Development
- Animation & Game
- Interactive Media Design
- Motion Pictures
- Sound and Music Production
- Media Law for Expanded Realities*

*The catalogue offers this module from the socio-scientific programme of the University of Applied Sciences Darmstadt (SuK).

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3	**Ziele (Learning Outcomes)**

On successful completion of these modules the student shall be able to:

1_Knowledge & Understanding:

- Deepen the knowledge and understanding in the field of the offered elective.

2_Intellectual skills:

- Develop and describe media concepts in a broad cultural and social horizon as well as in adaption to the eventually addressed media genre.
- Develop and include strategies of connected medial fields such as storytelling, cinematography, play, sound and interaction to expanded reality productions.

3_Competences and Practical & Professional skills:

- Use design abilities to achieve a professional media product.
- Use technical abilities and skills to achieve a professional media product.
- Evaluate and assess the product from the success and functionality of the design, the technical, but also from a cultural perspective.
- Integrate different media and different techniques to a complex product.

4	**Lehr- und Lernformen (Teaching Methods)**

- Lecture (V),
- Seminar, practical (Ü)(L),
- Presentation and demonstration

Media: Use of changing media according to the possibilities given in the lecture hall, seminar room or laboratory room.

5	**Arbeitsaufwand und Credit Points (Workload and Credits)**

5 CP

3 SWS/48 h

	Self-Study: 77 h Workload: 125 h	
6	**Prüfungsform, Prüfungsdauer und Prüfungsvoraussetzung (Assessment Methods)** The grade consists of a final presentation and documentation with a part of 100%	
7	**Notwendige Kenntnisse (Prerequisite Subjects)** Not applicable / entfällt	
8	**Empfohlene Kenntnisse (Recommended Subjects)** Not applicable / entfällt	
9	**Dauer, zeitliche Gliederung und Häufigkeit des Angebots (Duration, time structure and frequency of the offer)** 3 SWS, Winter Term	
10	**Verwendbarkeit des Moduls (Usability of the module)** Not applicable / entfällt	
11	**Literatur (Literature)** Will be announce at the beginning of the lecture period	

1	**Modulname (Module name)**
	Elective Social and Cultural Sciences
1.1	**Modulkürzel (Shorthand symbol)**
	ER-X
1.2	**Art (Kind)**
	Elective module
1.3	**Lehrveranstaltung (Lecture)**
	Elective Social and Cultural Sciences
1.4	**Semester (Semester)**
	3., 5. Semester
1.5	**Modulverantwortliche(r) (Module responsible)**
	FB SuK / GW
	This module belongs to the catalogue from the socio-scientific programme of the University of Applied Sciences Darmstadt (SuK).
1.6	**Weitere Lehrende (Other teachers)**
	N.N. (associate lecturers)
1.7	**Studiengangsniveau (Degree level)**
	Bachelor
1.8	**Lehrsprache (Teaching language)**
	English
2	**Inhalt (Content)**
	General Description
	This module introduces students to the socio-scientific or legal frameworks or issues in regards to expanded realities. The learners broaden their knowledge and competencies in different fields related to the production and scientific research of expanded realities.
	Indicative Module Content
	• Law, Ethic, Scientific Methods, Philosophy, Psychology related to Expanded Realities

3	**Ziele (Learning Outcomes)**
	On successful completion of these modules the student shall be able to:
	1_Knowledge & Understanding:
	• Name and describe core concepts of social and cultural Sciences.
	• Display an understanding of the role of social and cultural issues in the context of the development, production and distribution of expanded realities.
	2_Intellectual skills:
	• Develop and describe media concepts in a broad cultural and social horizon as well as in adaption to the eventually addressed media genre.
	3_Competences and Practical & Professional skills:
	• Articulate a basic understanding of historic, cultural, aesthetic, ethical, legal and economic dimensions of expanded realities applications, experiences or productions
	• Show communication skills though written and oral forms.
	• Demonstrate awareness and skills for intercultural communication and collaboration.
4	**Lehr- und Lernformen (Teaching Methods)**
	• Lecture,
	• Seminar
	Media: Use of changing media according to the possibilities given in the lecture hall, seminar room or laboratory room.
5	**Arbeitsaufwand und Credit Points (Workload and Credits)**
	5 CP
	3 SWS/48 h
	Self-Study: 77 h
	Workload: 125 h
6	**Prüfungsform, Prüfungsdauer und Prüfungsvoraussetzung (Assessment Methods)**
	The grade consists of a final presentation and documentation with a part of 100%.
	Opportunities to repeat the pre-examinations and examinations are provided in the following semester.
	The lecturer announces exemptions in the form of examination according to §10 ABPO in the first week of the lecture period.
7	**Notwendige Kenntnisse (Prerequisite Subjects)**
	Not applicable / entfällt

8	**Empfohlene Kenntnisse (Recommended Subjects)**
	Not applicable / entfällt
9	**Dauer, zeitliche Gliederung und Häufigkeit des Angebots (Duration, time structure and frequency of the offer)**
	3 SWS, Winter Term
10	**Verwendbarkeit des Moduls (Usability of the module)**
	Not applicable / entfällt
11	**Literatur (Literature)**
	Will be announce at the beginning of the lecture period

§ 6 Modulbeschreibung der Electives im 6. Semester

1	**Modulname (Module name)** Advanced Elective in Expanded Realities
1.1	**Modulkürzel (Shorthand symbol)** ER-AX
1.2	**Art (Kind)** Elective module
1.3	**Lehrveranstaltung (Lecture)** Advanced Elective in Expanded Realities
1.4	**Semester (Semester)** 6. Semester
1.5	**Modulverantwortliche(r) (Module responsible)** Prof. Dr. Frank Gabler
1.6	**Weitere Lehrende (Other teachers)** N.N. (associate lecturers)
1.7	**Studiengangsniveau (Degree level)** Bachelor
1.8	**Lehrsprache (Teaching language)** English
2	**Inhalt (Content)** **General Description** The learners deepen their knowledge and competencies in specialised media fields or advanced topics related to Expanded Realities. They work in genre-spanning teams and contexts and/or gain and deepen knowledge from other media fields or research fields. Topics would commonly address advanced sections to expanded realities such as Design in ER (expanded TV/film, expanded games, interfaces in ER, storytelling in expanded realities, et.al.), Technology in ER (advanced VR/AR/MR systems, expanded media systems, other future platforms, et.al.) Media Studies and Research & Development. They may incorporate mind-sets and strategies from different disciplines: Storytelling, gamification, interaction, media in space, mobile media, social media, and others will stimulate the learners to investigate and explore ideas, concepts and strategies in new and challenging ways.

	Indicative Module Content
	The electives may be chosen from the following fields or topics:
	• Design for Expanded Realities
	• Technology and Computer Science
	• Methodologies for Expanded Realities
	• Research and Development
3	**Ziele (Learning Outcomes)**
	On successful completion of these modules the student shall be able to:
	1_Knowledge & Understanding:
	• Deepen the knowledge and understanding in the field of the offered elective.
	2_Intellectual skills:
	• Develop and describe advanced media concepts in a broad cultural and social horizon with regard to expanded realities.
	• Develop and include advanced strategies of connected medial fields and adapt them to expanded reality productions.
	• Develop and describe concepts, strategies and a unique media-language for expanded realities.
	• Analyse research topics and develop future concepts and solutions.
	3_Competences and Practical & Professional skills:
	• Use all necessary design abilities to achieve and evaluate a high-quality media product.
	• Use all necessary informatics and technical abilities and skills to develop a high-quality media system.
4	**Lehr- und Lernformen (Teaching Methods)**
	• Lecture,
	• Seminar
	• Practical
	• Project and presentation
	Media: Use of changing media according to the possibilities given in the lecture hall, seminar room or laboratory room.
5	**Arbeitsaufwand und Credit Points (Workload and Credits)**
	5 CP
	4 SWS/64 h
	Self-Study: 61 h
	Workload: 125 h
6	**Prüfungsform, Prüfungsdauer und Prüfungsvoraussetzung (Assessment Methods)**
	The grade consists of a final presentation and documentation with a part of 100%

7	**Notwendige Kenntnisse (Prerequisite Subjects)**
	Not applicable / entfällt
8	**Empfohlene Kenntnisse (Recommended Subjects)**
	Not applicable / entfällt
9	**Dauer, zeitliche Gliederung und Häufigkeit des Angebots (Duration, time structure and frequency of the offer)**
	4 SWS, Summer Term
10	**Verwendbarkeit des Moduls (Usability of the module)**
	Not applicable / entfällt
11	**Literatur (Literature)**
	Will be announce at the beginning of the lecture period