

Anlage 5

Modulhandbuch des Studiengangs

Animation & Game

Bachelor of Arts

des Fachbereichs Media

der Hochschule Darmstadt – University of Applied Sciences

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PRELIMINARY NOTE: PROBLEM BASED LEARNING

Preconditions

Facing the rise of complexity

Animation and Game-Projects are multidisciplinary in two different ways: They are on first hand a combination creative Animation and Game Design, Media Producingt, Game Development and Technical Art (the "classical" disciplines) and on the other hand more and more often a combination of the diverse but meanwhile highly specific media genres including linear and/or interactive modalities like animation, game, interactive products, installations, video, sound.... 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

Problem-based learning (PBL) is a student-centred pedagogical strategy, applied to the study course Animation & Game, 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 A&G Programme

This form of teaching should embrace the disciplines Animation and Game Design, Game Development, Technical Art and Direction and Media-Producing 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: Concept, Research and Development Production and Implementation Publishing, Evaluation and Documentation.

Way of teaching

From a constructivist perspective in a problem-based learning strategy, the role of the instructor is to guide the learning process rather than provide knowledge (Hmelo-Silver, C. E. & Barrows, H. S. (2006). "Goals and strategies of a problem-based learning facilitator. ", *Interdisciplinary Journal of Problem-based Learning*, 1. 21-39.). 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

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

- 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

(Following Phil Race's presentation, University of Aalborg, March 2009)

- 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

SEMESTER 1

Game Development 1

Game-Dev 1 Basics of Game Development					
ID	Workload	Credits	Semester	Module Frequency	Duration
	125 h	5 ECTS	1st Semester	Winter Term	1 Semester
1	Type of Course a) Theory: Lecture b) Practical: Practical		Contact Hours a) 2 SWS / 32h b) 2 SWS / 32h	Self-Study 61 h	Size of Groups a) 45 b) 15
2	<p>General Description</p> <p>Today the development of computer games is more complex than it ever was. Due to the ongoing pursuit of realism and immersion, team sizes, budgets and schedules have significantly increased over the past years. At the same time the rise of mobile devices, independent games, and crowdfunding opens up new market opportunities, technologically fuelled by increasingly powerful software game engines available to the masses.</p> <p>Being inherently interdisciplinary, Game Development is derived from fields such as mathematics, computer science, programming, and artificial intelligence. This course is therefore designed as a first part introduction to the field, aimed at aspiring game developers as well as anyone involved in the game development process in general. It covers several fundamental and established subjects and techniques at the core of many of today's game projects, which any serious game developer needs to understand and apply, in order to enter and succeed in game studios.</p> <p>Learning Outcomes</p> <p>Upon successful completion of this module, students will be able to:</p> <ul style="list-style-type: none"> • describe the role of computing in the field of animation and games • analyze and apply basic methods and concepts of computer software development • describe and apply basic software architectures, data structures, algorithms, and mechanics in the field of computer game development • understand and demonstrate knowledge of the computer graphics and 3D render pipeline, including data structures for geometry representation, textures, light sources, and special requirements for indoor and outdoor rendering • apply basic mathematical concepts, techniques, and geometrical algorithms for the implementation of computer games • demonstrate knowledge in 2D and 3D interaction paradigms in computer games, and implement them in own productions • demonstrate knowledge of state-of-the-art and emerging interaction technologies used in computer games and how to utilize them in own productions • combine the basic game development skills (programming, math, mechanics, interaction, rendering) to implement a simple computer game from start to finish 				
3	<p>Indicative Module Content</p> <p>The course aims at covering the following topics:</p> <ul style="list-style-type: none"> • Game Development: Overview and chronology 				

	<ul style="list-style-type: none"> • Fundamental concepts and methods of computer programming • Software architectures of computer games and game engines • Data structures and algorithms in games • User input and interaction in 2D and 3D games • Fundamentals of Computer Graphics • 3D render pipeline • Math and geometry for game development • Usability patterns and game mechanics • Practical implementation of a simple game
3	Prerequisite Subjects <ul style="list-style-type: none"> • Interest in the field of software development for computer games • Basic mathematical (school) background in linear algebra and calculus
4	Assessment Methods Examination Prerequisite: Homework, practical work and demonstration (50% of final grade) Examination: Oral or written exam (50% of final grade)
5	Prerequisites for CP Enter your text regarding Prerequisites for CP here....
6	Used in other courses
7	Significance of Mark for Final Mark According to CP: 2,42%
8	Name of Module-Responsible and Teaching Professors Prof. Tilmann Kohlhaase, Martin Leissler
9	Other Information -

Technical Art 1

Tech Art 1 Basics of Technical Art for Animations and Games					
ID	Workload 125 h	Credits 5CP	Semester 1st Semester	Module Frequency Winter Term	Duration 1 Semester
1	Type of Course a) Lecture b) Practical		Contact Hours a) 2 SWS/ 32 h b) 2 SWS/ 32 h	Self-Study 61 h	Size of Groups a) 45 b) 15
2	<p>Learning Outcomes</p> <p>The module Tech Art I teaches basic abilities in all technical pipeline steps of an animation movie and animation-asset creation for games, such as modeling, texturing, shading, rigging, lighting and data-handling. Students shall be able to list, describe and work with different nodes of all those working fields. They will be able to operate basic tools of an animation software, organize data in project structures and transfer animation asset data to games engines.</p> <p>On successful completion of this module the student will be able to:</p> <ul style="list-style-type: none"> • describe and evaluate animation-project data-structures • differentiate between transformation and deformation • list and describe different modeling-tools • demonstrate understanding of the correlation between 2D and 3D space and the combination of both (texturing 3D geometry) • evaluate unwrapped uv-layouts of 3D geometry • list and describe different deformer-types • list and describe different digital material-types • list and describe different digital light-types • analyze lighting of photographs • apply digital light-setups • apply data-transfer between different software • solve basic error-handling and troubleshooting • face and overcome uncertainty towards technical challenges 				
3	<p>Indicative Module Content</p> <p><u>Theory:</u></p> <ul style="list-style-type: none"> • animation-movie pipeline • organizing data in project structures • different types of 3D geometry • different types of deformers • different types of materials • different types of lights • geometry topology <p><u>Practical:</u></p> <ul style="list-style-type: none"> • Modeling by transformation • Modeling by deformation 				

	<ul style="list-style-type: none"> • Unfolding geometry for uv-layouts • Creating different materials for the geometry • Creating textures for the geometry • Making geometry deformable (rigging) • Create a basic light-setup • Create assets for games engines • Transfer data from animation software to games engines
4	Prerequisite Subjects
5	Assessment Methods Examination Prerequisite: Homework, practical work and demonstration and/or oral or written exam
6	Prerequisites for CP
7	Used in other courses
8	Significance of Mark for Final Mark According to CP: 2,42%
9	Name of Module-Responsible and Teaching Professors Module-responsible: Carla Heinzl Teachers: Carla Heinzl, N. N.
10	Other Information

Animation & Game Design 1

A&G Des 1 Basic Principles of Design for Animations and Games					
ID	Workload	Credits	Semester	Module Frequency	Duration
	250 h	10	1st Semester	Winterterm	1 Semester
1	Type of Course a) Lecture b) Practical		Contact Hours a) 2 SWS / 32h b) 6 SWS / 96h	Self-Study 122 h	Size of Groups a) 45 b) 15
2	<p>Learning Outcomes</p> <p>The Animation & Game Design Module 1 provides a broad foundation for conceptual and visual design processes in the field of animations and games. The learner is introduced to basic notions, methods and practices involved in the generation and development of concepts for digital and cross media information and entertainment products. After successful completion students shall demonstrate the following skills:</p> <p>1_Knowledge & Understanding</p> <ul style="list-style-type: none"> • identify and describe basic aesthetic, structural and dramaturgical elements of ludic and narrative scenarios • demonstrate knowledge of basic principles and methods of concept development for animations and games <p>2_Intellectual skills</p> <ul style="list-style-type: none"> • analyse and describe animations and games in terms of their use of screen space, time, motion, sound and interaction • analyse and evaluate existing animation and design concepts from an aesthetic point of view • demonstrate an awareness of genre languages and conventions typically applied to animations and games <p>3_Practical & Professional skills</p> <ul style="list-style-type: none"> • identify and apply basic methods of generating, developing and visualizing ideas in the context of animation and game production • develop and document basic visual research for animation & game scenarios • create and document simple design concepts for typical components of animation and game scenarios <p>4_Transferable skills</p> <ul style="list-style-type: none"> • communicate with team members about design problems and creative decisions • demonstrate a structured approach in self-directed and team-based work processes • appreciate critical judgement from others • approach uncertainty and change as part of the creative process through iterative, heuristic work processes 				
3	<p>Indicative Module Content</p> <ul style="list-style-type: none"> • observational drawing • basic conceptual visualization and prototyping for animation & games • principles of animation • principles of visual composition • introduction to color design and and color concepts • basic principles of cinematography and visual storytelling in animations & games 				

	<ul style="list-style-type: none"> • basic elements and principles of game play design • introduction to basic design methods (idea generation, research, concept development) • introduction to analysis and critique of existing animation and gameplay concepts (shot analysis, gameplay analysis)
3	Prerequisite Subjects
4	Assessment Methods Examination Prerequisite: Homework, practical work and demonstration (70%), Examination: Final presentation and written documentation (30%)
5	Prerequisites for CP
6	Used in other courses
7	Significance of Mark for Final Mark According to CP: 4,84%
8	Name of Module-Responsible and Teaching Professors Module-Responsible: Prof. Katharina Kafka Teaching Professors: Prof. Katharina Kafka Prof. Tilmann Kohlhaase Prof. Will Weber N.N.
9	Other Information

Animation & Game Methodology 1

A&G Meth 1					
ID	Workload	Credits	Semester	Module Frequency	Duration
	250 SWS	10	1st Semester	Winter Term	1 Semester
1	Type of Course a) Submodule Animation & Game Studies 1 b) Submodule Animation & Game Producing and Production Management 1 c) Submodule Legal and Ethical Issues in Animations & Games 1		Contact Hours a) 2 SWS Lecture (32h) b) 1 SWS Lecture (16h) c) 1 SWS Lecture (16h)	Self-Study 186	Size of Groups a) 45 b) 45 c) 45
2	General Description: The Animation & Game Methodology Strand provides the students with elementary interdisciplinary knowledge and skills to reflect animations and games with regard to their contexts of production and reception. It is composed of various sub-modules which introduce the learners with the economic, historic, cultural, aesthetic and ethical dimensions of digital media. The methodology strand complements the student's path towards a disciplinary specialization within the practical field of animation and game production with holistic, knowledge-based methodic approach. It aims to strengthen the student's organization and communication skills, their critical, quality oriented thinking and their awareness for audiences and users. Learning outcomes: After successful completion of the module "Animation & Game Methodology 1" learners will be able to: <ul style="list-style-type: none"> • to identify and apply basic theoretical concepts and methods related to the study of games and animated films • articulate a first awareness of historic, cultural, aesthetic, ethical and economic contexts of production and reception of animation and game production • demonstrate first research, documentation and presentation skills • to communicate and work in a structured manner both individually and in small teams 				
3	Indicative Module Content The sub-modules of „Animation & Game Methodology 1“ consists of the following three sub-modules: <ul style="list-style-type: none"> • Animation & Game Studies 1 • Animation & Game Producing and Production Management 1 • Legal and Ethical Issues in Animations & Games 1 Diversity and Interculturalism 				
3	Prerequisite Subjects				
4	Assessment Methods Examination in all three sub-modules. Prerequisite is the successful participation in all sub-modules. Examination Prerequisite: Homework, practical work (40%), Examination: Presentation (60%)				
5	Prerequisites for CP				

6	Used in other courses
7	Significance of Mark for Final Mark According to CP: 4,84%
8	Name of Module-Responsible and Teaching Professors Module-Responsible: Prof. Katharina Kafka Teaching Professors: all Animation & Game Lecturers
9	Other Information

Animation & Game Methodology 1

Sub-Module Animation & Game Studies 1

A&G Meth 1 Sub-Module A&G Studies 1					
ID	Workload	Credits	Semester	Module Frequency	Duration
	125	Sub-Module	1st Semester	Winter Term	1
1	Type of Course Lecture		Contact Hours 2 SWS (32h)	Self-Study 93 h	Size of Groups 45
2	<p>Learning Outcomes</p> <p>The Module "Animation & Game Studies 1" introduces the students with basic methodical knowledge and skills to analyse and critique animation and game productions with regard to characteristics of format, genre and audiovisual language. It provides a first overview over scientific concepts and strategies to identify and describe the historic, cultural, ethical and social dimensions of animation and game production. After successful completion students will be able to:</p> <ul style="list-style-type: none"> • demonstrate basic knowledge of the historical and technological development of animations and games • identify and describe fundamental characteristics of formats and genres and in the field of animations and games • demonstrate an understanding of elementary terms, concepts, and perspectives within the field of animation & game studies • appreciate the relevance of art history and visual culture for animation and game studies • appreciate the role of users and audiences • articulate a basic understanding of aesthetic, cultural, social and ethical and dimensions of animations and games • show communication skills though written and oral forms • apply standard information and methods accurately and carefully to a well defined problem 				
3	<p>Indicative Module Content</p> <ul style="list-style-type: none"> • Introduction to the history of animation and animation technology • Introduction to the history of video and computer games and gaming technology • Introduction to the field of game studies • Basics of animation cinematography and animation theory • The role of sound in game and animation • Introduction to art history and history of visual culture • Overview over basic concepts of semiotics and iconography • Introduction to elementary terms and models of media theory, media effects theory and media ethics 				
3	Prerequisite Subjects				
4	Assessment Methods				
5	Prerequisites for CP				
6	Used in other courses				

7	Significance of Mark for Final Mark
8	Name of Module-Responsible and Teaching Professors Module responsible: Prof. Katharina Kafka Teaching Professors: Prof. Katharina Kafka, Prof. Tilmann Kohlhaase, Prof. Wilhelm Weber, N.N.
9	Other Information

Animation & Game Methodology 1

Sub-Module Producing and Production Management 1

A&G Meth 1 Sub-Module Prod MM 1					
ID	Workload	Credits	Semester	Module Frequency	Duration
	63h	Sub-Module	1rst Semester	Winter Term	1 Semester
1	Type of Course Lecture		Contact Hours 1 SWS (16h)	Self-Study 47h	Size of Groups 45
2	<p>Learning Outcomes This sub-module provides a foundation for communication and cooperation in animation and game project teams. The students are introduced to theories, methods and practices typically involved in the development, production and distribution of animations and games. After successful completion learners will be able to:</p> <ul style="list-style-type: none"> • display an understanding of fundamental concepts and practices of project management in the creative industries • identify and describe typical roles and workflows in the animation & game industry • demonstrate first research and documentation skills and construct a coherent presentation • communicate and work effectively with given time constraints both individually and in groups 				
3	<p>Indicative Module Content</p> <ul style="list-style-type: none"> • Introduction to fundamental concepts and strategies of project management • Overview of roles and responsibilities as well as teamwork principles in animation and game production teams • Introduction to methods and tools of project documentation in the animation and game industries • Pitching ideas: communication and presentation methods 				
3	Prerequisite Subjects				
4	Assessment Methods				
5	Prerequisites for CP				
6	Used in other courses				
7	Significance of Mark for Final Mark				
8	<p>Name of Module-Responsible and Teaching Professors Module Responsible: Prof. Katharina Kafka Teaching Professors: N.N.</p>				
9	Other Information				

Animation & Game Methodology 1

Sub-Module Legal and Ethical Issues 1

A&G Meth 1 Sub-Module Leg & Eth 1: "Diversity and Interculturalism in Animations & Games"					
ID	Workload	Credits	Semester	Module Frequency	Duration
	62h	Sub-Module	1st Semester	Winter Term	1 Semester
1	Type of Course Lecture		Contact Hours 1 SWS (16h)	Self-Study 46 h	Size of Groups 45
2	<p>Learning Outcomes</p> <p>The Sub-Module "Legal and Ethical Issues in Animations & Games 1: Diversity and Interculturalism in Animations & Games" introduces the students to the major challenges of communication in economically globalized and socially diversified media spheres. It provides the students with critically informed knowledge about issues of gender and diversity representation with regard to animations and games. After successful completion learners will be able to:</p> <ul style="list-style-type: none"> • identify and describe issues of gender and diversity representation in the media • critically analyze animations and games with regard to imbalanced or stereotyped representation of age, gender, ethnicity, culture, religious beliefs and practices, social and economic status, educational and occupational backgrounds, disability or sexual orientation • display an understanding for the genesis and structure of cultural diversity • discuss the origins and causes of gender and diversity issues and their ethical, social, humanitarian and economic implications • demonstrate knowledge with regard to scientific concepts and theories of identity and diversity and their construction and representation in the media • identify and apply creative strategies to foster diversity and interculturalism in animated and cross-media narrative and ludic scenarios • demonstrate awareness and skills for effective intercultural communication and collaboration 				
3	<p>Indicative Module Content</p> <ul style="list-style-type: none"> • historic examples of gender and diversity representation in the arts and in popular culture • introduction to fundamental concepts and theories of gender, identity and diversity (feminism, queer theory, equality approach/difference approach/(de)constructivism) • scientific methods of research and documentation with regard to media representation of diversity and interculturalism (quantitative and qualitative media analysis, gender-specific reception research, audience research, encoding/decoding model) • specification and exemplification of gender and diversity issues towards their occurrence, influence and relevance in the animation and games industry, analysis of different target audiences and their needs • contemporary examples of creative and artistic strategies recognizing and valuing diversity 				
3	Prerequisite Subjects				
4	Assessment Methods				
5	Prerequisites for CP				

6	Used in other courses
7	Significance of Mark for Final Mark
8	Name of Module-Responsible and Teaching Professors Module-Responsible: Prof. Katharina Kafka Teaching Professors: N.N.
9	Other Information

SEMESTER 2

Game Development 2

Game-Dev 2					
I	Workload	Credits	Semester	Module Frequency	Duration
D	125 h	5	2nd Semester	Summer Term	1 Semester
1	Type of Course Practical		Contact Hours 2 SWS / 32h	Self-Study 93h	Size of Groups 15
2	<p>General Description</p> <p>The increasing complexity and growing technological diversity in today's computer games can only be tackled through a mastery of several areas of game development and the proper skills to apply such knowledge using state-of-the-art game engines. This includes topics such as programming, animation, applied mathematics, artificial intelligence, game engine architectures, or visual effects.</p> <p>Continuing from "Game Development I", this course plunges deeper into key aspects of modern game development. While covering some advanced software programming techniques and processes, it also addresses the basics of several essential use cases present in nearly every modern game, such as physics simulation, character animation, AI, mobile, 2D, and user interfaces.</p> <p>Learning Outcomes</p> <p>Upon successful completion of this module, students will be able to:</p> <ul style="list-style-type: none"> • demonstrate the ability to use object oriented and event driven programming techniques • identify, analyze, and apply software development patterns in games • understand and explain the basics of kinematic physics simulation and apply them to animation in computer games • describe and apply the basic concepts of artificial intelligence in computer games • demonstrate basic knowledge in the game specific areas of 2D gaming, network gaming and mobile gaming • analyze and implement character animation technologies and cinematic camera behavior • understand and discuss advanced real-time rendering techniques and their implementation in modern game engines, such as shaders, particle systems, organic and procedural rendering • identify and explain the specific characteristics and challenges in the production of games for mobile devices • understand the impact of sound parameters and demonstrate the skill to effectively use sound sources in 3D game environments • demonstrate the skill to combine these game development skills (programming, math, mechanics, interaction, rendering, physics, animation) to implement a computer game from start to finish 				
3	<p>Indicative Module Content</p> <p>The course strives to cover the following topics:</p> <ul style="list-style-type: none"> • Collaborative software development environments • Object-oriented and event-based programming • Data structures and algorithms in games II • Game design patterns • Geometric algorithms 				

	<ul style="list-style-type: none"> • Real-Time Character animation • Basic AI in games • Cinematographic camera behavior • Game programming physics • Basics of network and multiplayer games • 2D game development • Mobile games • Game UIs • Indoor and outdoor rendering concepts • Visual realtime effects, particle systems, shaders • Integration of sound sources into 3D environments • State-of-the-art game engines • Practical implementation of a small game
3	Prerequisite Subjects Successful participation in Game Development I course
4	Assessment Methods Examination Prerequisite: Homework, practical work and demonstration (50% of final grade) Examination: Oral or written exam (50% of final grade)
5	Prerequisites for CP Enter your text regarding Prerequisites for CP here....
6	Used in other courses
7	Significance of Mark for Final Mark According to CP: 2,42%
8	Name of Module-Responsible and Teaching Professors Prof. Tilmann Kohlhaase, Martin Leissler
9	Other Information

Technical Art 2

Tech Art 2					
ID	Workload	Credits	Semester	Module Frequency	Duration
	125 h	5CP	2nd Semester	Summer Term	1 Semester
1	Type of Course a) Practical		Contact Hours a) 2 SWS/ 32 h	Self-Study 93 h	Size of Groups a) 15
2	<p>Learning Outcomes</p> <p>The module Tech Art II deepens the knowledge gained in Tech Art I. Especially the topics modeling and rigging will be covered in higher detail. Additionally it provides foundation for rendering for animation movies. The students shall be able to create a polygon topology the way that it is most easy deformable. They will then be able to create a rig of higher complexity by editing the influence of the deformer to the mesh and add some more complex mechanics as inverse kinematics and different ways of node-connection. It also provides theory about the technical foundation of animation software as math, geometry and node-based structures. Students shall be able not only to operate the software but also to understand and describe the technical structure to be prepared to extend the software with their own scripts and plugins.</p> <p>On successful completion of this module the student will be able to:</p> <ul style="list-style-type: none"> • describe the basic technical structure of a node based software • analyze hierarchical structures of nodes • explain the influence of hierarchy towards local space / object matrices • differentiate between node connection by hierarchy and node connection by attribute connection • examine and analyze the history of a node • analyze and develop animation-software based virtual mechanics • differentiate between ik- and fk-mechanics • evaluate geometry-topology in terms of deformability • analyze and troubleshoot polygonal mesh-errors • edit the influence of deformers towards geometry • list and explain different rendering-methods 				
3	<p>Indicative Module Content</p> <p><u>Theory:</u></p> <ul style="list-style-type: none"> • Node-based software-structures • Node-editing and node-connections • Basic math and geometry for understanding transformation Polygon topology • Ik- and fk-mechanics • Deformer-editing • Rendering methods 				

	<p><u>Practical:</u></p> <ul style="list-style-type: none"> • Modeling using a clean and useful topology • Building rigging-mechanics for deformability • Creating and editing hierarchy and attribute-connection • Creating appealing deformation by editing deformer-weighting • Apply materials to the geometry by using shading-trees • Rendering the model
4	Prerequisite Subjects
5	<p>Assessment Methods Examination Prerequisite: Homework, practical work and demonstration and/or Oral or written exam</p>
6	Prerequisites for CP
7	Used in other courses
8	<p>Significance of Mark for Final Mark According to CP: 2,42%</p>
9	<p>Name of Module-Responsible and Teaching Professors Module-responsible: Carla Heinzl Teaching Professors: Carla Heinzl, N.N.</p>
10	Other Information

Animation & Game Design 2

A&G Des 2					
ID	Workload	Credits	Semester 2nd	Module Frequency	Duration
	125h	5	Semester	Summerterm	1 Semester
1	Type of Course Practical		Contact Hours 2 SWS / 32h	Self-Study 93h	Size of Groups 15
2	<p>Learning Outcomes</p> <p>The Animation & Game Design Module AGD_2 aims to deepen the conceptual, methodical and practical foundations for all animation and game related design activities and processes. The learner is encouraged to adopt a critically informed, analytic and creative approach to the iterative resolution of design problems related to digital and cross media information and entertainment products. After successful completion students shall demonstrate the following skills:</p> <p>□</p> <p>01_ Knowledge & Understanding</p> <ul style="list-style-type: none"> • demonstrate critical understanding of fundamental theories, methods and practices involved with creating design concepts for animations and games • identify and describe typical elements and characteristics of ludic and narrative scenarios with regard to genre languages • show an awareness of audiences and users in the development, communication and interpretation of ideas <p>□02_ Intellectual skills</p> <ul style="list-style-type: none"> • interpret and critique design concepts for animations and games with regard to their functional and aesthetic qualities • generate a methodically and strategically informed design process in order to solve typical animation & game related design problems <p>□03_ Practical & Professional Skills</p> <ul style="list-style-type: none"> • develop elementary design concepts based on a creative brief and document them in a comprehensive and structured manner • identify and apply standard methods of iteration and prototyping in the context of animation and game • visualize concepts and conceptual elements of animation and game scenarios on different levels of detail • identify and apply basic design heuristics • generate and document structured conceptual research for animation & game scenarios <p>□04_ Transferable skills</p> <ul style="list-style-type: none"> • apply relevant criteria to articulate, discuss and evaluate creative decisions • present ideas, concepts and visual designs clearly in visual, verbal and written form • demonstrate effective methods in self-directed work • work effectively in creative teams and contribute to joint creative outcomes 				

3	<p>Indicative Module Content</p> <ul style="list-style-type: none"> • basic principles and methods of character development and character design • basic principles and methods of environment and world design • principles of animation/motion studies • basics of interaction design/introduction to user centered design • general methods and strategies of visual storytelling cinematography and dramaturgy for animations and games • narrative design and concept development • basic principles and methods of game level design • storyboarding and concept art • introduction to design systems and design languages in animations and games • issues of composition and style in visual design for animations and games • introduction to animation & game direction • introduction to sound design, music and dialogue writing for animation and games
3	<p>Prerequisite Subjects Enter your text regarding Prerequisite Subjects here....</p>
4	<p>Assessment Methods Examination Prerequisite: Homework, practical work and demonstration (70%), Examination: Final presentation and written documentation (30%)</p>
5	<p>Prerequisites for CP Enter your text regarding Prerequisites for CP here....</p>
6	<p>Used in other courses Enter your text regarding Used in other courses here....</p>
7	<p>Significance of Mark for Final Mark According to CP: 2,42%</p>
8	<p>Name of Module-Responsible and Teaching Professors Module-Responsible: Prof. Katharina Kafka Teaching Professors: Prof. Tilmann Kohlhaase Prof. Wilhelm Weber Prof. Carla Heinzel N.N.</p>
9	<p>Other Information Enter your text regarding Other Information here....</p>

Animation & Game Project 2

A&G P 2					
ID	Workload	Credits	Semester	Module Frequency	Duration
	325	15 ECTS	2	Summerterm	1 Semester
1	Type of Course Problem based learning Workshops, seminars, lectures		Contact Hours 4 SWS / 64h	Self-Study 251	Size of Groups 5
2	<p>Learning Outcomes/Competencies</p> <p>In this first project students are familiarized with the aesthetic and technological implications related to the creation of two-dimensional and three-dimensional ludic or narrative worlds. They are encouraged to integrate fundamental concepts of storytelling, cinematography and gameplay. The students get introduced to the standard project stages of 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 their own strength and artistic voice.</p> <p>In producing a simple game or animation, the students are exposed to the dynamics of the various disciplines and roles that contribute to animation and game production. They experience essential characteristics of both fields of practice and explore the creative potential at the intersections of game and animation. They gain an increasing awareness of the aesthetic specificities of genres and formats, which will guide them in their creative decisionmaking.</p> <p>On successful completion of this module the students shall be able to:</p> <ul style="list-style-type: none"> • Understand and experience key characteristics of team based projects and related communication processes • Understand and apply basic methods of project management • Apply 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 • Demonstrate methodical and practical skills in creating, visualizing and evaluating ideas and concepts related to animations and games • Produce a simple animation or game/game prototype in an appropriate media language and with necessary technical skills • identify basic concepts and models of culture and communication and apply them to the field of animation & game production and reception 				
3	<p>Indicative Module Content</p> <p>☐ Sub-Module Animation & Game Methodology</p> <ul style="list-style-type: none"> • Introduction to marketing and branding in the entertainment industry • Resource planning, time estimation and calculation • Processes, roles and methods of producing, managing teams • Introduction to processes and methods of developing knowledge and fostering innovation • Animation & game studies: genres and genre languages, animation and game history, animation & game theory 				

	<ul style="list-style-type: none"> • Animation & game culture: concepts, practices and ethical frameworks <p>□</p> <p>Sub-Module Game Development</p> <ul style="list-style-type: none"> • Introduction to gameplay mechanics and usability patterns • Basic object oriented game software development • Game engine basics: architectures, features, and applications • Basic principles of computer graphics • Introduction to artificial intelligence in games • Game physics primer • Introduction to tools, methods, and technologies for prototyping and previsualisation • Basics of game testing and usability <p>□Sub-Module Technical Art</p> <ul style="list-style-type: none"> • Basics of computer generated graphics: modeling, rigging, texturing/shading, animation, lighting/rendering, asset-creation • Introduction to pipeline management • Introduction to data-management and –transfer <p>□Sub-Module Animation and Game Design</p> <ul style="list-style-type: none"> • techniques and strategies of idea generation, concept development and concept presentation • introduction to design methods (research/design heuristics, iteration, design documentation basics) • basic visualization and prototyping for animations and games • introduction to interaction design • introduction to storytelling for animation and games (principles of linear and non-linear storytelling and dramaturgy) • analysis and critique of existing animation and gameplay concepts • introduction to sound design: the role of sound for animation & game
3	Prerequisite Subjects
4	<p>Assessment Methods</p> <p>Examination Prerequisite:</p> <p>Prerequisite is the successful participation in all sub-modules:</p> <ul style="list-style-type: none"> • Animation & Game Methodology Producing and Production Management: written, oral exam or portfolio(25%) • Animation and Game Design: homework, written, oral exam or portfolio(25%) • Game Development or Technical Art : written, oral exam or portfolio(25%) <p>Examination: Project: Final Presentation and documentation (25%)</p> <p>Examination: Project: Final Presentation and documentation (25%)</p>
5	Prerequisites for CP
6	Used in other courses

7	Significance of Mark for Final Mark
8	Name of Module-Responsible and Teaching Professors Module Responsible: Prof. Tilmann Kohlhaase Teaching Professors N.N
9	Other Information

Animation & Game Methodology 2

A&G Meth 2					
ID	Workload	Credits	Semester	Module Frequency	Duration
	125 h	5	2nd Semester	Summerterm	1 Semester
1	Type of Course a) Submodule A&G Studies 2 Lecture b) Submodule Prod MM 2 Lecture		Contact Hours a) 1 SWS / 16h b) 1 SWS / 16h	Self-Study 93 h	Size of Groups a) 45 b) 15
2	Learning Outcomes General Description: The Animation & Game Methodology Strand provides the students with elementary interdisciplinary knowledge and skills to reflect animations and games with regard to their contexts of production and reception. It is composed of various sub-modules which introduce the learners with the economic, historic, cultural, aesthetic and ethical dimensions of digital media. The methodology strand complements the student's path towards a disciplinary specialization within the practical field of animation and game production with holistic, knowledge-based methodic approach. It aims to strengthen the student's organization and communication skills, their critical, quality oriented thinking and their awareness for audiences and users. Learning outcomes: After successful completion of the module "Animation & Game Methodology 2" learners will be able to: <ul style="list-style-type: none"> • exhibit a basic understanding of relevant concepts and methods and practices involved with creating and producing animations and games • use basic scholarly terms and methods in the formal, thematic, generic and technical analysis and critique of different kinds of animations and games • carry out basic research under supervision; to document and present research results in a structured manner • communicate and interact in multidisciplinary teams 				
3	Indicative Module Content „Animation & Game Methodology 2“ consists of the following sub-modules: <ul style="list-style-type: none"> • Animation & Game Studies 2 • Producing and Production Management 2 				
3	Prerequisite Subjects Enter your text regarding Prerequisite Subjects here....				
4	Assessment Methods Examination in both sub-modules. Prerequisite is the successful participation in all sub-modules. Examination Prerequisite: Homework, practical work (50), Examination: Presentation or written examen (50%)				

5	Prerequisites for CP
6	Used in other courses
7	Significance of Mark for Final Mark According to CP: 2,42%
8	Name of Module-Responsible and Teaching Professors Module Responsible: Prof. Katharina Kafka Teaching Professors: N.N.
9	Other Information

Animation & Game Methodology 2

Sub-Module Animation & Game Studies 2

A&G Meth 2 Sub-Module A&G Stud 2					
ID	Workload	Credits Sub-Module	Semester 2nd Semester	Module Frequency Summer Term	Duration 1 Semester
1	Type of Course Lecture		Contact Hours 1 SWS / 16h	Self-Study	Size of Groups 45
2	<p>Learning Outcomes</p> <p>The Module “Animation & Game Studies 2” aims to develop relevant methodical knowledge and skills to analyse and critique animation and game productions with regard to characteristics of format, genre and audiovisual language. It provides learners with common scientific concepts and strategies to identify and describe the historic, cultural, ethical and social dimensions of animation and game production. After successful completion students will be able to:</p> <ul style="list-style-type: none"> • demonstrate a critically informed knowledge of the history and modes of production in field of animation and digital games • identify and describe genres, styles and genre languages in the field of animations and games • explain and apply key terms and perspectives of animation & game studies • demonstrate knowledge of elementary concepts and theories related to art history and visual culture and apply them to animation and game productions • analyse and critically evaluate animation and game productions with regard to content, formal stucture and audiovisual language • discuss the aesthetic, cultural, social and ethical and dimensions of animations and games • apply given terms and concepts of media and communication theory to animations and games • Analyse and discuss cultural actifacts based on scholarly and scientific terminology • Access, organize and synthesize interdisciplinary information from a range of different sources 				
3	<p>Indicative Module Content</p> <ul style="list-style-type: none"> • Milestones of animation and animation technology • Milestones of video and computer games and game technology • Key terms, concepts and perspectives in game studies • Introduction to narratology and storytelling for animations and games • Animation cinematography and animation theory • The role of sound in animations and games • Milestones of art history and history of visual culture • Semiotics and iconography in animation and games • Perspectives of media theory, media effects theory and media ethics on animations and games 				
3	Prerequisite Subjects				
4	Assessment Methods				
5	Prerequisites for CP				
6	Used in other courses				

7	Significance of Mark for Final Mark Ent
8	Name of Module-Responsible and Teaching Professors Module responsible: Prof. Tilmann Kohlhaase, Prof. Katharina Kafka Teaching Professors: Prof. Katharina Kafka, Prof. Tilmann Kohlhaase, Prof. Wilhelm Weber, N.N.
9	Other Information

Animation & Game Methodology 2

Sub-Module Producing and Production Management 2

A&G Meth 2 Sub-Module Prod MM 2					
ID	Workload	Credits	Semester 1 Semester	Module Frequency Summer Term	Duration 1 Semester
1	Type of Course a) Complementary Elective Module „Game-Dev for Producers“ b) Complementary Elective Module „Tech Art for Producers“ c) Complementary Elective Module „A&G Des for Producers“		Contact Hours 1 SWS Lecture / 16h	Self-Study	Size of Groups 15
2	Learning Outcomes This module provides a knowledge summary in the core disciplines of animation and game development. As a complementary studies elective module, it allows students to complete their chosen disciplinary specializations towards a holistic understanding of development and production processes in the animation and games industry, thus fostering an animation and game producer's profile of competencies. After successful completion learners will be able to: <ul style="list-style-type: none"> • identify and describe relevant conceptual models and practices in the development process of animation & game projects • demonstrate an understanding of the relationship between technology, form and content in animations and games • exhibit relevant communication skills, protocols and techniques with regard to animation and game design, technical art or game development at an entry level • actively participate in the dynamics of a multidisciplinary production team 				
3	Indicative Module Content <ul style="list-style-type: none"> • Complementary Elective Module "Animation & Game Design for Producers" • Complementary Elective Module "Technical Art for Producers" • Complementary Elective Module "Game Development for Producers" 				
3	Prerequisite Subjects				
4	Assessment Methods				
5	Prerequisites for CP				
6	Used in other courses				
7	Significance of Mark for Final Mark				

8	Name of Module-Responsible and Teaching Professors Module-Responsible: Prof. Tilmann Kohlhaase, Prof. Katharina Kafka Teaching Professors: N.N.
9	Other Information

Animation & Game Methodology 2

Sub-Module Producing and Production Management 2

- Complementary Elective Module „Game Development for Producers“

A&G Meth 2 Prod MM 2 Game Dev for Producers					
ID	Workload	Credits	Semester	Module Frequency	Duration
			2nd Semester	Summer Term	1 Semester
1	Type of Course Lecture		Contact Hours 1 SWS / 16h	Self-Study	Size of Groups 15
2	<p>General Description</p> <p>Acquiring a broad methodological understanding as well as learning some of the basic principles behind game software development processes and practice holds exciting benefits for students with various backgrounds aiming at a producer oriented, artistic, or design oriented career in the field of computer games.</p> <p>Therefore, the course focuses on the conceptual level and teaches the basic game development principles and approaches, software development pipeline and tools, game software architectures, and game engines. It enables students to analyze, categorize, and reflect upon given game software projects and to significantly contribute to the success of a technical game development team, while giving them instrumental skills to estimate and judge upon game production efforts and costs.</p> <p>Learning Outcomes</p> <p>Upon successful completion of this module, students will be able to:</p> <ul style="list-style-type: none"> • demonstrate the basic understanding of applying object oriented and event driven programming paradigms • understand and explain the basics of kinematic physics simulation and how to apply them to animation in computer games • identify and describe the basic concepts of artificial intelligence in computer games • demonstrate basic knowledge in the game specific areas of 2D gaming, network gaming, and mobile gaming • analyze and evaluate techniques of character animation and camera behavior in game projects • understand and discuss advanced real-time rendering techniques and their impact on game projects using modern game engines, such as shaders, particle systems, organic and procedural rendering • identify and explain the specific characteristics and challenges in the production of games for mobile devices • understand the impact of sound parameters and analyze and evaluate the use of sound sources in 3D game environments • demonstrate the knowledge to combine these skills (programming, math, mechanics, interaction, rendering, physics, animation) to significantly contribute to the implementation of a computer game 				
3	<p>Indicative Module Content</p> <p>This course aims at covering the following topics:</p> <ul style="list-style-type: none"> • Collaborative software development environments • Object-oriented and event-based programming • Data structures and algorithms for games • Real-Time Character animation • Basic AI in games 				

	<ul style="list-style-type: none"> • Game camera behavior types • Game programming physics • Basics of network and multiplayer games • 2D game development • Mobile games • Game UIs • Indoor and outdoor rendering concepts • Visual realtime effects, particle systems, shaders • State-of-the-art game engines • Sound sources in 3D game environments • Practical implementation of a small game
3	Prerequisite Subjects <ul style="list-style-type: none"> • Successful participation in Game Development I course
4	Assessment Methods Examination Prerequisite: Homework project assignments Examination: Oral or written exam
5	Prerequisites for CP Enter your text regarding Prerequisites for CP here....
6	Used in other courses <ul style="list-style-type: none"> • MP2 - MP6 Media Projects
7	Significance of Mark for Final Mark
8	Name of Module-Responsible and Teaching Professors Prof. Tilmann Kohlhaase, Martin Leissler
9	Other Information -

Animation & Game Methodology 2

Sub-Module Producing and Production Management 2

- Complementary Elective Module „Technical Art for Producers“

A&G Meth 2 Prod MM 2 Tech Art for Producers					
ID	Workload	Credits	Semester	Module Frequency	Duration
			2nd Semester	Summer Term	1 Semester
1	Type of Course Lecture		Contact Hours 1 SWS/ 16 h	Self-Study	Size of Groups 15
2	<p>Learning Outcomes</p> <p>The Module „Technical Art for Producers“ aims at students who want to manage and organize an animation production without necessarily working as tech art operators themselves. It explains the technical pipeline steps (such as modeling, texturing, shading, rigging, lighting and data-handling) in a more theoretical way from a producers point of view. Students shall learn how to judge and evaluate workflow, data-structures and data-creation in terms of time consume, resources and costs.</p> <p>On successful completion of this module the student will be able to:</p> <ul style="list-style-type: none"> • describe the pipeline of an animation and / or games-assets production • analyze geometry in terms of performance • identify time-consuming workflow and pipeline steps • analyze and explain the influence of one pipeline step towards the next • identify performance-consuming working methods • judge time and costs of an animation and / or games-assets production 				
3	<p>Indicative Module Content</p> <ul style="list-style-type: none"> • animation / games-assets production pipeline • geometry-structures and topology • influence of geometry structures towards rigging and animation • influence of geometry structures towards shading and texturing • rendering methods • data-formats • referencing data • project structures and data-handling • Different ways of modeling • Different ways of rigging • Rendering using different rendering-methods 				
4	Prerequisite Subjects				
5	<p>Assessment Methods</p> <p>Homework and/or oral or written exams</p>				
6	Prerequisites for CP				
7	Used in other courses				

8	Significance of Mark for Final Mark
9	Name of Module-Responsible and Teaching Professors Module-Responsible: Carla Heinzl Teaching Professors: Carla Heinzl, N.N.
10	Other Information

Animation & Game Methodology 2

Sub-Module Producing and Production Management 2

- Complementary Elective Module „A&G Design for Producers“

A&G Meth 2 Prod MM 2 A&G Des for Producers					
ID	Workload	Credits	Semester	Module Frequency	Duration
			2nd Semester	Summer Term	1 Semester
1	Type of Course Lecture		Contact Hours 1 SWS / 16h	Self-Study	Size of Groups 15
2	<p>Learning Outcomes</p> <p>The complementary module "Animation & Game Design for Producers" aims to consolidate the learner's methodical understanding of animation and game design processes. It is targeted towards students with a focus on technical conceptualization and implementation. The learner is encouraged to adopt a critically informed, analytic and creative approach to the iterative resolution of design problems. After successful completion students shall demonstrate the following skills:</p> <p>□01_Knowledge & Understanding</p> <ul style="list-style-type: none"> • demonstrate critical understanding of fundamental theories, methods and practices involved with creating design concepts for animations and games • identify and describe typical elements and characteristics of ludic and narrative scenarios with regard to genre languages • show an awareness of audiences and users in the development, communication and interpretation of ideas <p>□02_ Intellectual skills</p> <ul style="list-style-type: none"> • interpret and critique design concepts for animations and games with regard to their functional and aesthetic qualities • identify and describe a methodically and strategically informed design process in order to solve typical animation & game related design problems <p>□03_Practical & Professional Skills</p> <ul style="list-style-type: none"> • identify and apply standard methods of iteration and prototyping in the context of animation and game • generate and document structured conceptual research for animation & game scenarios <p>□04_Transferable skills</p> <ul style="list-style-type: none"> • apply relevant criteria to articulate, discuss and evaluate creative decisions • present ideas, concepts and visual designs clearly in visual, verbal and written form • work effectively in self-directed and team-based work processes • 				
3	<p>Indicative Module Content</p> <ul style="list-style-type: none"> • basics of interaction design • principles and methods of game level design • dramaturgical principles and strategies for animations and games • visualization and prototyping for animation and games • design systems and design languages in animations and games 				

	<ul style="list-style-type: none">• methods and strategies in iterative design processes (idea generation, design strategies, design heuristics, design documentation)
3	Prerequisite Subjects
4	Assessment Methods
5	Prerequisites for CP
6	Used in other courses
7	Significance of Mark for Final Mark
8	Name of Module-Responsible and Teaching Professors Module-Responsible: Prof. Katharina Kafka Teaching Professors: Prof. Katharina Kafka, N.N.
9	Other Information

SEMESTER 3

Animation & Game Project 3

A&G P 3					
ID	Workload	Credits	Semester	Module Frequency	Duration
	325h	15 ECTS	3	Winter Term	1 Semester
1	Type of Course Problem based learning Workshops, seminars, lectures		Contact Hours 4 SWS / 64h	Self-Study 251 h	Size of Groups 5
2	<p>Learning Outcomes / Competencies</p> <p>This project focuses on the development of a functioning game/game prototype or an animation format 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, interaction and input devices. By creating a product for a defined platform and audience, the students learn to generate ideas, concepts and solutions in response to identified market needs.</p> <p>On successful completion of this module the student will be able to:</p> <ul style="list-style-type: none"> • apply project management techniques, tools and strategies through all stages of a project • demonstrate the use of appropriate research and presentation methods in the development and implementation of a project • 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 • apply an appropriate range of specialised software and hardware tools in the execution and completion of a project • understand the role of an author leading the production 				
3	<p>Indicative Module Content</p> <p>Sub-Module Animation & Game Methodology</p> <ul style="list-style-type: none"> • Research and development • Introduction to financing and funding of animation & game products • Legal aspects of production and distribution • Managing remote teams • Recruiting and human resources • Introduction to quality management • Introduction to media reception theory and user research • Animation & game studies (intermediate level): genres and genre languages, animation and game history, animation & game theory • Animation & game culture (intermediate level): concepts, practices and ethical frameworks 				

	<p>Sub-Module Animation and Game Design</p> <ul style="list-style-type: none"> • Creating, documenting and presenting design concepts • Design languages and styles • Basics of visual branding and visual communication in animation and game • Character design and character animation • Environment and world design • Digital scenography for animation and game • Interaction design for games and interactive animations, introduction to concepts and methods of user centered design • Storytelling and dramaturgy for linear and non-linear animation and game formats • Advanced cinematography for animations and games • Game design (level design, game balancing, game mechanics) • Basic directing of animations and games • Design methods: iteration, prototyping and previsualization, implementation) • Basics of sound design, music and dialogue writing for animations and games <p>□ Sub-Module Technical Art</p> <ul style="list-style-type: none"> • Intermediate computer generated graphics: modeling, rigging, texturing/shading, animation, lighting/rendering, asset-creation • Introduction to additional CGI-topics as for example cloth-simulation, hair-simulation, fluid-effects, fire-effects, smoke-effects, crowd-simulation • Intermediate lighting and rendering methods • Intermediate rigging concepts and mechanics • Introduction to postproduction: editing, sound, compositing <p>Sub-Module Game Development</p> <ul style="list-style-type: none"> • Introduction to source code repositories and collaborative development tools • Intermediate gameplay mechanics and usability patterns • Advanced object oriented game software development • Advanced game engines: architectures, features, and applications • Basic 2D Game development principles and practice • Intermediate principles of computer graphics • Introduction to cross platform and mobile game development • Intermediate artificial intelligence in games • Introduction to real-time character animation • Intermediate game programming physics • Introduction to user interfaces for games • Basics of interactive cinematography and game camera implementation • Advanced tools and technologies for prototyping and previsualisation • Intermediate game testing and usability analysis
<p>3</p>	<p>Prerequisite Subjects Enter your text regarding Prerequisite Subjects here....</p>
<p>4</p>	<p>Assessment Methods</p>

	<p>Examination Prerequisite: Prerequisite is the successful participation in all sub-modules:</p> <ul style="list-style-type: none"> • Animation & Game Methodology Producing and Production Management written, oral exam or portfolio(25%) • Animation and Game Design: homework, written, oral exam or portfolio(25%) • Game Development or Technical Art : written, oral exam or portfolio(25%) <p>Examination: Project: Final Presentation and documentation (25%)</p>
5	Prerequisites for CP
6	Used in other courses
7	<p>Significance of Mark for Final Mark According to CP: 7,26 %</p>
8	<p>Name of Module-Responsible and Teaching Professors Module-Responsible: Prof. Tilmann Kohlhaase Teaching Professors: N.N.</p>
9	Other Information

Animation & Game Methodology 3

A&G Meth 3					
ID	Workload	Credits	Semester	Module Frequency	Duration
	125 h	5	3rd Semester	Winterterm	1 Semester
1	Type of Course Sub-Modules: a) A&G Producing and Production Management 3 b) Legal and Ethical Issues in A&G 3		Contact Hours a) 1 SWS Lecture / 16h b) 1 SWS Lecture / 16h	Self-Study 93 h	Size of Groups 45
2	Learning Outcomes General Description: The Animation & Game Methodology Strand provides the students with interdisciplinary knowledge and skills to reflect animations and games with regard to their contexts of production and reception. It is composed of various sub-modules which introduce the learners with the economic, historic, cultural, aesthetic and ethical dimensions of digital media. The methodology strand allows students to gravitate towards a specialization and at the same time to acquire a holistic understanding of the entire field of practice. It aims to strengthen their organization and communication skills, their critical, quality oriented thinking and their awareness for audiences and users. Learning outcomes: After successful completion of the module learners will be able to: <ul style="list-style-type: none"> • understand and apply relevant concepts and methods involved with developing and producing animations and games • articulate an awareness for the ethical and legal dimensions of animation and game production and reception • carry out structured research and to deliver a coherent documentation and presentation of research results • communicate and interact efficiently in multidisciplinary teams using relevant methods and practices of project management and producing 				
3	Indicative Module Content The sub-modules of „Animation & Game Methodology 3“ cover the following two thematic fields: <ul style="list-style-type: none"> • Animation & Game Producing and Production Management 3 • Legal and ethical Issues in Animations & Games 2 Media and Entertainment Law 				
3	Prerequisite Subjects				
4	Assessment Methods Examination Prerequisite: Homework, practical work and demonstration (40%), Examination: Written or oral exam (60%)				
5	Prerequisites for CP				
6	Used in other courses				

7	Significance of Mark for Final Mark According to CP: 2,42%
8	Name of Module-Responsible and Teaching Professors Module-Responsible: Prof. Katharina Kafka Teaching Professors: N.N.
9	Other Information

Animation and Game Methodology 3

Sub-Module Producing and Production Management 3

A&G Meth 3 Sub-Module Prod MM 3					
ID	Workload	Credits	Semester	Module Frequency	Duration
	63 h	Sub-Module	3rd Semester	Winter Term	1 Semester
1	Type of Course Lecture/Seminar		Contact Hours 1 SWS / 16h	Self-Study 48h	Size of Groups 45
2	<p>Learning Outcomes</p> <p>Learning Outcomes This sub-module provides professional skills for communication and cooperation in animation and game project teams. The students are introduced to advanced concepts, strategies and tools typically involved in the development, production and distribution of animations and games. After successful completion learners will be able to:</p> <ul style="list-style-type: none"> • explain and apply relevant concepts, methods and tools of project management in the creative industries • identify and organize responsibilities, resources, workflows and time schedules in animation and game projects • demonstrate research and documentation skills and construct a coherent presentation • communicate and work effectively both individually and in groups using professional project management methods and tools 				
3	<p>Indicative Module Content</p> <ul style="list-style-type: none"> • Introduction to advanced concepts and strategies of project management • Management of responsibilities, resources, workflows and time schedules in animation and game production teams • Professional methods and tools of project documentation in the animation and game industries • Pitching ideas: advanced communication and presentation methods and strategies 				
3	Prerequisite Subjects				
4	<p>Assessment Methods</p> <p>Examination Prerequisite: Homework, practical work and demonstration (40%), Examination: Written or oral exam (60%)</p>				
5	Prerequisites for CP				
6	Used in other courses				
7	Significance of Mark for Final Mark				
8	<p>Name of Module-Responsible and Teaching Professors</p> <p>Module-Responsible: Prof. Katharina Kafka</p> <p>Teaching Professors N.N.</p>				

Animation and Game Methodology 3

Sub-Module Legal and Ethical Issues 3: „Media and Entertainment Law“

A&G Meth 3 Sub-Module Leg&Eth 3: „Media and Entertainment Law“					
ID	Workload	Credits	Semester	Module Frequency Winter	Duration 1
	62 h	Sub Module	3rd Semester	Term	Semester
1	Type of Course Lecture/Seminar		Contact Hours 1 SWS / 16h	Self-Study 46h	Size of Groups 45
2	Learning Outcomes Learning Outcomes: This sub-module introduces students to the legal framework and legal issues in relation to animation and game production. On successful completion of this module students should be able to: <ul style="list-style-type: none"> • name and describe core concepts of media law • display an understanding of the role of legal standards and procedures in the context of animation and game development, production and distribution • exhibit an awareness for the international dimension of media law in entertainment industry • identify and explain basic elements of legal contracts in the context of animation and game production 				
3	Indicative Module Content <ul style="list-style-type: none"> • The concept of intellectual property in national and international media law • Copyright law and its legal implications for content creation and distribution in digital media • Overview over legal issues, standards and practices related to production and coproduction of animations and games (funding and financing, insurance, talent agreements, producer agreements, licensing etc.) • Revenue chains in the national and international media industries and typical related legal frameworks • Media ethics and the law: basic principles in constitutional and european law (human rights and medialaw, protection of minors, ethics of entertainment media etc.) • Contracts in media law (function of contracts in the production process, typical contracts/case studies, standards in contract language) 				
3	Prerequisite Subjects				
4	Assessment Methods Examination Prerequisite: Homework, practical work and demonstration (40%), Examination: Written or oral exam (60%)				
5	Prerequisites for CP				
6	Used in other courses				
7	Significance of Mark for Final Mark				

8	Name of Module-Responsible and Teaching Professors Module-Responsible : Prof. Katharina Kafka Teaching Professors : N.N.
9	Other Information

SEMESTER 4

Animation & Game Industrial Placement 4

IP4 – Industrial Placement (including Preparation and Follow Up)					
ID	Workload	Credits	Semester	Module Frequency	Duration:
IP4	750 h	30	4th Semester	Summer Term	1 Semester
1	Type of Course a) Lecture b) Tutorials, group discussions, peer reviews c) Industrial placement		Contact Hours a) 2 SWS/30 h b) 2 SWS/30 h	Self-Study c) 690 h	Size of Groups a) 30 b) 15
2	Learning Outcomes On successful completion of this subject the student will be able to: Understand and reflect the practical work of a designer, producer, developer • Reflect new fields of application and new professional methods Integrate needs of practice in coming projects Integrate methods of practice in coming projects				
3	Indicative Module Content 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. The students work in the fields of: Concept, planning and / or production of movie, video, TV and AV projects Concept, planning and / or production of animation projects Concept, planning and / or production of game projects Concept, planning and / or production of multimedia projects Concept, planning and / or production of media systems Implementation and / or programming of multimedia products and media systems • Implementation and / or programming of games Management and marketing of multimedia products and media systems				
3	Prerequisite Subjects Enter your text regarding Prerequisite Subjects here....				
4	Assessment Methods Examination Prerequisite: Completed IP (0%) Examination: IP-Report, presentation of IP-Report (100%)				
5	Prerequisites for CP				
6	Used in other courses				
7	Significance of Mark for Final Mark None (0%)				
8	Name of Module-Responsible and Teaching Professors				

	All professors of Animation & Game
9	Other Information

SEMESTER 5

Animation & Game Project 5

A&G P 5					
ID	Workload	Credits	Semester	Module Frequency	Duration
	500h	20 ECTS	5th Semester	Winter Term	1 Semester
1	Type of Course Problem based learning Workshops, seminars, lectures		Contact Hours 5 SWS / 80h	Self-Study 420	Size of Groups 5
2	<p>Learning Outcomes / Competencies</p> <p>The aim of the Project is to develop, produce and implement a fully functional product from brief through presentation, iteration/testing to final production. Students are encouraged to explore the potential of cross-format, cross-platform, transmedia concepts. 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 encourages students to transcend common aesthetic standards and established models of user/audience participation.</p> <p>The project work will integrate advanced project management aspects which qualify the students to develop scenarios for emerging or future technological environments and market conditions where their project might be used or applied successfully. 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.</p> <p>In order to allow students to treat more complex topics with strong innovative elements or experimental/artistic character the advanced media project may be carried out over two semesters (see MP6).</p> <p>□ On successful completion of this module the student will be able to:</p> <ul style="list-style-type: none"> • manage a self-initiated project from brief through preproduction, iteration/testing to production and presentation • demonstrate creativity, independence and inventiveness in the approach and methods used to develop, direct and implement a project • demonstrate a broadened understanding of linear and non linear design structures and strategies • extend and transgress standard concepts of storytelling and gameplay • develop and produce a complex and innovative animation or game product • identify and develop innovative concepts for user and target group centered design • apply industrial standard animation and game technologies and technological procedures • identify and develop production pipelines for effective and high quality workflows in media productions 				
3	<p>Indicative Module Content</p> <p>Sub-module Animation and Game Design</p> <ul style="list-style-type: none"> • Creating and documenting advanced design concepts and design programmes, art bibles and design bibles • Environmental storytelling in virtual spaces • Script-writing, dialogue and character development 				

	<ul style="list-style-type: none"> • Advanced character animation, acting for animation, character expression, facial animation • Design of serial, modular or cross-platform concepts and worlds • Designing for target groups: concept development, branding and visual communication in animations and games • Advanced interaction design; user centered design • Strategies and examples of digital scenography • Advanced game design / level design • Script writing for animations and games • Sound design, music and dialogue for animations and games • Directing animations and games • Artistic vision and author's voice <p>▣Sub-Module Animation & Game Methodology</p> <ul style="list-style-type: none"> • Advanced project management skills including project plan, work breakdown structure, project management software, assetmanagement str • Creative strategies and design management • Business models in the entertainment industry, distribution and marketing of animation and game products, strategies for online distribution • Processes, roles and methods of producing, managing big teams • Media reception theory and user research • Advanced animation & game studies: genres and genre languages, animation and game history, animation & game theory • Animation & game culture (advanced level): concepts, practices and ethical frameworks <p>Sub-module Game Development</p> <ul style="list-style-type: none"> • Game testing • Game usability • Advanced game programming • Advanced AI for animation and game (p.ex. pathfinding, collision detection, matrix structures, crowd simulation, non-player behaviour) • Software engineering • Networks and databases • Gesture recognition, Audio and video based input • Writing clear, efficient and highly performing code <p>Sub-module Technical Art</p> <ul style="list-style-type: none"> • Introduction to motion capturing, motion tracking and 3-D scanning • Introduction to scripting for computer generated graphics • Advanced Rigging Concepts and mechanics • Advanced strategies for technical artists and technical direction • Advanced lighting and rendering methods • Intermediate postproduction for animation
<p>3</p>	<p>Prerequisite Subjects Enter your text regarding Prerequisite Subjects here....</p>
<p>4</p>	<p>Assessment Methods</p>

	<p>Examination Prerequisite:</p> <p>Prerequisite is the successful participation in all sub-modules:</p> <ul style="list-style-type: none"> • Animation & Game Methodology Producing and Production Management written, oral exam or portfolio(25%) • Animation and Game Design: homework, written, oral exam or portfolio(25%) • Game Development or Technical Art: written, oral exam or portfolio(25%) <p>Examination: Project: Final Presentation and documentation (25%)</p>
5	Prerequisites for CP
6	Used in other courses
7	<p>Significance of Mark for Final Mark</p> <p>According to CP: 9,68 %</p>
8	<p>Name of Module-Responsible and Teaching Professors</p> <p>Module-Responsible: Prof. Tilmann Kohlhaase</p> <p>Teaching Professors: N.N.</p>
9	Other Information

SEMESTER 6

Animation and Game Project 6

A&G P 6					
ID	Workload	Credits	Semester	Module Frequency	Duration
	500h	20 ECTS	6	Summer Term	1 Semester
1	Type of Course Problem based learning Workshops, seminars, lectures		Contact Hours 5 SWS / 80h	Self-Study 420h	Size of Groups 5
2	<p>Learning Outcomes</p> <p>The aim of the Project is to develop, produce and implement a fully functional product from brief through presentation, iteration/testing to final production. Students are encouraged to explore the potential of cross-format, cross-platform, transmedia concepts. 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 used or applied successfully. 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.</p> <p>In order to allow students to treat more complex topics with strong innovative elements or experimental/artistic character the advanced media project may be carried out over two semesters (see MP5).</p> <p>On successful completion of this module the student will be able to:</p> <ul style="list-style-type: none"> • manage a self-initiated project from brief through preproduction, iteration/testing to production and presentation • demonstrate creativity, independence and inventiveness in the approach and methods used to develop and implement a project • demonstrate a broadened understanding of linear and non linear design structures and strategies • demonstrate confident use of production tools and design strategies in conceptual and technical development of media productions • extend and transgress standard concepts of storytelling and gameplay • develop and produce a complex and innovative animation or game product • identify and develop innovative concepts for user centered design • apply industrial standard animation and game technologies and technological procedures • demonstrate a self-reflective and self-critique in creation of a highly immersive game or animation • keep and defend the artistic vision throughout the production process 				
3	<p>Indicative Module Content</p> <p>Sub-Module Animation & Game Methodology</p> <ul style="list-style-type: none"> • Company Forms • Business Plan 				

	<ul style="list-style-type: none"> • Start-Up Management • Networking & Acquisition • Negotiation Strategies • Leadership Styles / Artistic Leadership • Keeping a vision through the development and realisation of a project • Motivation Techniques • Multi Platform Strategies/ 360° Concepts • Advanced media reception theory and user research • Advanced animation & game studies: genres and genre languages, animation and game history, animation & game theory • Animation & game culture (advanced level): concepts, practices and ethical frameworks <p>▣Sub-Module Animation and Game Design</p> <ul style="list-style-type: none"> • Learning from the avantgarde: current design topics in animation and game • Creativity and experiment: examples from art, design and cinematography • Advanced design theory and design research • Design ethics • brand and identity design in the entertainment industries • Trans-media/cross-format: design of mixed realities and immersive environments • Advanced scenario development and scriptwriting for animations and games • Art Direction for animations and games <p>▣Sub-Module Game Development</p> <ul style="list-style-type: none"> • Advanced object oriented game software development • Advanced 2D Game development principles and practice • Advanced Artificial intelligence in games • Advanced real-time character animation • Advanced network gaming • Advanced user interfaces for games • Advanced browser game technologies • Advanced interactive cinematography and game camera/lighting implementation • Advanced stereoscopy, VR and AR games <p>▣Sub-Module Technical Art</p> <ul style="list-style-type: none"> • Advanced technical direction • Creating software tools for 3-D animation (MEL, Python) • Advanced postproduction for animation • Advanced visual effects
<p>3</p>	<p>Prerequisite Subjects Enter your text regarding Prerequisite Subjects here....</p>
<p>4</p>	<p>Assessment Methods Examination Prerequisite: Prerequisite is the successful participation in all sub-modules:</p> <ul style="list-style-type: none"> • Animation & Game Methodology Producing and Production Management <p>written, oral exam or portfolio(25%)</p>

	<ul style="list-style-type: none"> • Animation and Game Design: homework, written, oral exam or portfolio(25%) • Game Development or Technical Art : written, oral exam or portfolio(25%) <p>Examination: Project: Final Presentation and documentation (25%)</p>
5	Prerequisites for CP
6	Used in other courses
7	Significance of Mark for Final Mark According to CP: 9,68 %
8	Name of Module-Responsible and Teaching Professors Module-Responsible : Prof. Tilmann Kohlhaase Teaching Professors : N.N.
9	Other Information

Animation and Game Methodology 6

A&G Meth 6					
ID	Workload 125 h	Credits 5	Semester 6th Semester	Module Frequency Winterterm	Duration 1 Semester
1	Type of Course Submodule Producing and Production management 6		Contact Hours 3 SWS / 48 h	Self-Study 77	Size of Groups 15 h
2	<p>Learning Outcomes</p> <p>General Description:</p> <p>The Animation & Game Methodology Strand provides the students with elementary interdisciplinary knowledge and skills to reflect animations and games with regard to their contexts of production and reception. It is composed of various sub-modules which introduce the learners with the economic, historic, cultural, aesthetic and ethical dimensions of digital media. The methodology strand complements the student's path towards a disciplinary specialization within the practical field of animation and game production with holistic, knowledge-based methodic approach. It aims to strengthen the student's organization and communication skills, their critical, quality oriented thinking and their awareness for audiences and users.</p> <p>Learning outcomes:</p> <p>After successful completion of the module "Animation & Game Methodology 6" learners will be able to:</p> <ul style="list-style-type: none"> • analyse and evaluate animation and game concepts with regard to historic, cultural, aesthetic, ethical and economic contexts of production and reception • identify and apply strategies of idea generation and concept development in the field of animations and games • demonstrate advanced conceptual research and development skills, an advanced capacity to construct a coherent, substantiated presentation and to document results in a professional manner • communicate and work efficiently in multidisciplinary teams based on professional methods, strategies and tools of project management and producing 				
3	<p>Indicative Module Content</p> <p>„Animation & Game Methodology 6“ covers the following thematic field:</p> <ul style="list-style-type: none"> • Animation & Game Studies 3 (Production Development and Innovation) 				
3	Prerequisite Subjects				
4	Assessment Methods				
5	Prerequisites for CP				
6	Used in other courses				
7	Significance of Mark for Final Mark				

	According to CP: 2,42%
8	Name of Module-Responsible and Teaching Professors Module-Responsible: Prof. Katharina Kafka Teaching Professors: N.N.
9	Other Information

Animation & Game Methodology 6

Sub-Module Producing and Production Management 6: „Production Development and Innovation“

A&G Meth 6 Sub-Module Prod MM 6: „Production Development and Innovation“					
ID	Workload 125h	Credits Submodule	Semester 6th Semester	Module Frequency Summer Term	Duration 1 Semester
1	Type of Course Practical		Contact Hours 3 SWS Practical (16h)	Self-Study 77h	Size of Groups 15
2	<p>Learning Outcomes</p> <p>Learning Outcomes: This module provides students with interdisciplinary methodological knowledge and strategies to independently identify and develop new ideas for animation and game products. After successful completion learners will be able to:</p> <ul style="list-style-type: none"> • build a vision of a new product to be developed and determine its focus, its added value, its degree of innovation and its conditions • clarify the knowledge and information needed for the development process, set up an appropriate research and integrate the research results in the concept development process • apply a variety of creative and analytical methods of idea generation and development, generate multiple solutions to a design problem and document the solutions in a structured manner • critically evaluate a concept development process and make appropriate, founded adjustments and choices 				
3	<p>Indicative Module Content</p> <ul style="list-style-type: none"> • techniques and strategies of creative thinking • advanced design heuristics • advanced visualization and prototyping • advanced product, user and audience research • case studies: innovative products and projects • animations and games in the arts; animation and game avantgarde • advanced animation and game critique • research and technological innovation related to animations and games • team-based or individual research, idea generation and concept development projects under supervision 				
3	Prerequisite Subjects				
4	Assessment Methods				
5	Prerequisites for CP				
6	Used in other courses				
7	Significance of Mark for Final Mark				

8	Name of Module-Responsible and Teaching Professors Module-Responsible: Prof. Katharina Kafka Teaching Professors All A&G Lecturers
9	Other Information

SEMESTER 7

Animation & Game Research-Project

A&G Res-P					
ID	Workload	Credits	Semester	Module Frequency	Duration
	325h	15 ECTS	7	Every Term	10 weeks
1	Type of Course Seminar, Tutorials, group discussions and Peer Reviews		Contact Hours 3 SWS / 30h	Self-Study 295h	Size of Groups 20
2	Learning Outcomes/Competencies On successful completion of this subject the student will be able to: <ul style="list-style-type: none"> • use appropriate methodologies to explore the topic for an animation or game related product; and/or • carry out extensive and detailed user/audience research for a product; and/or • use appropriate methodologies with regard to research for technology or product development; and/or • use appropriate methodologies with regard to market research; and/or • use appropriate research methodologies with regard to animation and games studies; and/or • use appropriate research methodologies with regard to cultural, historical, ethical or aesthetic aspects of animations and games; and/or • use appropriate methodologies with regard to product concept and development; and/or • use appropriate methodologies to plan the project organisation and financing of a media-project; and/or • Identify and design for the cultural environment in which a product will be used or experienced 				
3	Indicative Module Content The student(s) submits a briefing document for an animation or game related product to a desired project coach. Once this brief has been accepted, the student then writes a planning document, containing: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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) 				
3	Prerequisite Subjects				
4	Assessment Methods Examination Prerequisite:				

	<ul style="list-style-type: none">• Research Documentation (75%) Examination: <ul style="list-style-type: none">• Examination: Final Presentation (25%)
5	Prerequisites for CP
6	Used in other courses
7	Significance of Mark for Final Mark According to CP: 7,26 %
8	Name of Module-Responsible and Teaching Professors Module-Responsible: Prof. Tilmann Kohlhaase Teaching Professors : N.N.
9	Other Information

Animation & Game Bachelor-Project

A&G Ba-P					
ID	Workload	Credits	Semester	Module Frequency	Duration
	325h	15 ECTS	7	every term	12 weeks
1	Type of Course Seminar, Tutorials, Group Discussions and Peer Reviews		Contact Hours 4 SWS / 60h	Self-Study 295h	Size of Groups 20
2	Learning Outcomes / Competencies On successful completion of this subject the student will be able to <ul style="list-style-type: none"> • 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 • 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 				
3	Indicative Module Content Students may develop and realise a complete media system or media product, such as an animation, a game, a media installation or application. The work should demonstrate an 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 team work the project proposed should outline clearly the areas of responsibility for each member of the team. Project Schedule: <ul style="list-style-type: none"> • Discussion sessions and review of preliminary ideas • Student presentation of ideas (seminars; individual and group reviews) • Paper Prototyping (group/peer reviews) • Prototype Presentation (group/peer reviews) • Final Presentation (assessment) 				
3	Prerequisite Subjects				
4	Assessment Methods Examination Prerequisite: Bachelor Project: 75% Colloquium: 25%				
5	Prerequisites for CP				

6	Used in other courses
7	Significance of Mark for Final Mark According to CP: 7,26%
8	Name of Module-Responsible and Teaching Professors Module-Responsible: Prof. Tilmann Kohlhaase Teaching Professors: N.N.
9	Other Information

ELECTIVE CATALOGUE (SEMESTER 3 ONWARDS)

Animation and Game Electives

A&Game EL					
ID	Workload	Credits	Semester	Module Frequency	Duration
	125 h	5	3-7	Each Semester	1 Semester
1	Type of Course Lecture/Seminar		Contact Hours 3 SWS / 48h	Self-Study 77 h	Size of Groups 15
2	<p>Learning Outcomes</p> <p>The Animation & Game Electives deepen the student's knowledge in specialized fields of animation and game development and production and provide a framework for the acquirement of advanced skills. On successful completion of these modules students shall be able to</p> <ul style="list-style-type: none"> • work and communicate efficiently in multidisciplinary teams using professional methods and practices of project management and producing • integrate different media and production technologies to a complex product • use scholarly terms and methods in order to analyse and describe animations and games both with to genre- and format specific characteristics • demonstrate awareness of users, audiences, producers and markets and discuss animation and game production with regard to a broader cultural, social, ethical and economic contexts • identify and apply professional design methods, practices and strategies related to animation and game concept development, narration, direction and animation & game art • understand and apply scientific concepts and professional procedures related to game programming and game development • understand and apply scientific concepts and professional procedures related to technical art and animation technology 				
3	<p>Indicative Module Content</p> <p>The Animation & Game Elective Modules are clustered in the following fields:</p> <ul style="list-style-type: none"> • Game Development • Technical Art for Animations and Games • Animation and Game Design • Animation and Game Methodology • Animation and Game Research and Development 				
3	Prerequisite Subjects				
4	Assessment Methods				
5	Prerequisites for CP				
6	Used in other courses				
7	Significance of Mark for Final Mark				

	According to CP: 2,42%
8	Name of Module-Responsible and Teaching Professors Module-Responsible: Prof. Katharina Kafka Teaching Professors: All A&G Lecturers
9	Other Information

Game Development Electives

Game-Dev EL					
ID	Workload	Credits	Semester	Module Frequency	Duration
	125 h	5 ECTS	3-6		1 Semester
1	Type of Course Lecture/Seminar/Project		Contact Hours SWS / 48 h	Self-Study 77	Size of Groups 15
2	<p>General Description: Building upon the basic knowledge and skills acquired in "Game Development I" and "Game Development II", these courses dive deeper into several specialized fields of game development, such as real-time animation, artificial intelligence, or network gaming.</p> <p>□</p> <p>Learning outcomes: On successful completion of these modules students shall be able to:</p> <ul style="list-style-type: none"> • explain and use the principles of object-oriented software development to implement games across all genres • describe, explain the game development process and apply professional tools and toolchains along those processes • identify, explain, and debug possible flaws and errors in game code or game software architectures • demonstrate professionalism within key aspects of game development, including the underlying principles, patterns, related tools and processes, as well as implementation details. • demonstrate state-of-the-art knowledge and skills in selected areas of game development, enabling them to design and implement own approaches to given challenges by reflecting, analyzing, and adapting existing approaches. • work and communicate efficiently within the role of a game developer in multidisciplinary teams. • demonstrate awareness of the complete software development process in the games industry. 				
3	<p>Indicative Module Content The possible thematic spectrum of these courses is:</p> <ul style="list-style-type: none"> • Gameplay mechanics and usability patterns • Advanced object oriented game software development • Game Engines: architectures, features and applications • 2D Game development principles and practice • Advanced computer graphics • DirectX, OpenGL, Shader Languages • Cross platform game development for mobile devices • Practical implementation of a complete game • Artificial intelligence in games • Real-Time character animation • Network games • Game programming physics • User interfaces for games • Browser game engines and technologies • Interactive cinematography implementation, game cameras and lighting • Stereoscopy, VR and AR games • Tools and technologies for prototyping and previsualisation 				

	<ul style="list-style-type: none"> • Game testing and usability
3	Prerequisite Subjects Game Development I and II courses
4	Assessment Methods <ul style="list-style-type: none"> • Homework assignments • Oral or written exam
5	Prerequisites for CP
6	Used in other courses
7	Significance of Mark for Final Mark According to CP: 2,42%
8	Name of Module-Responsible and Teaching Professors Module-Responsible: Prof. Martin Leissler Teaching Professors: Prof. Martin Leissler, N.N.
9	Other Information

Technical Art Electives

Tech Art EL					
ID	Workload	Credits	Semester	Module Frequency	Duration
	125 h	5 ECTS	3-6		1 Semester
1	Type of Course a) Project		Contact Hours 3 SWS / 48h	Self-Study 77 h	Size of Groups 15
2	<p>Learning Outcomes</p> <p>Technical Art Electives shall deepen the student's basic-knowledge in the different tech-art animation and games production departments, such as for example modeling, shading, rigging, lighting, rendering, game-assets creation and postproduction. They will each teach one of those subjects on an advanced level.</p> <p>Upon successful completion of this module, students will be able to:</p> <ul style="list-style-type: none"> • list and describe all the specific tools and software needed to complete the task of the particular department • use professional workflows to complete the particular task • troubleshoot technical errors • identify and explain possible error sources in the workflow of the particular department • analyze and describe nodes and their attribute used to complete the work for the particular pipeline step • analyze and describe settings used to complete the work for the particular pipeline step 				
3	<p>Indicative Module Content</p> <p>possible TA-elective modules:</p> <ul style="list-style-type: none"> • Advanced Rigging • Simulation • Advanced Shading / Lighting / Rendering • Sculpting • Scripting for Animation Software • Editing • Compositing • Sound editing 				
3	Prerequisite Subjects				
4	<p>Assessment Methods</p> <p>Examination Prerequisite: Homework</p>				
5	Prerequisites for CP				
6	Used in other courses				
7	<p>Significance of Mark for Final Mark</p> <p>According to CP: 2,42%</p>				

8	Name of Module-Responsible and Teaching Professors Module-Responsible: Carla Heinzl Teaching Professors: Carla Heinzl, N.N.
9	Other Information

Animation & Game Design Electives

A&G Des EL					
ID	Workload	Credits	Semester	Module Frequency	Duration
	125 h	5 ECTS	3-6		1 Semester
1	Type of Course Lecture/Seminar/Project		Contact Hours 3 SWS / 48 h	Self-Study 77	Size of Groups 15
2	<p>Learning Outcomes</p> <p>The A&G Design Electives deepen the student's knowledge in specialized fields of animation and game design and provide a framework for the acquirement of advanced skills. On successful completion of these modules students shall be able to:</p> <ul style="list-style-type: none"> • work and communicate efficiently in multidisciplinary teams using professional methods and practices of idea generation, conceptual research and concept documentation • apply different media and production technologies suitable for prototyping and visualization • use scholarly terms and methods in order to analyse and describe animations and games both with to genre- and format specific characteristics • demonstrate an awareness of users, audiences, producers and markets • identify and apply professional design methods, practices and strategies related to animation and game concept development, narration, direction and animation & game art 				
3	<p>Indicative Module Content</p> <p>Indicative Content Overview:</p> <ul style="list-style-type: none"> • Advanced scenario and concept development for animations and games • Innovative animation and game formats • Visual Development and Art direction for animations and games • Advanced animation • Advanced game design • Advanced post production • Advanced game interaction design • Advanced dramaturgy, storytelling and scriptwriting for animations and games • Advanced cinematography for for animations and games • Sound design, music and dialogue for animations and games • Advanced editing for animations and games • Trailer concepts and trailer production for animations and games <p>□ Basic indicative elements are:</p> <ul style="list-style-type: none"> • Advanced methods of scenario development, dramaturgy and storytelling for animations and games, transmedia storytelling, stroytelling and concept development for serial formats • Documenting and pitching animation & game concepts • Advanced game level design • Advanced game interaction design (user experience design, game usability/playtesting, information design) • Advanced cinematography for animations and games; directing animation & games • Layout and previsualisation for animations and games 				

	<ul style="list-style-type: none"> • Character design and character development for animation and games • Character animation and movement design • Direction of animations and games • Narration and story design • Environment and world design for animation and games • Advanced visualization and prototyping • Art direction and design documentation for animations and games • Advanced animation: animation concepts, animation of human and animal characters, acting for animators, facial animation and lip sync • Experimental animations and games • Sound design, music and dialogues for animation and games • Conceptualizing and designing media brands/cross platform IPs • Promotion formats for animations and games, trailer writing and trailer production • Animation and games in public space, scenography
3	Prerequisite Subjects
4	Assessment Methods
5	Prerequisites for CP
6	Used in other courses
7	Significance of Mark for Final Mark According to CP: 2,42%
8	Name of Module-Responsible and Teaching Professors Module-Responsible: Prof. Katharina Kafka Teaching Professors: Prof. Katharina Kafka, Prof. Tilmann Kohlhaase, Prof. Wilhelm Weber. N.N.
9	Other Information

Animation & Game Methodology Electives

A&G Meth EL					
ID	Workload	Credits	Semester	Module Frequency	Duration
	125 h	5 ECTS	3-6		1 Semester
1	Type of Course Lecture/Seminar		Contact Hours 3 SWS / 48h	Self-Study 77 h	Size of Groups 15
2	<p>Learning Outcomes</p> <p>The A&G Methodology Electives deepen the student's interdisciplinary knowledge and methodological skills to reflect animations and games with regard to economic, historic, cultural, aesthetic and ethical contexts of production and reception. It provides students with advanced organization and communication competencies and fosters critical, quality oriented thinking as well as an awareness for audiences and users.</p> <p>On successful completion of these modules students shall be able to:</p> <ul style="list-style-type: none"> • demonstrate proficiency in the close formal, thematic and generic analysis and evaluation of different kinds of animations and games • apply relevant scientific terms and models in order to discuss animations and games with regard to historic, cultural, aesthetic, ethical and economic contexts of production and reception • to identify and explain professional methods, strategies and tools of project management and producing • carry out advanced conceptual research and to construct a coherent, substantiated presentation 				
3	<p>Indicative Module Content</p> <ul style="list-style-type: none"> • Animation and game history; history of animation & game technology • Art history and history of visual culture • Animation and game studies • Media and communication studies • Social and cultural studies (electives offered by the Faculty of Social and Culture Studies SUK) • Experiment and avantgarde in animations and games • Ethical concepts and standards in animation & game production • Legal frameworks for animation and game production • Animation and game business: Producing and production development in the international media industry <p>Basic indicative elements are:</p> <ul style="list-style-type: none"> • Advanced topics of animation and game history: genres, formats, styles and cultures • Advanced history of animation and game technology • Advanced topics in animation studies: concepts and methods of film theory and film analysis • Advanced topics in game studies: game theory/theory of play, gaming cultures, game analysis • Selected topics in art history, iconography and history of visual culture and their relevance for animations and games • Notions and concepts of space, environment and architecture in animations and games • Semiotics and communication theory for animations and games 				

	<ul style="list-style-type: none"> • Audiences and users: concepts and theories of media perception, media effects and media usage for animations and games • Concepts of individuality, character, gender and identity in the digital age • Ethical issues in animation & game production • Media and entertainment law as basis for animation and game production: managing intellectual property and media brands, legal dimensions of funding, production and coproduction in international markets, authorship and copyright in the digital age • Animation & game business ; entrepreneurship in the animation and games industry • Professional methods and practices of animation & game producing and production management • Cross media marketing and branding; developing and managing IP's and media brands in international markets • Entrepreneurship in the animation & game industry
3	Prerequisite Subjects
4	Assessment Methods Final presentation and documentation
5	Prerequisites for CP
6	Used in other courses
7	Significance of Mark for Final Mark According to CP: 2,42%
8	Name of Module-Responsible and Teaching Professors Module-Responsible: Prof. Katharina Kafka Teaching Professors: All A&G Lecturers
9	Other Information

Animation & Game Research and Development Elective

A&G RD EL					
ID	Workload	Credits	Semester	Module Frequency	Duration
	125 h	5 ECTS	3-6		1 Semester
1	Type of Course Lecture/Seminar		Contact Hours 3 SWS / 48h	Self-Study 77 h	Size of Groups 15
2	Learning Outcomes On successful completion of this module the student shall be able to: <ul style="list-style-type: none"> • carry out targeted case studies concerning aesthetic, technological or management issues in animation and game development • identify and apply relevant design-, management- and technology-based methods of idea generation, concept development and implementation in the field of animations and games and related disciplines • critically evaluate animation and game concepts with regard to their innovative potential, their social impact, their aesthetic and technical dimensionality and their methods of production; • describe and apply relevant methods of presentation, simulation and prototyping in the field of animation and game development 				
3	Indicative Module Content This module aims to provide learners with the knowledge, skills and competencies required to identify and investigate problems related to the development, production and reception of animation and games in form of self-directed case studies. By encouraging a multidisciplinary, initiative-driven approach to the generation of topics and ideas it gets learners to expand their thought processes and to adopt an open and creative approach to design thinking, artistic strategies and technological problem solving. Through exploration of research, analysis, evaluation and design practices, learners - mentored by staff members - develop their ability to solve relevant, innovation oriented, self-initiated challenges in the field of animations and games and related disciplines.				
3	Prerequisite Subjects				
4	Assessment Methods Final presentation and documentation				
5	Prerequisites for CP Examination Prerequisite: 0% Examination: Final presentation and written documentation (100%)				
6	Used in other courses				
7	Significance of Mark for Final Mark According to CP: 2,42%				
8	Name of Module-Responsible and Teaching Professors Module-Responsible: Prof. Katharina Kafka Teaching Professors:				

	All A&G Lecturers
9	Other Information