Faculty of Cultural Sciences

Module Catalog
MA Digital Games

[Masters of Arts]

Technology
Arts Sciences
TH Köln

Content

Module Catalog | MA Digital Games [Masters of Arts]

1　Program Description

This postgraduate program is aimed primarily at graduates of a thematically relevant Bachelor's program in subjects such as Game Arts, Game Design, or Game Programming. Within the framework of this Masterclass, students are given the opportunity to continue their own artistic and scientific work at a postgraduate level through an in-depth study of the development and academic analysis of digital games. The program is characterized by the following curricular components: a) an independent research and development project over the course of three semesters (45 ECTS in total) b) a specialization in two out of the three subject areas "Game Arts", "Game Design", and "Game Programming" (plus Sound Design) c) Media and Game Studies & Economics and Entrepreneurship d) Teaching or Research Practice.

2　Graduate Profile

Graduates of the MA Digital Games degree track should have gained specialist knowledge and skills in two out of the three practice fields "Game Arts," "Game Design," and "Game Programming". They should also have further developed a holistic games literacy including knowledge and skills in the above-mentioned fields, and also sound design, project management, economics and entrepreneurship, game studies, player research, and game analysis. Above all, graduates should have acquired various artistic and academic skills required to design and pursue a one-and-a-half-year research and development project at the intersection of theory and practice – including academic, methodological, artistic, technical, and managerial skills. On top of that, depending on their choice, they have either learned how to collaborate in a professional inter-disciplinary research and development project (as a research assistant), or gained experience and skills in teaching of undergraduates (as a teaching assistant).

In comparison to graduates of undergraduate Game programs, graduates of the MA Digital Games can be characterized by higher specialist competencies, but and even more so by high-er academic competencies and a more pronounced artistic personality. Graduates should have developed comprehensive artistic-academic action and reflection skills, which help to prove themselves long-term in the interdisciplinary, continuously-changing work contexts within and outside the games industry in leading roles, and also as founders.

As artists and researchers, they are able to actively contribute to the interdisciplinary discourse on games, their players, and the cultures around them. They furthermore have the ability to critically judge the cultural and social effects of their own work. Their ethical competencies en-compass an engaged attitude towards one's own artistic-academic actions. Last but not least, graduates are prepared for work in international contexts and intercultural teams.

Graduates should be employable within the traditional global games industry, including studios of various sizes and focuses (AAA, Indie, Serious Games), in different roles according to their specialization. Those roles include (but are not limited to): game designer, narrative designer, level designer, project manager, character designer, 2D artist, 3D artist, animator, and game-play programmer. Furthermore, they should be employable in other sectors that develop or use digital games or elements of digital games – e.g. in the form of "serious games" or as part of "gamification." These sectors include, among others, education and training, teaching, material design, advertising and marketing, film and television production, press, visual arts and muse-ums, automotive, telecommunications, aviation, and aerospace. Furthermore, they should be prepared for self-employment and creating their own business startups.

In view of the dynamic development of audio-visual media in the process of digitization in general and the rapid development of the games industry in particular, graduates have the necessary knowledge of media history and media theory as well as sound artistic knowledge and perspectives to not only serve the status quo of this industry, but also creatively shape it for the future.

Graduates of the MA Digital Games are also trained and suitable (to a far greater extent than graduates of undergraduate Game programs) for management and leadership tasks as well as for the role as founders and entrepreneurs.
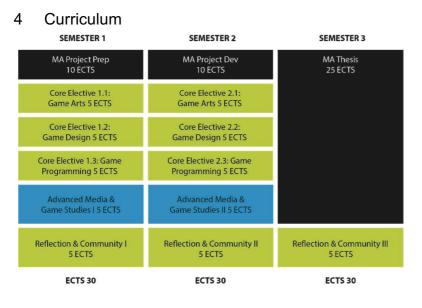
Finally, the graduates are well-rounded artistic-academic personalities who are not only capable of practical media work in the field of digital games and other gamified applications, both nationally and internationally, but also of further artistic-academic research and teaching, especially doctoral studies, in fields such as Game Design, Game Studies, Media Studies, Informatics, Fine Arts etc. As a consequence, further professional fields open up, especially in the fields of education, media and cultural administration, in which the demand for digital games experts is continuously growing.

3   Fields of Activity

Developing Games: Graduates shape the defining medium of the 21st century. They create digital games, in different roles according to their specialization: in Game Arts, Game Design, and Game Programming. They work in interdisciplinary and international teams, as employees in development studios of different sizes and foci, as freelancers and entrepreneurs. They work on AAA games, indie games, art games, and educational games. Thereby, our graduates make significant contributions to artistic expression, popular entertainment, knowledge transfer, and opinion-making in digital culture.

Communicating Games: Graduates are producers and mediators of knowledge about the artistic and technical development as well as societal and cultural functions of games. They research and teach in the fields of Game Arts, Game Design, Game Programming, Sound Design for Games, Game Economics and Entrepreneurship, and Game Studies. This includes various forms of research and its communication and transfer: industry research in development studios, applied and basic research at universities, journalistic communication, consulting, multiplier activities in state and private institutions such as museums, galleries, libraries, and cultural offices. Teaching takes place at different levels: from industry-based further education to vocational schools, and to higher education. Thereby, our graduates contribute significantly to the social dissemination of media and games literacy.

Gamifying Experiences: Graduates help to adapt the methods, services, and products of older established areas of administration and production to the requirements of digital technology and digital culture. By applying their state-of-the-art game development knowledge and skills, particularly in the areas of motivation and feedback, to other fields, they participate in the ongoing effort to streamline and gamify procedures in public institutions and a variety of trades and industries as diverse as telecommunications and automotive, management and software development. Thereby, our graduates contribute significantly to making the advantages of digital work and workplace culture more accessible to a wider range of economic and social sectors.

4   Curriculum

SEMESTER 1	SEMESTER 2	SEMESTER 3
MA Project Prep 10 ECTS	MA Project Dev 10 ECTS	MA Thesis 25 ECTS
Core Elective 1.1: Game Arts 5 ECTS	Core Elective 2.1: Game Arts 5 ECTS	
Core Elective 1.2: Game Design 5 ECTS	Core Elective 2.2: Game Design 5 ECTS	
Core Elective 1.3: Game Programming 5 ECTS	Core Elective 2.3: Game Programming 5 ECTS	
Advanced Media & Game Studies I 5 ECTS	Advanced Media & Game Studies II 5 ECTS	
Reflection & Community I 5 ECTS	Reflection & Community II 5 ECTS	Reflection & Community III 5 ECTS
ECTS 30	ECTS 30	ECTS 30

5   Alternative Curriculum

[to be discussed on a single case basis]

6   Modules

6.1   MA Project Preparation

Module Code:	MA.001
Module Title:	MA Project Preparation
Type of Module:	Mandatory Module
ECTS Credits:	10 ECTS
Language:	English
Duration of Module:	16 Weeks
Recommended for Semester:	1
Frequency:	Annual
Person Responsible for this Module:	Prof. Nanette Kaulig
Lecturers:	Prof. Björn Bartholdy (Media Design), Prof. Bernd Diemer (Game Design), Prof. Dr. Sonia Fizek (Player Research), Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr. Emmanuel Guardiola (Game Design), Prof. Markus Hettlich (Game Informatics), Prof. Nanette Kaulig (3D Animation & CG Art for Games), Prof. Dr. Roland Klemke (Game Informatics), Prof. Dr. Cécile Le Prado (Sound Design for Games), Prof. Odile Limpach (Economics & Entrepreneurship for Games)
Learning Outcome:	Students are able to create a concept for a research and development project by iterating on various conceptual, artistic, and technological ideas from an integrated point of view; applying methods of project management; setting up, reviewing, and updating a game design document; looking beyond their individual specialization, focusing on the "big picture" in order to be prepared for the conceptualization of self-initiated, multi-month endeavors at the intersection of professional and academic practice.
Module Content:	The module "MA Project Preparation" offers students – individually or collaboratively – the opportunity to establish the basis for their master thesis. In exchange with peers and professors, students discuss strategies, experiment with, test, and prototype core elements of their MA Projects. These iterative processes will enable the participants to develop a distinct vision of their game and will help them define their project artistically as well as technologically. Depending on the specific topics and the development status of the different projects, students will solve basic conceptual problems such as narration, game mechanics, visual design, sound, and technology.
Teaching and Learning Methods:	Seminars
Assessment Method:	Homework or course work, documentation, presentation
Workload (30 h $\triangleq$ 1 ECTS credit):	300h
Contact hours:	16h
Self-study:	284h
Recommended Prerequisites:	None
Recommended Reading:	…
Use of the Module in Other Degree Programs:	--
Particularities:	--
Last update:	September 2020

6.2   Optional Core Elective Courses—Advanced Game Development 1: Game Arts

Module Code:	MA.002.1
Module Title:	Optional Core Elective Courses—Advanced Game Development 1: Game Arts
Type of Module:	Elective
ECTS Credits:	5 ECTS
Language:	English
Duration of Module:	16 Weeks
Recommended for Semester:	1
Frequency:	Annual
Person Responsible for this Module:	Prof. Björn Bartholdy, Prof. Nanette Kaulig
Lecturers:	Prof. Björn Bartholdy (Media Design), Prof. Nanette Kaulig (3D Animation & CG Art for Games), Prof. Dr. Cécile Le Prado (Sound Design for Games)
Learning Outcome:	Students are able to analyze and reflect upon the creation of game art elements in relation to the overall development process by - analyzing an existing game in regards to its aesthetic structure and relation to art and media (submodule "General Game Arts") - designing characters, environments, objects/props, interfaces, etc. (submodule "BA3 Game Arts") - analyzing and presenting specifically focused game art elements, e.g. player art and animation (submodule "Advanced Game Arts") - creating particular game elements within an existing game world (submodule "Advanced Game Arts") - experimenting advanced concepts for game sound track (submodule "Sound Design") - applying appropriate research and analytical skills for sound targets in MA projects (submodule "Sound Design") in order to be prepared for the conceptualization of a research and development project in the area of Game Arts.
Module Content:	1) General Game Arts: Design Critique – Analysis of an existing game in regards to its aesthetic structure and relation to art and media (Bartholdy) 2) Advanced Game Arts: Analysis of various specific Game Art elements (e.g. Playable Character or NPC Art and Animation) as well as practice in medium of choice (e.g. concept art/illustration, 2D/3D art and animation, interface) (Kaulig) **OR*** BA3 Game Arts: Creative Process – Visual Research, Idea Generation, Aesthetic Concept, Concept Art, Presentation (Bartholdy) 3) Sound Design: Advanced game soundtrack analysis methods (Le Prado) *Students without sufficient prior experience in Game Arts may replace "Advanced Game Arts" by "BA3 Games Arts". In this case, they cannot substitute the advanced course in their other core elective.
Teaching and Learning Methods:	Lectures, seminars, tutorials, practical exercises

Assessment Method:	Practical exercise, presentation, paper and/or oral exam
Workload (30 h ≙ 1 ECTS credit):	150h
Contact hours:	52,5
Self-study:	97,5
Recommended Prerequisites:	None
Recommended Reading:	…
Use of the Module in Other Degree Programs:	--
Particularities:	--
Last update:	September 2020

6.3   Optional Core Elective Courses—Advanced Game Development 1: Game Design

Module Code:	MA.002.2
Module Title:	Optional Core Elective Courses—Advanced Game Development 1: Game Design
Type of Module:	Elective
ECTS Credits:	5 ECTS
Language:	English
Duration of Module:	16 Weeks
Recommended for Semester:	1
Frequency:	Annual
Person Responsible for this Module:	Prof. Bernd Diemer, Prof. Dr. Emmanuel Guardiola
Lecturers:	Prof. Bernd Diemer (Game Design), Prof. Dr. Emmanuel Guardiola (Game Design), Prof. Dr. Cécile Le Prado (Sound Design for Games), Markus Wiemker (Game Design)
Learning Outcome:	Students are able to

- create complex systems for specific player types and social structures in player groups – by
  - observing and analyzing different player types and personas in competitive and cooperative games
  - understanding the motivations and behavior patterns of different player types
  - exploring mechanics that enforce or negate certain behaviors
  - applying the theories of complexity for analyzing and creating games
  - understanding what motivates different player types to play and how game mechanics can influence social standards, structures, interactions and norms.

- create a playful experience – by
  - designing out of their comfort zones
  - investigation of uncomfortable topics

- create a syllabus – by applying the learning outcome methodology

- create a level for a game – by, for instance, applying the rational level design methodology (submodule "BA3 Game Design")

- create different kinds of prototypes for a multiplayer game – by, for instance, taking into account relevant game design theories and relevant game mechanics (submodule "BA3 Game Design")

- ethically reflect on game design practices by discussing and applying current theories of ethics in design

- experimenting with advanced concepts for game sound track (submodule "Sound Design")
- applying appropriate research and analytical skills for sound targets in MA projects (submodule "Sound Design")

in order to be prepared for the conceptualization of a research and development project in the area of Game Design.

Module Content:	1) General Game Design: Social Structures in Player Groups, Complexity in Games, Designing out of the comfort zone, Ethics in Game Design, Teaching (Guardiola) 2) Advanced Game Design: Social Structures in Player Groups, Complexity in Games, Ethics in Game Design (Diemer) **OR*** BA3 Game Design: Level Design, Multiplayer Games, Player Types (Wiemker) 3) Sound Design: Advanced game soundtrack analyzing methods (Le Prado) *Students without sufficient prior experience in Game Design may replace "Advanced Game Design" by "BA3 Games Game Design". In this case, students cannot substitute the advanced course in their other core elective.
Teaching and Learning Methods:	Lecture, seminar, tutorial, practical exercises
Assessment Method:	Practical exercise, presentation, paper and/or oral exam
Workload (30 h ≙ 1 ECTS credit):	150h
Contact hours:	52,5
Self-study:	97,5
Recommended Prerequisites:	None
Recommended Reading:	…
Use of the Module in Other Degree Programs:	--
Particularities:	--
Last update:	September 2020

6.4 Optional Core Elective Courses—Advanced Game Development 1: Game Programming

Module Code:	MA.002.3
Module Title:	Optional Core Elective Courses—Advanced Game Development 1: Game Programming
Type of Module:	Elective
ECTS Credits:	5 ECTS
Language:	English
Duration of Module:	16 Weeks
Recommended for Semester:	1
Frequency:	Annual
Person Responsible for this Module:	Prof. Markus Hettlich, Prof. Dr. Roland Klemke
Lecturers:	Prof. Markus Hettlich (Game Informatics), Prof. Dr. Roland Klemke (Game Informatics), Prof. Dr. Cécile Le Prado (Sound Design for Games)
Learning Outcome:	Students are able to conceptualize and realize software architectures for complex digital games by selecting and applying appropriate algorithms and data structures; developing with advanced web technologies; developing with and for advanced computer architectures; designing a virtual sound map, sound characterization; experimenting advanced concepts for game soundtracks (submodule: "Sound Design"); applying appropriate research and analytical skills for sound targets in MA projects (submodule: "Sound Design") in order to be prepared for the conceptualization of a research and development project in the area of Game Programming.
Module Content:	1) General Game Programming: Browser-Based Games with Advanced Web Technologies (WebAssembly, WebGl...) 2) Advanced Game Programming: Parallel Computing, Network Computing, Script Language Development, Error Handling **OR*** BA3 Game Programming: algorithms and data structures for games 3) Sound Design: Advanced game soundtrack analyzing methods. *Students without sufficient prior experience in Game Programming may replace "Advanced Game Programming" by "BA3 Game Programming". In this case, they cannot substitute the advanced course in their other core elective.
Teaching and Learning Methods:	Lectures, seminars, tutorials, practical exercises
Assessment Method:	Practical exercise, presentation, paper, written exam and/or oral exam
Workload (30 h ≙ 1 ECTS credit):	150h
Contact hours:	52,5
Self-study:	97,5
Recommended Prerequisites:	None
Recommended Reading:	…

Use of the Module in Other Degree Programs:	--
Particularities:	--
Last update:	September 2020

6.5 Advanced Media & Game Studies 1

Module Code:	MA.003
Module Title:	Advanced Media & Game Studies 1
Type of Module:	Mandatory Module
ECTS Credits:	5 ECTS
Language:	English
Duration of Module:	16 Weeks
Recommended for Semester:	1
Frequency:	Annual
Person Responsible for this Module:	Prof. Dr. Gundolf S. Freyermuth
Lecturers:	Prof. Dr. Sonia Fizek (Player Research), Prof. Dr. Gundolf S. Freyermuth (Media & Game Studies), Prof. Odile Limpach (Economics & Entrepreneurship for Games), Dr. André Czauderna (Player Research)
Learning Outcome:	*Media & Game Studies* Students are enabled to evaluate central points of discussion in contemporary Media and Game Studies as well as problems and questions arising in the context of their MA projects from the perspectives of media history and theory, by • studying current research and theories of media and game studies as well as theories relating to their MA projects, • strengthening their ability to reflect and discuss their own creative work from the perspective of media and games history and theory, in order to be able to research and write original academic works, especially their upcoming MA theses, and creatively and intellectually enrich their creative and professional work. *Economics and Entrepreneurship* Students can analyze games in an economical context and apply strategies for positioning and marketing, by applying methods of project calculation, creating an economic strategy for their game projects, to be able to professionally market their future game projects. *Colloquium* Students can author original academic work, by practicing academic writing through the presentation of a research topic in the context of a game studies convention, in order to be able to author original academic work, especially their upcoming MA thesis, and participate in contemporary discussions in the field of game studies.
Module Content:	1) New points of discussion in contemporary media and game studies, for example transmedia theory, in particular the relation between games and movies (the "cinematization" of games, the "gamification" of movies) and the relation between me-

chanics and storytelling in digital games, etc.; player studies; "on-demand theory" – theoretical contemplation of questions and problems arising in the context of student MA projects (Media & Game Studies).

2) The students are proposed a structure for analyzing a game project from an economic perspective. They write and present a first iteration of a strategy for their game project from an economic perspective.

The students will gain insights into the structure of a project calculation and implement it to a game development project. The students will improve and strengthen their presentation skills by practicing and getting peers reviews (Economics & Entrepreneurship).

3) Presentation and discussion of the theoretical framework of student MA theses: conference presentation (Colloquium).

Teaching and Learning Methods:	Seminar, presentations, practical exercises
Assessment Method:	Written homework or course work (blog, wiki, paper), presentation
Workload (30 h ≙ 1 ECTS credit):	150h
Contact hours:	45h
Self-study:	105
Recommended Prerequisites:	--
Recommended Reading:	…
Use of the Module in Other Degree Programs:	--
Particularities:	--
Last update:	September 2020

6.6   Reflection & Community 1

Module Code:	MA.004
Module Title:	Reflection and Community 1
Type of Module:	Mandatory Module
ECTS Credits:	5 ECTS
Language:	English
Duration of Module:	16 Weeks
Recommended for Semester:	1
Frequency:	Annual
Person Responsible for this Module:	Prof. Dr. Björn Bartholdy, Prof. Dr. Gundolf S. Freyermuth
Lecturers:	Prof. Björn Bartholdy (Media Design), Prof. Bernd Diemer (Game Design), Prof. Dr. Sonia Fizek (Player Research), Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr. Emmanuel Guardiola (Game Design), Prof. Markus Hettlich (Game Informatics), Prof. Nanette Kaulig (3D Animation & CG Art for Games), Prof. Dr. Roland Klemke (Game Informatics), Prof. Dr. Cécile Le Prado (Sound Design for Games), Prof. Odile Limpach (Economics & Entrepreneurship for Games)

Learning Outcome:	Students are able to analyze, create, and communicate knowledge, i.e. actively contribute to the interdisciplinary academic and professional community of game developers by critically reflecting on their own creative work and roles as artists, designers, and programmers (through individual and group mentoring from professors in their specialization); analyzing diverse perspectives from theoreticians and practitioners in the field of game development and research; teaching in the BA Digital Games track and/or contributing to research and development projects in order to be prepared to take over roles in education and research.
Module Content:	1) Individual and group mentoring with a focus on academic, artistic, and professional development. 2) Game Lab Lectures: 10 to 12 guest lectures offering a variety of perspectives from both game development and game studies. 3) Teaching & Research Practice: Students work as research assistants in CGL's research projects or as teaching assistants in CGL's Bachelor program – of course, with guidance from their professors.
Teaching and Learning Methods:	Lectures, individual and group mentoring
Assessment Method:	--
Workload (30 h ≙ 1 ECTS credit):	150h
Contact hours:	65h
Self-study:	85h
Recommended Prerequisites:	--
Recommended Reading:	…
Use of the Module in Other Degree Programs:	The Game Lab Lectures are open to all CGL students, whereas the other elements of the module are exclusively offered to MA Digital Games students.
Particularities:	A general introduction to the Reflection & Community-Modules (including information on the procedures of Mentoring and Teaching & Research Practice) will be provided at the beginning of the first semester. The schedule of the Game Lab Lectures will be announced at the beginning of each semester.
Last update:	September 2020

6.7   MA Project Development

Module Code:	MA.005
Module Title:	MA Project Development
Type of Module:	Mandatory Module
ECTS Credits:	10 ECTS
Language:	English
Duration of Module:	16 Weeks
Recommended for Semester:	2
Frequency:	Annual
Person Responsible for this	Prof. Dr. Roland Klemke

Module:	
Lecturers:	Prof. Björn Bartholdy (Media Design), Prof. Bernd Diemer (Game Design), Prof. Dr. Sonia Fizek (Player Research), Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr. Emmanuel Guardiola (Game Design), Prof. Markus Hettlich (Game Informatics), Prof. Nanette Kaulig (3D Animation & CG Art for Games), Prof. Dr. Roland Klemke (Game Informatics), Prof. Dr. Cécile Le Prado (Sound Design for Games), Prof. Odile Limpach (Economics & Entrepreneurship for Games)
Learning Outcome:	Students are able to prototype, criticize, and iterate their concept for the MA research and development project by revisiting the prototyping process with a focus on their project; analyzing how their individual specialization participates in the prototyping process; applying a (creative) management point of view; using methods of play-testing; integrating play-testing into the iterative process of game development; reflecting on their own artistic/technological ideas and concepts in light of academic perspectives in general and their own research in particular in order to be prepared for the conceptualization, critical analysis, and iteration of self-initiated multi-month endeavors at the intersection of professional and academic practice.
Module Content:	In the module "MA Project Development", students use their results and insights gained in the module "MA Project Preparation" to further develop and prototype their MA projects. Expertise from the fields of game arts, game design, and game programming is utilized to create playable prototypes. Through play-testing, students collect user feedback concerning the quality of the content, the audiovisual design, and the usability and playability. This player-centric approach improves the prototype through several iterations and leads to a more refined and detailed concept that forms the basis for the research proposal of the Master Thesis, which must be submitted by the end of the term.
Teaching and Learning Methods:	Seminars
Assessment Method:	Homework or course work, documentation, presentation
Workload (30 h ≙ 1 ECTS credit):	300h
Contact hours:	16h
Self-study:	284
Recommended Prerequisites:	--
Recommended Reading:	…
Use of the Module in Other Degree Programs:	--
Particularities:	--
Last update:	September 2020

6.8   Optional Core Elective Courses—Advanced Game Development 2: Game Arts

Module Code:	MA.006.1
Module Title:	Optional Core Elective Courses—Advanced Game Development 2: Game Arts
Type of Module:	Elective
ECTS Credits:	5 ECTS
Language:	English
Duration of Module:	16 Weeks
Recommended for Semester:	2
Frequency:	Annual

Person Responsible for this Module:	Prof. Björn Bartholdy, Prof. Nanette Kaulig
Lecturers:	Prof. Björn Bartholdy (Media Design), Prof. Nanette Kaulig (3D Animation & CG Art for Games), Prof. Dr. Cécile Le Prado (Sound Design for Games)
Learning Outcome:	Students are able to analyze and reflect upon the creation of game art elements in relation to the overall development process by • analyzing and reflecting on the artistic approach of their MA project (submodule "General Game Arts") • designing characters, environments, objects/props, interfaces etc. (submodule "BA4 Game Arts") • analyzing and presenting specifically focused game art elements, e.g. cinematic and interactive cutscenes (submodule "Advanced Game Arts") • creating particular game elements within an existing game world (submodule "Advanced Game Arts") • discussing sound design of contemporary game projects and research in relation to students MA projects (submodule "Sound Design") • analyzing and choosing appropriate methods and tools for sound design in relation to students MA development projects (submodule "Sound Design") in order to be prepared for the realization of a research and development project in the area of Game Arts.
Module Content:	1) General Game Arts: Design Critique – Analysis and Reflection of the artistic approach of the students´ MA project (Bartholdy) 2) Advanced Game Arts: Analysis of various specific Game Art elements (e.g. cinematic and interactive cutscenes) as well as practice in medium of choice (e.g. concept art/illustration, 2D/3D art and animation, interface) (Kaulig) **OR*** BA4 Game Arts: Creative Process – Visual Research, Idea Generation, Aesthetic Concept, Concept Art, Presentation (Bartholdy) 3) Sound Design: presentation of research topics and publication of advanced audio design documentation and prototype. (Le Prado) *Students without sufficient prior experience in Game Arts may replace "Advanced Game Arts" by "BA4 Game Arts". In this case, they cannot substitute the advanced course in their other core elective.
Teaching and Learning Methods:	Lectures, seminars, tutorials, practical exercises
Assessment Method:	Practical exercise, presentation, paper and/or oral exam
Workload (30 h ≙ 1 ECTS credit):	150h
Contact hours:	52,5
Self-study:	97,5
Recommended Prerequisites:	--
Recommended Reading:	…
Use of the Module in Other Degree Programs:	--

Particularities:	--
Last update:	September 2020

6.9 Optional Core Elective Courses—Advanced Game Development 2: Game Design

Module Code:	MA.006.2
Module Title:	Optional Core Elective Courses—Advanced Game Development 2: Game Design
Type of Module:	Elective
ECTS Credits:	5 ECTS
Language:	English
Duration of Module:	16 Weeks
Recommended for Semester:	2
Frequency:	Annual
Person Responsible for this Module:	Prof. Bernd Diemer, Prof. Dr. Emmanuel Guardiola
Lecturers:	Prof. Bernd Diemer (Game Design), Prof. Dr. Emmanuel Guardiola (Game Design), Prof. Dr. Cécile Le Prado (Sound Design for Games), Markus Wiemker (Game Design)
Learning Outcome:	Students are able to

- write a screenplay/script – by using frameworks and methodologies from narrative design (submodule "General Game Design")
- adapt their creative competencies to new or rare video game genres – by challenging their capability to analyze and to create a concept in the framework of this new genre (submodule "General Game Design")
- apply designs based on new trends in the industry to increase the scope of their game design creative tools – by analyzing and creating game concepts (submodule "Advanced Game Design")
- employ means to realize an intention by identifying the mise-en-scene, i.e. the articulation between intention and means, e.g. signs and feedback, camera, genre, theme-specific mechanics (submodule "BA4 Game Design")
- keep up with changing player expectations and spot opportunities to innovate within their games by:
  - researching macro and micro trends and their impact on player motivations (submodules "General Game Design" and "Advanced Game Design")
  - investigating patterns in consumer culture driving shifts in player sentiment, behavior, and expectation (submodule "Advanced Game Design")
  - researching trends by observing signals across culture (submodule "Advanced Game Design")
  - using a selected trend to imagine a new variation of a game (submodule "General Game Design")
  - sharing and discussing initial analyses on how best to leverage this trend (submodules "General Game Design" and "Advanced Game Design")
  - creating a game that helps or hinders a certain sentiment, behavior, and expectation (submodules "General Game Design", "Advanced Game Design" and "BA4

Game Design")

- discussing sound design of contemporary game projects and research in relation to students MA projects (submodule "Sound Design")

- analyzing and choosing appropriate methods and tools for sound design in relation to students MA development projects (submodule "Sound Design")

in order to be prepared for the realization of a research and development project in the area of Game Design.

Module Content:	1) General Game Design: a. Explore mechanics that enforce or negate a certain sentiment, behavior, or expectation b. Create a game that helps or hinders a certain sentiment, behavior, and expectation c. Screenplay practice 2) Advanced Game Design: a. Observe and analyze different player types and personas in competitive and coopera-tive games. b. Understand the motivations and behavior patterns of different player types c. Explore mechanics that enforce or negate a certain sentiment, behavior, and expecta-tion d. Create a game that helps or hinders a certain sentiment, behavior, and expectation. e. New trends in game design **Or*** BA4 Game Design*: a. Analyze, understand, and apply core principles of experimental games b. Create an experimental game based on modifying an assigned trend, genre, mechan-ic, and theme c. Advanced mise-en-scène 3) Sound Design: presentation of research topics and publication of advanced audio design documentation and prototype *Students without sufficient prior experience in Game Design may replace "Advanced Game Design" by "BA4 Game Design". In this case, they cannot substitute the advanced course in their other core elective.
Teaching and Learning Methods:	Lecture, seminar, tutorial, practical exercises
Assessment Method:	Practical exercise, presentation, paper and/or oral exam
Workload (30 h ≙ 1 ECTS credit):	150h
Contact hours:	52,5
Self-study:	97,5
Recommended Prerequisites:	--
Recommended Reading:	…
Use of the Module in Other Degree Programs:	--
Particularities:	--

Last update:	September 2020

6.10 Optional Core Elective Courses—Advanced Game Development 2: Game Programming

Module Code:	MA.006.3
Module Title:	Optional Core Elective Courses—Advanced Game Development 2: Game Programming
Type of Module:	Elective
ECTS Credits:	5 ECTS
Language:	English
Duration of Module:	16 Weeks
Recommended for Semester:	2
Frequency:	Annual
Person Responsible for this Module:	Prof. Markus Hettlich, Prof. Dr. Roland Klemke
Lecturers:	Prof. Markus Hettlich (Game Informatics), Prof. Dr. Roland Klemke (Game Informatics), Prof. Dr. Cécile Le Prado (Sound Design for Games)
Learning Outcome:	Students are able to conceptualize and realize software architectures for complex digital games by • designing and implementing database patterns • developing and adapting physical simulations for games • understanding and applying state-of-the-art principles of artificial intelligence • discussing sound design of contemporary game projects and research in relation to students MA projects (submodule "Sound Design") • analyzing and choosing appropriate methods and tools for sound design in relation to students MA development projects (submodule "Sound Design") in order to be prepared for the realization of a research and development project in the area of Game Programming.
Module Content:	1) General Game Programming: Physics for Games 2) Advanced Game Programming: Artificial Intelligence (Player Modelling, Procedural Generation, Automatic Gameplay, Neural Networks, Machine Learning) **OR*** BA4 Game Programming: Databases (overview, introduction to SQL and noSQL) & Cloud Computing 3) Sound Design: presentation of research topics and publication of advanced audio design documentation and prototype *Students without sufficient prior experience in Game Programming may replace "Advanced Game Programming" by "BA4 Game Programming". In this case, they cannot substitute the advanced course in their other core elective.
Teaching and Learning Methods:	Lectures, Seminars, Tutorials, Practical Exercises
Assessment Method:	Practical exercise, presentation, paper, written exam and/or oral exam
Workload (30 h ≙ 1 ECTS credit):	150h

Contact hours:	52,5
Self-study:	97,5
Recommended Prerequisites:	--
Recommended Reading:	…
Use of the Module in Other Degree Programs:	--
Particularities:	--
Last update:	September 2020

6.11 Advanced Media & Game Studies 2

Module Code:	MA.007
Module Title:	Advanced Media & Game Studies 2
Type of Module:	Mandatory Module
ECTS Credits:	5 ECTS
Language:	English
Duration of Module:	16 Weeks
Recommended for Semester:	2
Frequency:	Annual
Person Responsible for this Module:	Prof. Dr. Gundolf S. Freyermuth
Lecturers:	Prof. Dr. Sonia Fizek (Player Research), Prof. Dr. Gundolf S. Freyermuth (Media & Game Studies), Prof. Odile Limpach (Economics & Entrepreneurship for Games), Dr. André Czauderna (Player Research)
Learning Outcome:	*Media & Game Studies* Students are enabled to evaluate central points of discussion in contemporary Media and Game Studies as well as problems and questions arising in the context of their MA projects from the perspectives of media history and theory, by • studying current research and theories of media and game studies as well as theories relating to their MA projects, • strengthening their ability to reflect and discuss their own creative work from the perspective of media and games history and theory, in order to research and write original academic works, especially their upcoming MA theses, and creatively and intellectually enrich their creative and professional work. *Economics & Entrepreneurship* The students can evaluate financing possibilities of a game project and company, and can create original pitches for game projects, by reflecting on the pros and cons of self- publishing or partnering with a publisher, analyzing pitching, development and marketing methodologies, strengthening presentation skills by practicing and receiving peer reviews to be able to effectively pitch and market their future game project. *Colloquium* The students can author original academic work, by translating their previous research topic

and presentation into an academic paper, familiarizing themselves with the process of academic publishing, in order to be able to author original academic work, especially their upcoming MA thesis, and participate in contemporary discussions in the field of game studies.

Module Content:	1) New points of discussion in contemporary media and game studies, for example the schisms between game studies and game design theory or between approaches to game studies borrowed from the social sciences and those borrowed from the humanities; player studies; "on-demand theory" – theoretical reflection of questions and problems arising in the context of student MA projects (Media & Game Studies). 2) Students discuss the definition of publishing for games and the related activities. They reflect on the necessity of publishing partnerships and the best approach to pitch their game projects. Students are introduced to the structure of financing for projects and companies in the gaming market (Economics & Entrepreneurship). 3) Presentation and discussion of the theoretical framework of student MA theses: academic paper (Colloquium).
Teaching and Learning Methods:	Seminar, presentations, practical exercises
Assessment Method:	Written homework or course work (blog, wiki, paper), presentation
Workload (30 h ≙ 1 ECTS credit):	150h
Contact hours:	45h
Self-study:	105h
Recommended Prerequisites:	--
Recommended Reading:	…
Use of the Module in Other Degree Programs:	--
Particularities:	--
Last update:	September 2020

6.12 Reflection & Community 2

Module Code:	MA.008
Module Title:	Reflection & Community 2
Type of Module:	Mandatory Module
ECTS Credits:	5 ECTS
Language:	English
Duration of Module:	16 Weeks
Recommended for Semester:	2
Frequency:	Annual
Person Responsible for this Module:	Prof. Björn Bartholdy, Prof. Dr. Gundolf S. Freyermuth
Lecturers:	Prof. Björn Bartholdy (Media Design), Prof. Bernd Diemer (Game Design), Prof. Dr. Sonia

	Fizek (Player Research), Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr. Emmanuel Guardiola (Game Design), Prof. Markus Hettlich (Game Informatics), Prof. Nanette Kaulig (3D Animation & CG Art for Games), Prof. Dr. Roland Klemke (Game Informatics), Prof. Dr. Cécile Le Prado (Sound Design for Games), Prof. Odile Limpach (Economics & Entrepreneurship for Games)
Learning Outcome:	Students are able to analyze, create, and communicate knowledge, i.e. actively contribute to the interdisciplinary academic and professional community of game developers by critically reflecting on their own creative work and roles as artists, designers, and programmers (through individual and group mentoring from professors in their specialization); analyzing diverse perspectives from theoreticians and practitioners in the field of game development and research; teaching in the BA Digital Games track and/or contributing to research and development projects in order to be prepared to take over roles in education and research.
Module Content:	1) Individual and group mentoring with a focus on academic, artistic, and professional development. 2) Game Lab Lectures: 10 to 12 guest lectures offering a variety of perspectives from both game development and game studies. 3) Teaching & Research Practice: Students work as research assistants in CGL's research projects or as teaching assistants in CGL's Bachelor program – of course with guidance from their professors.
Teaching and Learning Methods:	Lectures, individual and group mentoring
Assessment Method:	--
Workload (30 h ≙ 1 ECTS credit):	150h
Contact hours:	65h
Self-study:	85h
Recommended Prerequisites:	--
Recommended Reading:	…
Use of the Module in Other Degree Programs:	The Game Lab Lectures are open to all CGL students, whereas the other elements of the module are exclusively offered to MA Digital Games students.
Particularities:	The schedule of the Game Lab Lectures will be announced at the beginning of each semester.
Last update:	September 2020

6.13 MA Thesis

Module Code:	MA.009
Module Title:	MA Thesis
Type of Module:	Mandatory Module
ECTS Credits:	25 ECTS
Language:	English
Duration of Module:	16 Weeks
Recommended for Semester:	3

Frequency:	Every Semester
Person Responsible for this Module:	Prof. Björn Bartholdy, Prof. Dr. Gundolf S. Freyermuth
Lecturers:	Prof. Björn Bartholdy (Media Design), Prof. Bernd Diemer (Game Design), Prof. Dr. Sonia Fizek (Player Research), Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr. Emmanuel Guardiola (Game Design), Prof. Markus Hettlich (Game Informatics), Prof. Nanette Kaulig (3D Animation & CG Art for Games), Prof. Dr. Roland Klemke (Game Informatics), Prof. Dr. Cécile Le Prado (Sound Design for Games), Prof. Odile Limpach (Economics & Entrepreneurship for Games)
Learning Outcome:	Students are able to create a game as well as a thesis at postgraduate level, by • conceptualizing and realizing a comprehensive development and research project – individually and/or collaboratively; • applying advanced methods of project management; • discussing artistic artifacts and/or academic research; • defending as well as critically evaluating their own work; • criticizing the creative and academic work of others, in order to develop the ability to later conceptualize, analyze, and realize further self-initiated multi-month endeavors at the intersection of professional and academic practice.
Module Content:	1) This semester concludes the development and/or research activities which started with modules "MA Project Preparation" (semester 1) and "MA Project Development" (semester 2). Individually and/or collaboratively, students realize their Master projects, i.e., they create prototypes of digital games or other nonlinear audiovisual works as well as they pursue empirical or theoretical research, i.e. write their individual MA theses. The weight of both parts is suggested by the student (and confirmed by the supervisor and examination board). The smaller part must be at least 20 % of the overall workload. The ratio students decide upon will dictate how the project & thesis is graded. 2) The MA Colloquium offers the students a platform to discuss their work in a group of peers as well as to get constant feedback from their supervisors. 3) The module is concluded by a presentation (in front of the whole CGL community) as well as a Thesis defense with CGL faculty.
Teaching and Learning Methods:	Mentoring, discussion, presentation
Assessment Method:	Thesis, prototype, presentation, defense
Workload (30 h ≙ 1 ECTS credit):	750h
Contact hours:	60h
Self-study:	690h
Recommended Prerequisites:	
Recommended Reading:	…
Use of the Module in Other Degree Programs:	--
Particularities:	--
Last update:	September 2020

6.14   Reflection & Community 3

Module Code:	MA.010
Module Title:	Reflection & Community 3
Type of Module:	Mandatory Module
ECTS Credits:	5 ECTS
Language:	English
Duration of Module:	16 Weeks
Recommended for Semester:	3
Frequency:	Annual
Person Responsible for this Module:	Prof. Björn Bartholdy
Lecturers:	Prof. Björn Bartholdy (Media Design), Prof. Bernd Diemer (Game Design), Prof. Dr. Sonia Fizek (Player Research), Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr. Emmanuel Guardiola (Game Design), Prof. Markus Hettlich (Game Informatics), Prof. Nanette Kaulig (3D Animation & CG Art for Games), Prof. Dr. Roland Klemke (Game Informatics), Prof. Dr. Cécile Le Prado (Sound Design for Games), Prof. Odile Limpach (Economics & Entrepreneurship for Games)
Learning Outcome:	Students are able to analyze, create, and communicate knowledge, i.e. actively contribute to the interdisciplinary academic and professional community of game developers by critically reflecting on their own creative work and roles as artists, designers, and programmers (through individual and group mentoring from professors in their specialization); analyzing diverse perspectives from theoreticians and practitioners in the field of game development and research; teaching in the BA Digital Games track and/or contributing to research and development projects in order to be prepared to take over roles in education and research.
Module Content:	1) Individual and group mentoring with a focus on academic, artistic, and professional development. 2) Game Lab Lectures: 10 to 12 guest lectures offering a variety of perspectives from both game development and game studies. 3) Teaching & Research Practice: Students work as research assistants in CGL's research projects or as teaching assistants in CGL's Bachelor program – of course with guidance from their professors.
Teaching and Learning Methods:	Lectures, Individual and Group Mentoring
Assessment Method:	--
Workload (30 h ≙ 1 ECTS credit):	150h
Contact hours:	65h
Self-study:	85h
Recommended Prerequisites:	--
Recommended Reading:	…
Use of the Module in Other Degree Programs:	The Game Lab Lectures are open to all CGL students, whereas the other elements of the module are exclusively offered to MA Digital Games students.

Particularities:	The schedule of the Game Lab Lectures will be announced at the beginning of each semester.
Last update:	September 2020