MODULE HANDBOOK

BA DIGITAL GAMES
<table>
<thead>
<tr>
<th>Semester</th>
<th>Courses</th>
</tr>
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<tbody>
<tr>
<td><strong>Semester 1</strong></td>
<td>30 ECTS</td>
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<tr>
<td>Basic Media &amp; Game Studies 1 (5 ECTS)</td>
<td>Game Arts  (10 ECTS)</td>
</tr>
<tr>
<td>Game Design  (10 ECTS)</td>
<td>Game Programming  (10 ECTS)</td>
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<td>Reflection &amp; Community 1 (5 ECTS)</td>
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<td><strong>Semester 2</strong></td>
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<td>Game Programming  (6 ECTS)</td>
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GAME DEVELOPMENT BASICS 1

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Courses
1) Game Arts I
2) Game Design I
3) Game Programming I
4) Sound Design I

<table>
<thead>
<tr>
<th>Contact Hours</th>
<th>Self-Study</th>
<th>Size of Groups</th>
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</table>

| 35 h          | 55 h       | 35-40         |
| 35 h          | 55 h       | 35-40         |
| 35 h          | 55 h       | 35-40         |
| 10 h          | 20 h       | 35-40         |

Learning Outcomes / Competencies

1) In the field of “Game Arts,” Basic Art and Design Theory will be introduced to the students. On successful completion of this sub module students will be able:
   • to understand and apply basic principles of Visual Design;
   • to demonstrate theoretical and practical knowledge in the field of 2D Animation.

2) In the field of “Game Design,” students will be introduced to the principles and basic practices of game design. On successful completion of this sub module students will be able:
   • to identify and apply fundamental principles and elements of game design, specifically gameplay, prototyping, iteration;
   • to demonstrate basic knowledge of game design theories;
   • to analyze digital games with regard to their genre, fundamental structures, aesthetics and game design principles.

3) In the field of “Game Programming,” on successful completion of this sub module students will be able:
   • to demonstrate basic knowledge of the binary system, digital technologies, terminology;
   • to understand the concepts of interpreter, compiler, intermediate languages and just in time compiler;
   • to understand the syntax, semantic and control flow of a programming language;
   • to program and to understand numerous game mechanics at a basic level by using e.g. Javascript.

4) In the field of “Sound Design,” students will be able to demonstrate fundamental theoretical and practical knowledge of Sound Design upon successful completion of this sub module.

All students will gain knowledge and competencies of their own field as well as of the fields they have not specialized in. Furthermore, students will strengthen their ability to organize their own studies as well as improve their abilities to document and present projects in a professional setting.

Module Content

1) Game Arts:
   • Visual Design Basics I – for Example: Typography, Format, Color, GUI;
   • Animation Basics I - 2D Animation.

2) Game Design:
   • Introduction to the principles of design, software design and game design (inter alia prototyping, iteration, MDA, tetrad); introduction to methods of analog and digital prototyping and practical exercises (for example, through board game prototyping);
   • Introduction to mechanics; classics of game design theory: reading and discussion (for example Jesse Schell, *The Art of Game Design* or Tracy Fullerton, *Game Design Workshop*);
   • Milestones of fundamental game genres (for example FPS); analyses of just released games.
3) Game Programming:
   - Programming Basics I - fundamentals, programming technologies, programming languages, e.g. Javascript or Unity3D.
4) Sound Design:
   - Sound Design I – Fundamentals: Perception, Acoustics, Linear editing, Audiovisual relations.

**Teaching Methods**
Seminars, Tutorials

**Prerequisite Subjects**
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**Assessment Methods**
Homework or course work, documentation, presentation, practical exercises in all courses of the module (weighted proportionally)

**Prerequisites for CP**
Active participation, documentation (digital), presentation

**Used in Other Courses**
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**Significance of Module Grade for Final Grade**
0%

**Module Director(s) and Module Instructor(s)**
Module Director(s): Prof. Björn Bartholdy
Module Instructor(s): Prof. Björn Bartholdy (Media Design), Prof. Bernd Diemer (Game Design), Prof. Dr. Emmanuel Guardiola (Game Design), Prof. Markus Hettlich (Game Informatics), Prof. Nanette Kaulig (3D Animation & CG Art for Games), Prof. Dr. Cécile Le Prado (Sound Design for Games)

**Other Information**
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BASIC MEDIA AND GAME STUDIES 1

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Courses
1) Introduction to Media and Game Studies
2) History and Theory of Analog and Digital Games
3) History and Structure of the Games Industry

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<th>Courses</th>
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<th>Self-Study</th>
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<tr>
<td>2) History and Theory of Analog and Digital Games</td>
<td>22 h</td>
<td>60 h</td>
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<td>3) History and Structure of the Games Industry</td>
<td>8 h</td>
<td>22 h</td>
<td>35-40</td>
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Learning Outcomes / Competencies
The module will introduce the students to the basic principles of scholarly work and specifically to Media Studies and will encourage them to adopt an historical view and critical approach towards digital games.

1) On successful completion of parts one and two of this module students will be able to:
   • command the basic techniques of academic work;
   • apply different approaches to media and game studies;
   • demonstrate knowledge of different approaches to media and game studies;
   • demonstrate knowledge of the history and theories of analog and digital games;
   • reflect and discuss digital games from the perspective of media history and theory.

2) On successful completion of part three of this module students will be able to:
   • demonstrate knowledge of the history and structure of the games industry;
   • reflect and discuss digital games from the perspective of media economy;
   • demonstrate knowledge of basic marketing concepts;
   • demonstrate analytical and communicative skills (both written and verbal);
   • demonstrate presentation skills.

Module Content
1) Approaches to Game Studies from humanities and social sciences; history of games: preindustrial games, industrial games; digital games: beginnings, narrative turn, audiovisual turn, etc.
2) History and theories of analog and digital games.
3) Historical and economic development of the American, European and German games industries; the globalization of the games industry, structures and structural changes of the games industry; definition of strategical marketing.

Teaching Methods
Lecture, Seminar, Presentation

Prerequisite Subjects
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Assessment Methods
Written homework or course work (blog, wiki, paper) or presentation; written test or oral exam in all courses of the module (weighted proportionally)

Prerequisites for CP
Active participation, completion of homework or course work
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<td><strong>Significance of Module Grade for Final Grade</strong></td>
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<td><strong>Module Director(s) and Module Instructor(s)</strong></td>
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<td>Module Director(s): Prof. Gundolf S. Freyermuth</td>
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<tr>
<td>Module Instructor(s): Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr. Lisa Gotto (Media and Game Studies), Prof. Odile Limpach (Economics &amp; Entrepreneurship for Games), Dr. André Czauderna</td>
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COLLABORATIVE PROJECT 1 (LUDIC GAMES)

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Courses
1) Seminar Project Management
2) Project “Ludic Games”

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<tr>
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<tr>
<td>30 h</td>
<td>240 h</td>
<td>35-40</td>
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Learning Outcomes / Competencies
On successful completion of this module students will be able to:
• recall basic aspects of project management and apply those to the development process;
• recall knowledge on the game development process – from conception (pitching) and design to production, post-production and presentation;
• develop and apply ludic patterns during the game design and development processes as well as generate artwork and establish fundamental programming schemas;
• generate project documentation.
Furthermore, students will develop their team skills and learn how to find their specific position in the team through collaborative assignments/projects.

Module Content
1) Project Management:
• initiation, planning and design;
• execution and construction;
• monitoring and controlling methods;
• completion.
2) Theme “Ludic Games”:
• Preproduction: high concept, pitching, concept, concept art, game design document, prototyping, testing;
• Production: game design, game arts (character & world design, animation, interface, audio design), programming/game informatics, level design;
• Postproduction: documentation, post-mortem, publication, external pitching/communication.

Teaching Methods
Seminar, Project

Prerequisite Subjects
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Assessment Methods
Prototype, documentation, presentation

Prerequisites for CP
Prototype, documentation, presentation

Used in Other Courses
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Significance of Module Grade for Final Grade
7.69%
**Module Director(s) and Module Instructor(s)**

Module Director(s): Prof. Nanette Kaulig, Prof. Dr. Gundolf S. Freyermuth

Module Instructor(s): Prof. Björn Bartholdy (Media Design), Prof. Bernd Diemer (Game Design), Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr. Lisa Gotto (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. Cécile Le Prado (Sound Design for Games), Prof. Odile Limpach (Economics & Entrepreneurship for Games)

**Other Information**

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REFLECTION & COMMUNITY 1

<table>
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Courses

1) Individual and Group Mentoring
2) Game Lab Lectures
3) English for Game Developers
4) Work Groups
5) Profi² Week

Contact Hours | Self-Study | Size of Groups
15 h | 15 h | 1-15
20 h | 10 h | 150-200
15 h | 15 h | 35-40
10 h | 20 h | 3-15
15 h | 15 h | 15-30

Learning Outcomes / Competencies

On successful completion of this module students will have:

- deepened their identity and confidence as game artists, game designers, or game programmers through individual and group mentoring from professors in their area of specialization;
- broadened their horizons as well as attained key skills in areas such as self-reliance, organization, teamwork, and communication through lectures on theory and practice, interdisciplinary and inter-semester collaboration, as well as English classes.

Module Content

1) Individual and Group Mentoring: with a main focus on student artistic and professional development in their respective area of specialization (Game Arts, Game Design, or Game Programming).
2) Game Lab Lectures: 10 to 12 guest lectures offering a variety of perspectives from both game development and game studies.
3) English for Game Developers: Content is highly dependent on student needs and requirements in the first semester. Topics might include, among other things, technical English, academic and professional presentation, academic and creative writing.
4) Work Groups: In these self-organized groups, students contribute to CGL’s unique culture and community. Among others things, these groups support CGL’s endeavors in the areas of conferences, exhibitions, publishing, research, public relations, collecting and archiving of games and media, etc.
5) Profi² Week: Within the university wide Profi² Week students can choose an interdisciplinary and/or project-oriented course in or outside CGL.

Teaching Methods

Lectures, seminars, group work, individual and group mentoring

Prerequisite Subjects

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Assessment Methods

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Prerequisites for CP

Active Participation

Used in Other Courses
Parts of the module, i.e., the Game Lab Lectures, Work Groups and Profil² Courses are open to all CGL students. Mentoring and English are exclusively offered to BA Digital Games students.

<table>
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<th><strong>Significance of Module Grade for Final Grade</strong></th>
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**Module Director(s) and Module Instructor(s)**

Module Director(s): Prof. Björn Bartholdy
Module Instructor(s): Prof. Björn Bartholdy (Media Design), Prof. Bernd Diemer (Game Design), Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr. Lisa Gotto (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. Cécile Le Prado (Sound Design for Games), Prof. Odile Limpach (Economics & Entrepreneurship for Games)

**Other Information**

Be aware that Mentoring as well as English classes take place within the group of students in their first year of study, whereas Game Lab Lectures, Work Groups and Profil² Courses take place in inter-semester groups.

A general introduction to the Reflection & Community-Modules at CGL (including information on the procedures of Mentoring and Work Groups) will be provided at the beginning of the first semester.
GAME DEVELOPMENT BASICS 2

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Courses
1) Game Arts II
2) Game Design II
3) Game Programming II
4) Sound Design II

<table>
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<th>Contact Hours</th>
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<tr>
<td>3) Game Programming II</td>
<td>35 h</td>
<td>55 h</td>
<td>35-40</td>
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<tr>
<td>4) Sound Design II</td>
<td>10 h</td>
<td>20 h</td>
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Learning Outcomes / Competencies
1) In the field of “Game Arts,” Basic Art and Design Theory will be introduced to the students. On successful completion of this submodule students will:
   • have deepened their understanding and ability to apply basic principles of Visual Design;
   • have acquired theoretical and practical knowledge in the field of 3D Animation;
2) In the field of “Game Design,” students will be introduced to the principles, foundations and basic practices of game design. On successful completion of this submodule students will:
   • be able to identify and apply fundamental principles and elements of game design, specifically with regard to ludic and narrative game design and the creation and management of the game design document;
   • be able to complete an initial concept doc;
   • have acquired basic knowledge of game design theories, specifically with regard to literary and audiovisual storytelling and narrative game design;
   • be able to analyze digital games with regard to their genre, fundamental structures, aesthetics and game design principles.
3) In the field of “Game Programming,” on successful completion of this submodule students will:
   • have deepened their competencies in procedural and object-oriented programming by developing more complex game prototypes by using e.g. Javascript or Unity3D.
   • have been introduced to visual programming as an alternative to coding by using e.g. Playmaker or Unity3D.
4) In the field of “Sound Design,” students will expand their fundamental theoretical and practical knowledge of sound design.

Module Content
1) Game Arts:
   • Design Basics II - for Example: Branding, CD, CI, the Design Process, Design Critique;
   • Animation Basics II: 3D Animation;
2) Game Design:
   • basics of story and character design; creating the game design document; practical exercises
   • storytelling basics with creative writing exercises (inter alia hero’s journey); principles of literary & audiovisual storytelling with creative writing exercises (myth, novel, short story; drama, movie, game);
   • creation of a game design document;
• classics of Game Design Theory: Reading and Discussion (for example Salen/Zimmerman, *Rules of Play* or Brenda Braithwaite and Ian Schreiber, *Challenges for Game Designers*)
• analyses of brand new games;
• critical play – understanding games by playing them and reflecting on game play.

3) Game Programming:
• Programming Basics II: advanced programming, visual programming.

4) Sound Design:
• Sound Design II: Audio storytelling, field and studio recording, Audio interaction concepts.

**Teaching Methods**
Seminars, Tutorials

**Prerequisite Subjects**
BA.001 (The examination board decides on any exceptions.)

**Assessment Methods**
Homework or course work, documentation, presentation, practical exercises in all courses of the module (weighted proportionally)

**Prerequisites for CP**
Active participation, documentation (digital), presentation

**Used in Other Courses**
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**Significance of Module Grade for Final Grade**
0%

**Module Director(s) and Module Instructor(s)**
Module Director(s): Prof. Björn Bartholdy
Module Instructor(s): Prof. Björn Bartholdy (Media Design), Prof. Bernd Diemer (Game Design), Prof. Dr. Emmanuel Guardiola (Game Design), Prof. Markus Hettlich (Game Informatics), Prof. Nanette Kaulig (3D Animation & CG Art for Games), Prof. Dr. Cécile Le Prado (Sound Design for Games)

**Other Information**
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BASIC MEDIA AND GAME STUDIES 2

<table>
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<th>Semester</th>
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Courses
1) Introduction to the History and Theory of Analog Arts and Media in Modern Times
2) Narration in Linear Media
3) Introduction to Media Economy

Contact Hours | Self-Study | Size of Groups
-------------|------------|----------------|
22 h         | 60 h       | 35-40          |
11 h         | 27 h       | 35-40          |
8 h          | 22 h       | 35-40          |

Learning Outcomes / Competencies
The module will introduce the students to the aesthetic, cultural, technological and economic history of modern times, from the Renaissance to Postmodernity, and it will confront them with relevant aesthetic and economic theories that will help them to understand the process of Modernity.

1) On successful completion of parts one and two of this module students will:
   • have gained a basic knowledge of the history and theories of analog arts and media, specifically in regard to audiovisuality and narration;
   • demonstrate a basic ability to critically analyze and historically contextualize works of audiovisual art, specifically linear audiovisions;
   • have strengthened their ability to reflect and discuss cultural artifacts from the perspective of media history and theory.

2) On successful completion of part three of this module students will:
   • demonstrate a knowledge of the basic principles of media economics, specifically of communication theory, elements of microeconomics and media management;
   • have strengthened their ability to reflect and discuss digital games from the perspective of media economy;
   • have deepened their knowledge of marketing tools and market relevant analysis;
   • have strengthened their professional presentation skills.

Module Content
1) a) School of Seeing/Looking: History of analog arts and media – Renaissance to Postmodernity;
     b) Introduction to Media Studies: Theories of analog art and media (inter alia: Aristotle, Kant, Hegel, Marx, Freud, Benjamin, McLuhan); mechanical and industrial media; from theories of the arts to theories of media.

2) Theories and practices of narration in linear media (theater, novel, film, tv series, etc.).

3) Economics and communications basics: communication theory, microeconomics and media management.

Teaching Methods
Lecture, Seminar, Presentations, Practical Exercises

Prerequisite Subjects
BA.002 (The examination board decides on any exceptions.)

Assessment Methods
Written homework or course work (blog, wiki, paper), presentation, linear or nonlinear audiovisual work (theory clip, interactive installation, etc.); written test or oral exam in all courses of the module (weighted proportionally)

Prerequisites for CP
Active participation, completion of homework or course work
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<table>
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<th><strong>Significance of Module Grade for Final Grade</strong></th>
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<tr>
<td>Module Director(s): Prof. Dr. Gundolf S. Freyermuth;</td>
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<tr>
<td>Module Instructor(s): Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr. Lisa Gotto (Media and Game Studies), Prof. Odile Limpach (Economics &amp; Entrepreneurship for Games)</td>
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COLLABORATIVE PROJECT 2 (NARRATIVE GAMES)

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<th>Semester</th>
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<tr>
<td>BA.007</td>
<td>300 h</td>
<td>10 ECTS</td>
<td>2</td>
<td>Annual</td>
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Courses
1) Seminar Project Management
2) Project “Narrative Games”

Contact Hours | Self-Study | Size of Groups
-------------|------------|----------------|
10 h         | 20 h       | 35-40
30 h         | 240 h      | 35-40

Learning Outcomes / Competencies
On successful completion of this module students will:
1) be able to recall different approaches to project management, to PM Software and to the needs of stakeholders, as well as the basics of cost management.
2) be able to apply techniques of project management in the practice of a collaborative project.
3) have acquired knowledge on the game development process – from conception (pitching) and design to production, post-production and presentation.

Furthermore, students will be able:
- to develop and implement non-linear narrative (game) structures;
- to write and adapt fictional and documentary content;
- to recall and implement knowledge of project documentation and presentation.

The collaborative structure of the project will strengthen student ability to exercise responsibilities in group work processes.

Module Content
1) Project Management: project management methods, project management software, relationships/communication with stakeholders, cost management.
2) Theme “Narrative Games”:
   - Preproduction: high concept, pitching, concept, concept art, game design documentation, prototyping, testing;
   - Production: game design, game arts (character & world design, animation, interface, audio design), programming/game informatics, level design;
   - Postproduction: documentation, post-mortem, publication, external pitching/communication.

Teaching Methods
Seminar, Project

Prerequisite Subjects
---

Assessment Methods
Prototype, documentation, presentation

Prerequisites for CP
Prototype, documentation, presentation

Used in Other Courses
---

Significance of Module Grade for Final Grade
7.69%
Module Director(s) and Module Instructor(s)

Module Director(s): Prof. Bernd Diemer, Prof. Dr. Gundolf S. Freyermuth
Module Instructor(s): Prof. Björn Bartholdy (Media Design), Prof. Bernd Diemer (Game Design), Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr. Lisa Gotto (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. Cécile Le Prado (Sound Design for Games), Prof. Odile Limpach (Economics & Entrepreneurship for Games)

Other Information
---
REFLECTION & COMMUNITY 2

<table>
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Courses
- 1) Individual and Group Mentoring
- 2) Game Lab Lectures
- 3) English for Game Developers
- 4) Work Groups
- 5) Profi² Week

Contact Hours | Self-Study | Size of Groups
---           | ---        | ---
15 h         | 15 h       | 1-15
20 h         | 10 h       | 150-200
15 h         | 15 h       | 35-40
10 h         | 20 h       | 3-15
15 h         | 15 h       | 15-30

Learning Outcomes / Competencies
On successful completion of this module students will have:
- deepened their identity and confidence as game artists, game designers, or game programmers through individual and group mentoring from professors in their area of specialization;
- broadened their horizons as well as attained key skills in areas such as self-reliance, organization, teamwork, and communication through lectures on theory and practice, interdisciplinary and inter-semester collaboration, as well as English classes.

Module Content
1) Individual and Group Mentoring: with a main focus on student artistic and professional development in their respective area of specialization (Game Arts, Game Design, or Game Programming).
2) Game Lab Lectures: 10 to 12 guest lectures offering a variety of perspectives from both game development and game studies.
3) English for Game Developers: Content is highly dependent on students needs and requirements in the second semester. Topics might include, among other things, technical English, academic and professional presentation, academic and creative writing.
4) Work Groups: In these self-organized groups, students contribute to CGL’s unique culture and community. Among others things, these groups support CGL’s endeavors in the areas of conferences, exhibitions, publishing, research, public relations, collecting and archiving of games and media, etc.
5) Profi² Week: Within the university wide Profi² Week students can choose an interdisciplinary and/or project-oriented course in or outside CGL.

Teaching Methods
Lectures, Seminars, group work, individual and group mentoring

Prerequisite Subjects
---

Assessment Methods
---

Prerequisites for CP
Active Participation

Used in Other Courses
Parts of the module, i.e., the Game Lab Lectures, Work Groups and Profi² Courses are open to all CGL students. Mentoring and English are exclusively offered to BA Digital Games students.

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<thead>
<tr>
<th>Significance of Module Grade for Final Grade</th>
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<tr>
<td>Module Director(s) and Module Instructor(s)</td>
<td></td>
</tr>
<tr>
<td>Module Director(s): Prof. Björn Bartholdy</td>
<td></td>
</tr>
<tr>
<td>Module Instructor(s): Prof. Björn Bartholdy (Media Design), Prof. Bernd Diemer (Game Design), 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 &amp; CG Art for Games), Prof. Dr. Cécile Le Prado (Sound Design for Games), Prof. Odile Limpach (Economics &amp; Entrepreneurship for Games)</td>
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<table>
<thead>
<tr>
<th>Other Information</th>
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<tbody>
<tr>
<td>Be aware that Mentoring as well as English classes take place within the group of students in their first year of study, whereas Game Lab Lectures, Work Groups and Profi² Courses take place within inter-semester groups.</td>
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# MANDATORY CORE ELECTIVE MODULE 1.1 GAME ARTS

<table>
<thead>
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<th>Contact Hours</th>
<th>Self-Study</th>
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</thead>
<tbody>
<tr>
<td>Game Arts I</td>
<td>80 h</td>
<td>220 h</td>
<td>10-15</td>
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</table>

## Learning Outcomes / Competencies

Students acquire theoretical and practical competencies essential to their specialization in Game Arts.

On successful completion of this module students will have:

- gained theoretical and practical knowledge in the creative process, developing characters/environments/props;
- expanded their knowledge in the field of 2D and 3D Animation;
- broadened their ability of artistic representation and sound characterization.

## Module Content

- Character/Environment/Props: Idea Generation, Visual Research, Concept Art, Presentation;
- 2D & 3D Animation;
- Art Class – for Example: life drawing, object drawing, drawing Architecture, 3D Modeling & Texturing;
- Sound Design: Sound maps and ambiances, sound characterization in relation with visual.

## Teaching Methods

Seminar, tutorial

## Prerequisite Subjects

BA.005 (The examination board decides on any exceptions.)

## Assessment Methods

Homework or course work, documentation, presentation, practical exercises

## Prerequisites for CP

Active participation, documentation (digital), presentation

## Used in Other Courses

---

## Significance of Module Grade for Final Grade

7.69%

## Module Director(s) and Module Instructor(s)

Module Director(s): Prof. Björn Bartholdy
Module Instructor(s): Prof. Björn Bartholdy (Media Design), Prof. Nanette Kaulig (3D Animation & CG Art for Games), Prof. Dr. Cécile Le Prado (Sound Design for Games), Waldemar Fast (Modeling)

## Other Information

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### MANDATORY CORE ELECTIVE MODULE 1.2 GAME DESIGN

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<tbody>
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<td>BA.009.2</td>
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<table>
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</thead>
<tbody>
<tr>
<td>Intermediate Game Design I</td>
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<td>220</td>
<td>10-15</td>
</tr>
</tbody>
</table>

#### Learning Outcomes / Competencies

Students acquire practical competencies and skills and theoretical knowledge essential to their specialization in Game Design.

On successful completion of this module students will:

- have practical experience in level design, advanced prototyping;
- have acquired basic knowledge and skills of sound design related to level design and virtual environment;
- demonstrate intermediate knowledge of game design theories, specifically in level design mixed realities games (for instance, augmented reality games or transmedia);
- have further strengthened their ability to analyze digital games with regard to their genre, fundamental structures, aesthetics and game design principles.

#### Module Content

1. Boot camp level design and advanced digital prototyping; game audio I (inter alia sound in level design);
2. Analysis of mixed realities games and level design methodologies;
3. Introduction to new forms of games and interactivity (inter alia transmedia, pervasive games, ubiquitous games);
4. Sound Design: Sound characterization in relation with level design.

#### Teaching Methods

Lecture, seminar, tutorial, practical exercises

#### Prerequisite Subjects

BA.005 (The examination board decides on any exceptions.)

#### Assessment Methods

Homework or course work, presentation, practical exercises, documentation, written test or oral exam

#### Prerequisites for CP

Active participation, completion of homework, course work or practical exercises

#### Used in Other Courses

---

#### Significance of Module Grade for Final Grade

7.69%

### Module Director(s) and Module Instructor(s)

Module Director(s): Prof. Bernd Diemer

Module Instructor(s): Prof. Bernd Diemer (Game Design), Prof. Dr. Emmanuel Guardiola (Game Design), Prof. Dr. Cécile Le Prado (Sound Design for Games), Carmen Johann, Katharina Tillmanns

### Other Information
MANDATORY CORE ELECTIVE MODULE 1.3 GAME PROGRAMMING

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Courses
Game Programming I

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<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>80 h</td>
<td>220 h</td>
<td>10-15</td>
</tr>
</tbody>
</table>

Learning Outcomes / Competencies
On successful completion of this module students will have:

- gained knowledge and competencies of CPU design, assembler language and the transition to high-level languages by studying e.g. the Intel x86 Technology;
- being introduced to the procedural programming paradigm by using e.g. the C-Language;
- gained basic knowledge of the transition from procedural to the object-oriented programming paradigm by moving e.g. from C to C++;
- been introduced to debugging methods and debugging technologies;
- understood the concepts of single-task and multitask operating systems;
- been introduced to the fields of memory-management, filesystems, process-management and devices;
- been introduced to the usage of integrated developing environments e.g. Visual-Studio, Eclipse or XCode;
- understood the concepts of bitmap and sprite-based technologies;
- been introduced to algorithms and data structures by learning how to use arrays, lists, trees, stacks und recursion;
- been introduced to dynamic audio frame work.

Module Content
Programming I: fundamentals, procedural programming, object oriented programming basics, debugging.
The Development Process: development environments, programming methodology.
Algorithms: algorithms and data structures for games.
Sound Design: dynamic sound implementation in space.

Teaching Methods
Lecture, seminar, tutorial, practical exercises

Prerequisite Subjects
BA.005 (The examination board decides on any exceptions.)

Assessment Methods
Homework or course work, presentation, practical exercises, documentation, written test or oral exam

Prerequisites for CP
Active participation, completion of homework, course work or practical exercises

Used in Other Courses
---

Significance of Module Grade for Final Grade
7.69%

Module Director(s) and Module Instructor(s)
Module Director(s): Prof. Markus Hettlich
Module Instructor(s): Prof. Markus Hettlich (Game Informatics), Prof. Dr. Cécile Le Prado (Sound Design for Games), Gereon Vienken, Jonas Zimmer

**Other Information**
---
### BASIC MEDIA AND GAME STUDIES 3

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<td>BA.010</td>
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<td>3</td>
<td>Annual</td>
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- **Courses**
  1. Introduction to the History and Theory of Digital Arts and Media in Modern Times
  2. Introduction to Market Economy

<table>
<thead>
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<th>Contact Hours</th>
<th>Self-Study</th>
<th>Size of Groups</th>
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<tbody>
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<td>32 h</td>
<td>88 h</td>
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</tr>
<tr>
<td>8 h</td>
<td>22 h</td>
<td>35-40</td>
</tr>
</tbody>
</table>

### Learning Outcomes / Competencies

The module will introduce the students to the aesthetic, cultural, technological and economic history of digitalization, from Postmodernity to the present, and it will confront them with relevant cultural, aesthetic and economic theories that will help them to understand the current transition from analog to digital culture.

1) On successful completion of part one of this module students will:
   - have gained a basic knowledge of the history and theories of digital arts and media;
   - demonstrate a basic ability to critically analyze and historically contextualize works of audiovisual art, specifically nonlinear audiovisions;
   - have further strengthened their ability to reflect and discuss cultural artifacts from the perspective of media history and theory.

2) On successful completion of part two of this module students will:
   - demonstrate a knowledge of the basic principles of the market economy and particularly of the specificities of the various platforms;
   - have further strengthened their ability to reflect and discuss digital games from the perspective of media economy;
   - have studied and practiced communication management and management principles;
   - will have strengthened their presentation skills.

### Module Content

1) a) School of Seeing/Looking: History Digital Arts and Media – Postmodernity to the Present.
   b) Introduction to Media Studies: Theories of digital art and media (inter alia: McLuhan, Kittler, Manovich, visual studies, contemporary film and game studies).

2) Comparative media economics, development of markets and marketing strategies, management and communication principles.

### Teaching Methods

Lecture, seminar, presentation, practical exercises

### Prerequisite Subjects

BA.006 (The examination board decides on any exceptions.)

### Assessment Methods

Written homework or course work (blog, wiki, paper), presentation, linear or nonlinear audiovisual work (theory clip, interactive installation etc.); written test or oral exam in all courses of the module (weighted proportionally)

### Prerequisites for CP

Active participation, completion of homework or course work
<table>
<thead>
<tr>
<th><strong>Used in Other Courses</strong></th>
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</thead>
<tbody>
<tr>
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<th><strong>Significance of Module Grade for Final Grade</strong></th>
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<tr>
<td>Module Director(s): Prof. Dr. Gundolf S. Freyermuth</td>
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<td>Module Instructor(s): Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr Lisa Gotto (Media and Game Studies), Prof. Odile Limpach (Economics &amp; Entrepreneurship for Games)</td>
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COLLABORATIVE PROJECT 3 (MIXED REALITY GAMES)

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**Courses**
- Seminar Project Management
- Project "Mixed Reality Games"

<table>
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<tr>
<th>Contact Hours</th>
<th>Self-Study</th>
<th>Size of Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 h</td>
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<td>35-40</td>
</tr>
<tr>
<td>30 h</td>
<td>240 h</td>
<td>35-40</td>
</tr>
</tbody>
</table>

**Learning Outcomes / Competencies**

1) On successful completion of the project management seminar, students will have:
   - expanded their knowledge of cost management, virtual project management, and international standards in project management;
   - learned how to moderate conflict situations within a group dynamic;
   - strengthened their knowledge of project management methods and improved their management skills during the developing process.

2) On successful completion of the collaborative project students will have:
   - strengthened their knowledge of the game development process – from conception (pitching), to design and production, to post-production and presentation;
   - gained knowledge and experience in the development of mixed reality games;
   - optimized their knowledge and skills with regard to the documentation and presentation cycle.

Finishing the specialization phase of the Bachelor program, students will further define and develop their professional roles in the game development process with regard to the collaborative structure of the project.

**Module Content**

1) Project Management: moderating conflicts, cost management, virtual project management, international standards.
2) Theme “Mixed Reality Games”:
   - Preproduction: high concept, pitching, concept, concept art, game design documention, prototyping, testing;
   - Production: game design, game arts (character & world design, animation, interface, audio design), programming/game informatics, level design;
   - Postproduction: documentation, post-mortem, publication, external pitching/communication.

**Teaching Methods**
Seminars, project

**Prerequisite Subjects**
---

**Assessment Methods**
Prototype, documentation, presentation

**Prerequisites for CP**
Prototype, documentation, presentation

**Used in Other Courses**
---

**Significance of Module Grade for Final Grade**
7.69%
**Module Director(s) and Module Instructor(s)**

Module Director(s): Prof. Markus Hettlich, Prof. Dr. Lisa Gotto

Module Instructor(s): Prof. Björn Bartholdy (Media Design), Prof. Bernd Diemer (Game Design), Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr. Lisa Gotto (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. Cécile Le Prado (Sound Design for Games), Prof. Odile Limpach (Economics & Entrepreneurship for Games)

**Other Information**

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### REFLECTION & COMMUNITY 3

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<th>Semester</th>
<th>Frequency</th>
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<td>3</td>
<td>Annual</td>
<td>16 weeks</td>
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**Courses**

1) Individual and Group Mentoring
2) Game Lab Lectures
3) English for Game Developers
4) Work Groups
5) Profi² Week

<table>
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<tr>
<th>Courses</th>
<th>Contact Hours</th>
<th>Self-Study</th>
<th>Size of Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
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<td>1-15</td>
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<td>3-15</td>
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<tr>
<td>5)</td>
<td>15 h</td>
<td>15 h</td>
<td>15-30</td>
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</table>

**Learning Outcomes / Competencies**

On successful completion of this module students will have:

- deepened their identity and confidence as game artists, game designers, or game programmers through individual and group mentoring from professors in their area of specialization;
- broadened their horizons as well as attained key skills in areas such as self-reliance, organization, teamwork, and communication through lectures on theory and practice, interdisciplinary, and inter-semester collaboration, as well as English classes.

**Module Content**

1) Individual and Group Mentoring: with a main focus on student artistic and professional development in their respective area of specialization (Game Arts, Game Design, or Game Programming).
2) Game Lab Lectures: 10 to 12 guest lectures offering a variety of perspectives from both game development and game studies.
3) English for Game Developers: Content is highly dependent on student needs and requirements in the third semester. Topics might include, among other things, technical English, academic and professional presentation, academic and creative writing.
4) Work Groups: In these self-organized groups, students contribute to CGL’s unique culture and community. Among others things, these groups support CGL’s endeavors in the areas of conferences, exhibitions, publishing, research, public relations, collecting and archiving of games and media, etc.
5) Profi² Week: Within the university wide Profil² Week students can choose an interdisciplinary and/or project-oriented course in or outside CGL.

**Teaching Methods**

Lecture, seminar, group work, individual and group mentoring

**Prerequisite Subjects**

---

**Assessment Methods**

---

**Prerequisites for CP**

Active Participation

**Used in Other Courses**
Parts of the module, i.e. the Game Lab Lectures, Work Groups and Profil² Courses are open to all CGL students. Mentoring and English are exclusively offered to BA Digital Games students.

**Significance of Module Grade for Final Grade**
0%

**Module Director(s) and Module Instructor(s)**
Module Director(s): Prof. Björn Bartholdy
Module Instructor(s): Prof. Björn Bartholdy (Media Design), Prof. Bernd Diemer (Game Design), Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr. Lisa Gotto (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. Cécile Le Prado (Sound Design for Games), Prof. Odile Limpach (Economics & Entrepreneurship for Games)

**Other Information**
Be aware that Mentoring as well as English classes are held for students in their second year of study, whereas Game Lab Lectures, Work Groups and Profil² Courses take place in inter-semester groups.
# MANDATORY CORE ELECTIVE MODULE 2.1: GAME ARTS

<table>
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<tbody>
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<td>10-15</td>
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</table>

**Learning Outcomes / Competencies**

Students acquire theoretical and practical competencies essential to their specialization in Game Arts.

On successful completion of this module students will have:

- gained theoretical and practical knowledge in the creative process, developed characters/environments/props;
- expanded their knowledge in the field of 2D and 3D Animation;
- broadened their abilities in artistic representation and sound characterization.

**Module Content**

- Character/Environment/Props: Idea Generation, Visual Research, Concept Art, Presentation;
- 2D & 3D Animation;
- Art Class – for example: still life drawing, object drawing, architecture drawing, 3D Modeling & Rigging;
- Sound Design: Customization of voices, characters, and emotions.

**Teaching Methods**

Seminars, Tutorial

**Prerequisite Subjects**

BA.009.1 (The examination board decides on any exceptions.)

**Assessment Methods**

Homework or course work, documentation, presentation, practical exercises

**Prerequisites for CP**

Active participation, documentation (digital), presentation

**Used in Other Courses**

---

**Significance of Module Grade for Final Grade**

7.69%

**Module Director(s) and Module Instructor(s)**

Module Director(s): Prof. Björn Bartholdy

Module Instructor(s): Prof. Björn Bartholdy (Media Design), Prof. Nanette Kaulig (3D Animation & CG Art for Games), Prof. Dr. Cécile Le Prado (Sound Design for Games), Waldemar Fast (Modeling)

**Other Information**

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# MANDATORY CORE ELECTIVE MODULE 2.2 GAME DESIGN

<table>
<thead>
<tr>
<th>ID</th>
<th>Workload</th>
<th>Credits</th>
<th>Semester</th>
<th>Frequency</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA.013.2</td>
<td>300 h</td>
<td>10 ECTS</td>
<td>4</td>
<td>Annual</td>
<td>8 Weeks</td>
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</table>

## Courses
- Intermediate Game Design II

<table>
<thead>
<tr>
<th>Contact Hours</th>
<th>Self-Study</th>
<th>Size of Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 h</td>
<td>220 h</td>
<td>10-15</td>
</tr>
</tbody>
</table>

### Learning Outcomes / Competencies

Students acquire practical competencies and skills as well as theoretical knowledge essential to their specialization in Game Design.

On successful completion of this module students will:
- demonstrate intermediate abilities in mechanics and multiplayer/online design;
- have acquired basic knowledge and skills in sound design in gameplay;
- demonstrate intermediate knowledge of game design theories, specifically with regard to mise-en-scène and experimental games;
- have enlarged and consolidated their abilities to analyze digital games with regard to their specific genre, fundamental structures, aesthetics, and game design principles.

### Module Content

1. Intermediate mechanics and multiplayer/online design; game audio II (inter alia Gameplay sound design);
2. Introduction to Mise-en-scène; Classics of game design theory: reading and discussion (for example Raph Koster, *A Theory of Fun for Game Design*);
3. Analyses of brand new games and experimental games;

### Teaching Methods

Lecture, seminar, tutorial, practical exercises

### Prerequisite Subjects

BA.009.2 (The examination board decides on any exceptions.)

### Assessment Methods

Homework or course work, presentation, practical exercises, documentation, written test or oral exam

### Prerequisites for CP

Active participation, completion of homework, course work or practical exercises

### Used in Other Courses

---

### Significance of Module Grade for Final Grade

7.69%

### Module Director(s) and Module Instructor(s)

Module Director(s): Prof. Dr. Emmanuel Guardiola
Module Instructor(s): Prof. Bernd Diemer (Game Design), Prof. Dr. Emmanuel Guardiola (Game Design), Prof. Dr. Cécile Le Prado (Sound Design for Games), Carmen Johann, Katharina Tillmanns

### Other Information
MANDATORY CORE ELECTIVE MODULE 2.3 GAME PROGRAMMING

<table>
<thead>
<tr>
<th>ID</th>
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<th>Credits</th>
<th>Semester</th>
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<tbody>
<tr>
<td>BA.013.3</td>
<td>300 h</td>
<td>10 ECTS</td>
<td>4</td>
<td>Annual</td>
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</table>

Courses
- Game Programming II

<table>
<thead>
<tr>
<th>Courses</th>
<th>Contact Hours</th>
<th>Self-Study</th>
<th>Size of Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Game Programming II</td>
<td>80 h</td>
<td>220 h</td>
<td>10-15</td>
</tr>
</tbody>
</table>

Learning Outcomes / Competencies
On successful completion of this module students will:
- have gathered knowledge of advanced aspects of object-oriented programming by using C++, for example;
- have understood the concepts of concurrency, as well as processes, thread, and synchronizing technologies;
- be able to use the framework and API’s for the handling of audio and video in game projects;
- have gathered knowledge about the development of the Internet from the 1950s to the present and the basic elements of web architecture, particularly IP-Numbers, Subnets, Routing, and DNS-Services;
- be able to use TCP/IP and UDP protocols as well as have learned about their concurrency issues in the field of game programming;
- have been introduced to server-side programming by using PHP script language, for example;
- have been introduced to concepts concerning relational databases;
- be able to handle tables as data repositories and to locate/manipulate them with Structured Query Language (SQL);
- have been introduced to the programming of online games by connecting front end programming to server-based technologies including databases;
- have improved their competencies in the area of sound by iterating their third semester projects in this area.

Module Content
1) Programming II: object oriented programming, parallel programming, media programming.
2) Networks and the Internet: history of the internet, architecture, protocols, network programming.
3) Servers: server-based script programming.
4) Databases: overview, introduction to SQL.
5) Online games: compound programming of front end, back end, and database technologies.
6) Sound design: advanced interactive aspects

Teaching Methods
Lecture, seminar, tutorial, practical exercises

Prerequisite Subjects
BA.009.3 (The examination board decides on any exceptions.)

Assessment Methods
Homework or course work, presentation, practical exercises, documentation, written test or oral exam

Prerequisites for CP
Active participation, completion of homework, course work or practical exercises

Used in Other Courses
---

Significance of Module Grade for Final Grade
<table>
<thead>
<tr>
<th>7.69%</th>
</tr>
</thead>
</table>

**Module Director(s) and Module Instructor(s)**

Module Director(s): Prof. Markus Hettlich

Module Instructor(s): Prof. Markus Hettlich (Game Informatics), Prof. Dr. Cécile Le Prado (Sound Design for Games), Gereon Vienken, Jonas Zimmer

**Other Information**
---
INTERMEDIATE MEDIA AND GAME STUDIES 1

<table>
<thead>
<tr>
<th>ID</th>
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<th>Credits</th>
<th>Semester</th>
<th>Frequency</th>
<th>Duration</th>
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</thead>
<tbody>
<tr>
<td>BA.014</td>
<td>150 h</td>
<td>5 ECTS</td>
<td>4</td>
<td>Annual</td>
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</table>

Courses
1) Adaptation & Transmedia
2) Thinking Experimental Art
3) Business and Administration

Contact Hours
<table>
<thead>
<tr>
<th>Course</th>
<th>Contact Hours</th>
<th>Self-Study</th>
<th>Size of Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Adaptation &amp; Transmedia</td>
<td>22 h</td>
<td>60 h</td>
<td>35-40</td>
</tr>
<tr>
<td>2) Thinking Experimental Art</td>
<td>11 h</td>
<td>27 h</td>
<td>35-40</td>
</tr>
<tr>
<td>3) Business and Administration</td>
<td>8 h</td>
<td>22 h</td>
<td>35-40</td>
</tr>
</tbody>
</table>

Learning Outcomes / Competencies
In this module, students will be introduced to the history and theories of cultural and economic transfer and the principles of adaptation and transmedia in digital culture and, of course, digital gaming.

1) On successful completion of parts one and two of this module students will:
   - have gained basic knowledge of the history and theories of artistic transfer and experimentation;
   - demonstrate a basic ability to critically analyze and historically contextualize effects of artistic transfer and experimention, specifically the history and methods of adaptation, transmedia production, and storytelling, as well as experimental art;
   - have deepened their ability to reflect and discuss cultural artifacts from the perspective of media history and theory.

2) On successful completion of part three of this module students will:
   - demonstrate basic knowledge of the principles of business and administration, specifically the history and theories of organizations, theories and practices of management, media management, and business planning;
   - have further strengthened their ability to reflect and discuss digital games from the perspective of media economy.

Module Content
1) History and theories of analog networking, history and theories of digital networking, history and theories of the public sphere, history and practices of audience building.
2) Theories of organizations, theories of management, theories and practice of business planning, media management, regulation, and politics.

Teaching Methods
Lecture, seminar, practical exercises

Prerequisite Subjects
BA.010 (The examination board decides on any exceptions.)

Assessment Methods
Written homework or course work (blog, wiki, paper), presentation, linear or nonlinear audiovisual work (theory clip, interactive installation etc.); written test or oral exam in all courses of the module (weighted proportionally)

Prerequisites for CP
Active participation, completion of homework or course work

Used in Other Courses
---

Significance of Module Grade for Final Grade
3.85%

**Module Director(s) and Module Instructor(s)**

Module Director(s): Prof. Dr. Gundolf S. Freyermuth

Module Instructor(s): Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr. Lisa Gotto (Media and Game Studies), Prof. Odile Limpach (Economics & Entrepreneurship for Games)

**Other Information**

---
COLLABORATIVE PROJECT 4 (EXPERIMENTAL GAMES)

<table>
<thead>
<tr>
<th>ID</th>
<th>Workload</th>
<th>Credits</th>
<th>Semester</th>
<th>Frequency</th>
<th>Duration</th>
</tr>
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<tbody>
<tr>
<td>BA.015</td>
<td>300 h</td>
<td>10 ECTS</td>
<td>4</td>
<td>Annual</td>
<td>8 Weeks</td>
</tr>
</tbody>
</table>

Courses
1) Seminar Project Management
2) Project “Experimental Games”

Learning Outcomes / Competencies
1) On successful completion of the project management seminar, students will have:
   • deepened their knowledge of team communication (and moderation), quality assurance, specific tasks in the role of project lead;
   • discussed questions of project management on parallel projects;
   • consolidated their already existing abilities in the field of structured project management.
2) On successful completion of the collaborative project, students will have:
   • strengthened their knowledge in the game development process – from conception (pitching), design and production, post-production, and presentation;
   • been encouraged to experiment with game development issues;
   • been encouraged to question existing strategies, established procedures, and already acquired skills and abilities;
   • optimized their knowledge and skills with regard to the documentation and presentation cycle.

Moving forward in the specialization phase of the Bachelor program, students will further define and develop their professional roles in the game development process with regard to the collaborative structure of the project.

Module Content
1) Project Management: team communication, quality assurance II, pm lead, managing multiple projects.
2) Theme “Experimental Games”:
   • Preproduction: high concept, pitching, concept, concept art, game design document, prototyping, testing;
   • Production: game design, game arts (character & world design, animation, interface, sound design), programming/game informatics, level design;
   • Postproduction: documentation, post-mortem, publication, external pitching/communication.

Teaching Methods
Seminar, project

Prerequisite Subjects
---

Assessment Methods
Prototype, documentation, presentation

Prerequisites for CP
Prototype, documentation, presentation

Used in Other Courses
---

Significance of Module Grade for Final Grade
Module Director(s) and Module Instructor(s)
Module Director(s): Prof. Dr. Cécile Le Prado, Prof. Björn Bartholdy
Module Instructor(s): Prof. Björn Bartholdy (Media Design), Prof. Bernd Diemer (Game Design), Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr. Lisa Gotto (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. Cécile Le Prado (Sound Design for Games), Prof. Odile Limpach (Economics & Entrepreneurship for Games)

Other Information
---
REFLECTION & COMMUNITY 4

<table>
<thead>
<tr>
<th>ID</th>
<th>Workload</th>
<th>Credits</th>
<th>Semester</th>
<th>Frequency</th>
<th>Duration</th>
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</thead>
<tbody>
<tr>
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<td>150h</td>
<td>5 ECTS</td>
<td>4</td>
<td>Annual</td>
<td>16 weeks</td>
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</tbody>
</table>

Courses
1) Individual and Group Mentoring
2) Game Lab Lectures
3) English for Game Developers
4) Work Groups
5) Profil² Week

Contact Hours | Self-Study | Size of Groups
-------------|------------|----------------
15 h         | 15 h       | 1-15
20 h         | 10 h       | 150-200
15 h         | 15 h       | 35-40
10 h         | 20 h       | 3-15
15 h         | 15 h       | 15-30

Learning Outcomes / Competencies
On successful completion of this module students will have:

- deepened their identity and confidence as game artists, game designers, or game programmers through individual and group mentoring from professors in their area of specialization;
- broadened their horizons as well as attained key skills in areas such as self-reliance, organization, teamwork, and communication through lectures on theory and practice, interdisciplinary, and inter-semester collaboration, as well as English classes.

Module Content

1) Individual and Group Mentoring: with a main focus on student artistic and professional development in their respective area of specialization (Game Arts, Game Design, or Game Programming).
2) Game Lab Lectures: 10 to 12 guest lectures offering a variety of perspectives from both game development and game studies.
3) English for Game Developers: Content is highly dependent on student needs and requirements in the fifth semester. Topics might include, among other things, technical English, academic and professional presentation, academic and creative writing.
4) Work Groups: In these self-organized groups, students contribute to CGL’s unique culture and community. Among others things, these groups support CGL’s endeavors in the areas of conferences, exhibitions, publishing, research, public relations, collecting and archiving of games and media, etc.
5) Profil² Week: Within the university wide ProfiL² Week students can choose an interdisciplinary and/or project-oriented course in or outside CGL.

Teaching Methods
Lecture, seminar, group work, individual and group mentoring

Prerequisite Subjects
---

Assessment Methods
---

Prerequisites for CP
Active Participation

Used in Other Courses
Parts of the module, i.e. the Game Lab Lectures, Work Groups and Profil² Courses are open to all CGL students. Mentoring and English are exclusively offered to BA Digital Games students.
**Significance of Module Grade for Final Grade**

0%

**Module Director(s) and Module Instructor(s)**

Module Director(s): Prof. Björn Bartholdy

Module Instructor(s): Prof. Björn Bartholdy (Media Design), Prof. Bernd Diemer (Game Design), Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr. Lisa Gotto (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. Cécile Le Prado (Sound Design for Games), Prof. Odile Limpach (Economics & Entrepreneurship for Games)

**Other Information**

Be aware that Mentoring as well as English classes are held for students in their second year of study, whereas Game Lab Lectures, Work Groups and ProfiL² Courses take place in inter-semester groups.
**ELECTIVE MODULE EXCHANGE & PRACTICE: INTERNSHIP**

<table>
<thead>
<tr>
<th>ID</th>
<th>Workload</th>
<th>Credits</th>
<th>Semester</th>
<th>Frequency</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA.017.1</td>
<td>750 h</td>
<td>25</td>
<td>5</td>
<td>Annual</td>
<td>17 weeks</td>
</tr>
</tbody>
</table>

**Courses**
1) Internship (at a game-related company)
2) Documentation of Internship

<table>
<thead>
<tr>
<th>Contact Hours</th>
<th>Self-Study</th>
<th>Size of Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>600 h</td>
<td>not applicable</td>
</tr>
<tr>
<td>-</td>
<td>150 h</td>
<td>not applicable</td>
</tr>
</tbody>
</table>

**Learning Outcomes / Competencies**

In the fifth semester, students can choose between three compulsory elective modules: Internship (BA.017.1), Exchange Semester (BA.017.2), and Self-Initiated Project (BA.017.3).

The module “Internship” offers students the opportunity to test and strengthen their newly acquired knowledge and skills in a professional working environment within the game industry (AAA Company, Indie Game Developer, Serious Game Studio, etc.) or a related (creative) industry. Students will gain a better understanding of practical work flows and will increase their soft skills, for example communication, organization, time management, etc.

**Module Content**
Internship at a game developer (or at another game-related company)

**Teaching Methods**
Learning by Doing

**Prerequisite Subjects**
BA.013, BA.014, BA.015 (The examination board decides on any exceptions.)

**Assessment Methods**
Documentation

**Prerequisites for CP**
Certificate of Employment (listing intern’s activities and sum of worked hours), documentation

**Used in Other Courses**
---

**Significance of Module Grade for Final Grade**
0%

**Module Director(s) and Module Instructor(s)**
Module Director(s): Prof. Dr. Emmanuel Guardiola

**Other Information**
Information on the structure and procedures of the Exchange & Practice semester will be delivered in the prior semester. More information and a registration form can be found in *Spaces*. BA.017 has to be studied in combination with BA.018.
# ELECTIVE MODULE EXCHANGE & PRACTICE: EXCHANGE SEMESTER

<table>
<thead>
<tr>
<th>ID</th>
<th>Workload</th>
<th>Credits</th>
<th>Semester</th>
<th>Frequency</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA.017.2</td>
<td>750h</td>
<td>25</td>
<td>5</td>
<td>Annual</td>
<td>17 weeks</td>
</tr>
</tbody>
</table>

**Courses**
- 1) Exchange Semester
- 2) Documentation of Exchange Semester

**Contact Hours**
- Self-Study: 600 h
- Self-Study: 150 h

**Size of Groups**
- unknown
- not applicable

### Learning Outcomes / Competencies

In the fifth semester, students can choose between three compulsory elective modules: Internship (BA.017.1), Exchange Semester (BA.017.2), and Self-Initiated Project (BA.017.3).

The module “Exchange Semester” offers students an opportunity to broaden their academic perspective. They can either deepen their expertise in one or more selected area(s) of study (such as Game Arts, Game Design, Game Programming, Game Studies, Media Economics, etc.) or expand their expertise to a new field of study relevant to game development (such as Digital Arts, Film Studies, Interaction Design, Media Education, etc.). They also will get to know a different (academic) culture and will improve their intercultural competence.

### Module Content

Areas of study relevant to game development (such as Game Arts, Game Design, Game Programming, Game Studies, Digital Arts, Film Studies, Interaction Design, Media Education, Media Economics, etc.)

### Teaching Methods

Depends on courses offered at the university abroad

### Prerequisite Subjects

BA.013, BA.014, BA.015 (The examination board decides on any exceptions.)

### Assessment Methods

Depends on courses offered at the university abroad, documentation of the exchange semester

### Prerequisites for ECTS certificate, documentation

### Used in Other Courses

---

### Significance of Module Grade for Final Grade

0%

### Module Director(s) and Module Instructor(s)

Module Director(s): Prof. Nanette Kaulig
Exchange Coordinator: Dr. André Czauderna
Module Instructor(s): Professors of the host university

### Other Information

Information on the structure and procedures of the Exchange Semester will be delivered at the end of the third semester. More information can be found in Spaces. BA.017 has to be studied in combination with BA.018.
ELECTIVE MODULE EXCHANGE & PRACTICE: SELF-INITIATED PROJECT

<table>
<thead>
<tr>
<th>ID</th>
<th>Workload</th>
<th>Credits</th>
<th>Semester</th>
<th>Frequency</th>
<th>Duration</th>
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<td>BA.017.3</td>
<td>750</td>
<td>25</td>
<td>5</td>
<td>Annual</td>
<td>17 weeks</td>
</tr>
</tbody>
</table>

Courses
1) Colloquium
2) Self-Initiated Project
3) Documentation of Self-Initiated Project

Contact Hours
Self-Study
30 h 540 h
- 150 h

Size of Groups
5-15 1-3
not applicable

Learning Outcomes / Competencies
In the fifth semester, students can choose between three compulsory elective modules: Internship (BA.017.1), Exchange Semester (BA.017.2), and Self-Initiated Project (BA.017.3).

The module “Self-Initiated Project” offers students the opportunity to initiate and realize a comprehensive project over the period of one semester – individually or collaboratively. Students will apply their newly gained knowledge and skills to a “professional” project with publication potential (i.e., a project potentially leading to a prototype, which could be pitched to a developer or on a crowdfunding website or submitted for public funding). Students will learn to adapt their abilities to the necessities of a self-organized game project and how to find the right balance between artistic and commercial aspects of game development. Furthermore, students will increase their skill level in project management as well as their soft skills, particularly communication, teamwork, organization, time management, etc.

As an alternative to game development projects, students might pursue other game-related projects, such as animation or research projects (leading to potentially publishable work).

Module Content
Self-initiated development of a digital game (or another relevant game-related piece of work) with publication potential over the period of one semester.

Teaching Methods
Learning by Doing, mentoring, discussion

Prerequisite Subjects
BA.013, BA.014, BA.015 (The examination board decides on any exceptions.)

Assessment Methods
Documentation, colloquium

Prerequisites for CP
Prototype/Documentation

Used in Other Courses
---

Significance of Module Grade for Final Grade
0%

Module Director(s) and Module Instructor(s)
Module Director(s): Prof. Markus Hettlich
Module Instructor(s): Prof. Björn Bartholdy (Media Design), Prof. Bernd Diemer (Game Design), Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr. Lisa Gotto (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. Cécile Le Prado (Sound Design for Games), Prof. Odile Limpach (Economics & Entrepreneurship for Games)

**Other Information**

Information on the structure and procedures of the Exchange & Practice semester will be delivered in the prior semester. More information and a registration form can be found in *Spaces*. BA.017 has to be studied in combination with BA.018.
REFLECTION & COMMUNITY 5

<table>
<thead>
<tr>
<th>ID</th>
<th>Workload</th>
<th>Credits</th>
<th>Semester</th>
<th>Frequency</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA.018</td>
<td>150 h</td>
<td>5 ECTS</td>
<td>5</td>
<td>Annual</td>
<td>17 weeks</td>
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</table>

Courses
1) Individual and Group Mentoring
2) Exchange & Practice Presentation

<table>
<thead>
<tr>
<th>Contact Hours</th>
<th>Self-Study</th>
<th>Size of Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 h</td>
<td>30 h</td>
<td>1-15</td>
</tr>
<tr>
<td>15 h</td>
<td>75 h</td>
<td>35-40</td>
</tr>
</tbody>
</table>

Learning Outcomes / Competencies
Reflecting on experiences from their exchange and practice semester, students will:

- deepen their intercultural competence and/or their ability to critically analyze professional practice;
- improve their understanding of their own strengths and weaknesses, which enables them to identify areas they could improve on in forthcoming semesters;
- develop their identities as future academics and/or professionals.

Module Content

- Individual and group mentoring focusing on student experiences during their exchange and practice semester (self-study requirements depend on the respective mentor and include, among other things, tasks such as structured self-assessment and journal or blog writing).
- A final Exchange & Practice presentation; students demonstrate structured and deep reflection on their individual experiences.

Teaching Methods
Individual and group mentoring (partly through long distance communication), presentation

Prerequisite Subjects
BA.013, BA.014, BA.015 (The examination board decides on any exceptions.)

Assessment Methods
Presentation

Prerequisites for CP
Active participation, assignments for mentoring, presentation

Used in Other Courses
---

Significance of Module Grade for Final Grade
0%

Module Director(s) and Module Instructor(s)
Module Director(s): Prof. Dr. Gundolf S. Freyermuth
Module Instructor(s): Prof. Björn Bartholdy (Media Design), Prof. Bernd Diemer (Game Design), Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr. Lisa Gotto (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. Cécile Le Prado (Sound Design for Games), Prof. Odile Limpach (Economics & Entrepreneurship for Games)

Other Information
An introduction to Reflection & Community 5 (including information on the procedures of mentoring and the Exchange & Practice presentation) will be provided at an information session on the structure of the Exchange & Practice semester in the prior semester. Study of BA.018 has to be combined with BA.017 (1, 2 or 3).
**MANDATORY CORE ELECTIVE MODULE 3.1 GAME ARTS**

<table>
<thead>
<tr>
<th>ID</th>
<th>Workload</th>
<th>Credits</th>
<th>Semester</th>
<th>Frequency</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA.019.1</td>
<td>300 h</td>
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<td>6</td>
<td>Annual</td>
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<table>
<thead>
<tr>
<th>Courses</th>
<th>Contact Hours</th>
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</thead>
<tbody>
<tr>
<td>Game Arts III</td>
<td>80 h</td>
<td>220 h</td>
<td>10-15</td>
</tr>
</tbody>
</table>

**Learning Outcomes / Competencies**

Students acquire theoretical and practical competencies essential to their specialization in Game Arts.

On successful completion of this module students will have:

- enhanced their theoretical and practical knowledge in the creative process, developing characters, environments, and props in regard to individual specialization;
- enhanced their knowledge in the field of 2D or 3D Animation;
- enhanced their ability of artistic representation and sound characterisation.

**Module Content**

- Character/Environment/Props Development
- Animation
- Art Class
- Sound Design

**Teaching Methods**

Seminars, tutorial

**Prerequisite Subjects**

BA.013.1 (The examination board decides on any exceptions.)

**Assessment Methods**

Homework or course work, documentation, presentation, practical exercises

**Prerequisites for CP**

Active participation, documentation (digital), presentation

**Used in Other Courses**

---

**Significance of Module Grade for Final Grade**

7.69%

**Module Director(s) and Module Instructor(s)**

Module Director(s): Prof. Björn Bartholdy

Module Instructor(s): Prof. Björn Bartholdy (Media Design), Prof. Nanette Kaulig (3D Animation & CG Art for Games), Prof. Dr. Cécile Le Prado (Sound Design for Games), Waldemar Fast (Modeling)

**Other Information**

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### MANDATORY CORE ELECTIVE MODULE 3.2 GAME DESIGN

<table>
<thead>
<tr>
<th>ID</th>
<th>Workload</th>
<th>Credits</th>
<th>Semester</th>
<th>Frequency</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>BA.019.2</td>
<td>300 h</td>
<td>10 ECTS</td>
<td>6</td>
<td>Annual</td>
<td>8 Weeks</td>
</tr>
</tbody>
</table>

#### Courses
- Intermediate Game Design III

<table>
<thead>
<tr>
<th>Contact Hours</th>
<th>Self-Study</th>
<th>Size of Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 h</td>
<td>220 h</td>
<td>10-15</td>
</tr>
</tbody>
</table>

### Learning Outcomes / Competencies

Students acquire practical competencies and skills and theoretical knowledge essential to their specialization in Game Design.

On successful completion of this module students will:

- have developed basic skills in designing the user experience and in designing impact games (for instance serious games or games for health);
- have acquired basic knowledge and skills in sound design and space;
- demonstrate intermediate knowledge of game design theories, specifically with regard to games with measurable effects (such as serious games);
- have further developed and consolidated their abilities to analyze digital games with regard to their genre, fundamental structures, aesthetics, and game design principles;
- have learned about real and virtual sound space possibilities in game play.

### Module Content

1. Introduction to serious game design, games for health and education;
2. Game audio IV (game and space);
3. Designing the user experience and methodology for real life impact games;
4. Milestones of fundamental game genres; analyses of brand new games.

### Teaching Methods

Lecture, seminar, tutorial, practical exercises

### Prerequisite Subjects

BA.013.2 (The examination board decides on any exceptions.)

### Assessment Methods

Homework or course work, presentation, practical exercises, documentation, written test or oral exam

### Prerequisites for CP

Active participation, completion of homework, course work or practical exercises

### Used in Other Courses

---

### Significance of Module Grade for Final Grade

7.69%

### Module Director(s) and Module Instructor(s)

Module Director(s): Prof. Bernd Diemer

Module Instructor(s): Prof. Bernd Diemer (Game Design), Prof. Dr. Emmanuel Guardiola (Game Design), Prof. Dr. Cécile Le Prado (Sound Design for Games), Carmen Johann, Katharina Tillmanns
Other Information
---
# MANDATORY CORE ELECTIVE MODULE 3.3 GAME PROGRAMMING

<table>
<thead>
<tr>
<th>ID</th>
<th>Workload</th>
<th>Credits</th>
<th>Semester</th>
<th>Frequency</th>
<th>Duration</th>
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</thead>
<tbody>
<tr>
<td>BA.019.3</td>
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<td>6</td>
<td>Annual</td>
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<table>
<thead>
<tr>
<th>Courses</th>
<th>Contact Hours</th>
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</thead>
<tbody>
<tr>
<td>Game Programming III</td>
<td>80 h</td>
<td>220 h</td>
<td>10-15</td>
</tr>
</tbody>
</table>

## Learning Outcomes / Competencies

On successful completion of this module students will:

- have been introduced to linear algebra in regard to 3D-Technologies;
- be able to develop basic 3D games using Direct3D or OpenGL-technologies, for example;
- have been introduced to advanced concepts of shader-programming as opposed to the fixed function pipeline approach;
- be able to embed a script engine into a game and to communicate with the hosting application by using the LUA system, for example;
- have been introduced to mobile operation systems and their special features like location services, accelerometer, and magnetometer by using iOS, Android or Windows phone technology, for example;
- have been introduced to physics engines such as the box2D, Havok, or PhysX Frameworks;
- be able to program simple game physics with gravity mechanics such as the inclined launch;
- have been introduced to the field of Artificial Intelligence related to game programming;
- have been introduced to application server technologies such as Tomcat (Java) or ASP.NET;
- have been introduced to advanced browser technologies related to games, such as WebGL, WebAudio, and WebSockets;
- have been introduced to sound possibilities in augmented and virtual reality.

## Module Content

- Programming III: embedded languages, mobile programming, human interfaces.
- Mathematics for Applications Development II: linear algebra.
- Physics/Simulation: physics games, frameworks.
- Artificial Intelligence: overview, AI for games.
- Web Server Technology: application server.
- Browser Technologies: advanced browser technologies.
- Sound design: prototyping sound for augmented and virtual reality.

## Teaching Methods

Lecture, seminar, tutorial, practical exercises

## Prerequisite Subjects

BA.013.3 (The examination board decides on any exceptions.)

## Assessment Methods

Homework or course work, presentation, practical exercises, documentation, written test or oral exam

## Prerequisites for CP

Active participation, completion of homework, course work or practical exercises

## Used in Other Courses
<table>
<thead>
<tr>
<th>Significance of Module Grade for Final Grade</th>
<th>7.69%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Module Director(s) and Module Instructor(s)</strong></td>
<td></td>
</tr>
<tr>
<td>Module Director(s): Prof. Markus Hettlich</td>
<td></td>
</tr>
<tr>
<td>Module Instructor(s): Prof. Markus Hettlich (Game Informatics), Prof. Dr. Cécile Le Prado (Sound Design for Games), Gereon Vienken, Jonas Zimmer</td>
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<tr>
<td><strong>Other Information</strong></td>
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**INTERMEDIATE MEDIA AND GAME STUDIES 2**

<table>
<thead>
<tr>
<th>ID</th>
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<th>Semester</th>
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<tr>
<td>BA.020</td>
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<td>7 ECTS</td>
<td>6/7</td>
<td>Annual</td>
<td>24 Weeks</td>
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<table>
<thead>
<tr>
<th>Courses</th>
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</thead>
<tbody>
<tr>
<td>1) Contemporary Media Theory and Game Studies</td>
</tr>
<tr>
<td>2) Theories and Practices of Online Marketing and Business Planning</td>
</tr>
<tr>
<td>3) BA Colloquium</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Contact Hours</th>
<th>Self-Study</th>
<th>Size of Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>22 h</td>
<td>66 h</td>
<td>35-40</td>
</tr>
<tr>
<td>12 h</td>
<td>32 h</td>
<td>35-40</td>
</tr>
<tr>
<td>22 h</td>
<td>56 h</td>
<td>8-20</td>
</tr>
</tbody>
</table>

**Learning Outcomes / Competencies**

In this module, students will be familiarized with central points of discussion in contemporary Game Studies and Media Economy. They will be encouraged to theoretically contemplate problems and questions arising in the context of their BA projects from the perspectives of media history and theory as well as media economics.

1) On successful completion of part one of this module students will have:
   - gained insight into current theories of media and game studies relating to their BA projects;
   - strengthened their ability to reflect and discuss their own creative work from the perspective of media and game studies.

2) On successful completion of part two of this module students will:
   - demonstrate basic knowledge of social, viral, and online marketing, audience building and community management, value creation and monetization;
   - demonstrate basic knowledge of business planning;
   - have strengthened their ability to reflect and discuss their own creative work from the perspective of media economy.

3) On successful completion of part three of this module students will have:
   - received feedback on the theoretical framework of their BA theses from their peers as well as from their professors (Media and Game Studies, Media Economy);
   - had the opportunity to reevaluate and rewrite the theoretical passages of their BA theses.

**Module Content**

1) New points of discussion in contemporary game studies and “on demand theory” – theoretical reflection of questions and problems arising in the context of student BA projects.

2) Online Marketing Basics, for example: how to manage communities, social and viral marketing, value creation, monetization, branding; business planning basics

3) Presentation and discussion of the theoretical framework of student BA theses.

**Teaching Methods**

Seminar, presentations, practical exercises

**Prerequisite Subjects**

BA.014 (The examination board decides on any exceptions.)

**Assessment Methods**

Written homework or course work (blog, wiki, paper), written test or oral exam, presentation in all courses of the module (weighted proportionally)

**Prerequisites for CP**
Active participation, completion of homework or course work.

**Used in Other Courses**
---

**Significance of Module Grade for Final Grade**
5.38%

**Module Director(s) and Module Instructor(s)**
Module Director(s): Prof. Dr. Gundolf S. Freyermuth
Module Instructor(s): Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr Lisa Gotto (Media and Game Studies), Prof. Odile Limpach (Economics & Entrepreneurship for Games), Dr. André Czauderna

**Other Information**
---
COLLABORATIVE PROJECT 5 (SERIOUS GAMES)

<table>
<thead>
<tr>
<th>ID</th>
<th>Workload</th>
<th>Credits</th>
<th>Semester</th>
<th>Frequency</th>
<th>Duration</th>
</tr>
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<tr>
<td>BA.021</td>
<td>300 h</td>
<td>10 ECTS</td>
<td>6</td>
<td>Annual</td>
<td>8 Weeks</td>
</tr>
</tbody>
</table>

Courses
1) Seminar Project Management
2) Project “Serious Games”

Contact Hours | Self-Study | Size of Groups
10 h          | 20 h       | 35-40
30 h          | 240 h      | 35-40

Self-Study
20 h
240 h

Learning Outcomes / Competencies

1) On successful completion of the project management part students will be able to:
   • reflect their different roles in the project execution;
   • understand the basics of quality assurance and full cost pricing;
   • recall intermediate knowledge of project management software;
   • accurately apply a project management structure to a project.

2) On successful completion of the collaborative project students will be able to:
   • develop a Real Life Serious Game on a given subject;
   • research and apply real world facts and issues to the game development process.

Furthermore, students will have deepened their knowledge of the game development process, from conception (pitching), design to production, post-production and presentation as well as manifested their ability of project documentation and presentation on a professional level.

Having entered the specialization phase of the Bachelor program, students will start to define and develop their professional roles in the game development process with regard to the collaborative structure of the project.

Module Content

1) Project Management: roles in project execution, quality assurance I, project management software II, full cost pricing.
2) Theme “Serious Games”:
   • Preproduction: high concept, pitching, concept, concept art, game design document, prototyping, testing;
   • Production: game design, game arts (character & world Design, animation, interface, audio design), programming/game informatics, level design;
   • Postproduction: documentation, post-mortem, publication, external pitching/communication.

Teaching Methods
Seminars, Project

Prerequisite Subjects
---

Assessment Methods
Prototype, documentation, presentation

Prerequisites for CP
Prototype, documentation, presentation

Used in Other Courses
---

Significance of Module Grade for Final Grade
<table>
<thead>
<tr>
<th>7.69%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Module Director(s) and Module Instructor(s)</strong></td>
</tr>
<tr>
<td>Module Director(s): Prof. Dr. Emmanuel Guardiola, Prof. Odile Limpach</td>
</tr>
<tr>
<td>Module Instructor(s): Prof. Björn Bartholdy (Media Design), Prof. Bernd Diemer (Game Design), Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr. Lisa Gotto (Media and Game Studies), Prof. Dr. Emmanuel Guardiola (Game Design), Prof. Markus Hettlich (Game Informatics), Prof. Nanette Kaulig (3D Animation &amp; CG Art for Games), Prof. Dr. Cécile Le Prado (Sound Design for Games), Prof. Odile Limpach (Economics &amp; Entrepreneurship for Games)</td>
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</table>

**Other Information**
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# REFLECTION & COMMUNITY 6

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<tr>
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<th>Workload</th>
<th>Credits</th>
<th>Semester</th>
<th>Frequency</th>
<th>Duration</th>
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<tbody>
<tr>
<td>BA.022</td>
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<td>5 ECTS</td>
<td>6</td>
<td>Annual</td>
<td>16 weeks</td>
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<table>
<thead>
<tr>
<th>Courses</th>
<th>Contact Hours</th>
<th>Self-Study</th>
<th>Size of Groups</th>
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</thead>
<tbody>
<tr>
<td>1) Individual and Group Mentoring</td>
<td>15 h</td>
<td>15 h</td>
<td>1-15</td>
</tr>
<tr>
<td>2) Game Lab Lectures</td>
<td>20 h</td>
<td>10 h</td>
<td>150-200</td>
</tr>
<tr>
<td>3) English for Game Developers</td>
<td>15 h</td>
<td>15 h</td>
<td>35-40</td>
</tr>
<tr>
<td>4) Work Groups</td>
<td>10 h</td>
<td>20 h</td>
<td>3-15</td>
</tr>
<tr>
<td>5) Profi² Week</td>
<td>15 h</td>
<td>15 h</td>
<td>15-30</td>
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</tbody>
</table>

## Learning Outcomes / Competencies

On successful completion of this module students will have:

- deepened their identity and confidence as game artists, game designers, or game programmers through individual and group mentoring from professors in their area of specialization;
- broadened their horizons as well as attained key skills in areas such as self-reliance, organization, teamwork, communication, and language through lectures from theory and practice, interdisciplinary and inter-semester collaboration, and English classes.

## Module Content

1) Individual and Group Mentoring: with a main focus on student artistic and professional development in their respective area of specialization (Game Arts, Game Design, or Game Programming).
2) Game Lab Lectures: 10 to 12 guest lectures offering a variety of perspectives from both game development and game studies.
3) English for Game Developers: Content is highly dependent on students’ needs and requirements in the sixth semester. Topics might include, among other things, technical English, academic and professional presentation, academic and creative writing.
4) Work Groups: In these self-organized groups, students contribute to CGL’s unique culture and community. Among others things, these groups support CGL’s endeavors in the areas of conferences, exhibitions, publishing, research, public relations, collecting and archiving of games and media, etc.
5) Profi² Week: Within the university wide Profi² Week students can choose an interdisciplinary and/or project-oriented course in or outside CGL.

## Teaching Methods

Lectures, seminars, group work, individual and group mentoring

## Prerequisite Subjects

---

## Assessment Methods

---

## Prerequisites for CP

Active Participation

## Used in Other Courses
Parts of the module, i.e. the Game Lab Lectures, Work Groups and Profi² Courses are open to all CGL students. Mentoring and English are exclusively offered to BA Digital Games students.

**Significance of Module Grade for Final Grade**

0%

**Module Director(s) and Module Instructor(s)**

Module Director(s): Prof. Björn Bartholdy
Module Instructor(s): Prof. Björn Bartholdy (Media Design), Prof. Bernd Diemer (Game Design), Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr. Lisa Gotto (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. Cécile Le Prado (Sound Design for Games), Prof. Odile Limpach (Economics & Entrepreneurship for Games)

**Other Information**

Be aware that Mentoring as well as English classes are held for students in their third year of study, whereas Game Lab Lectures, Work Groups and Profi² Courses take place in inter-semester groups.
MANDATORY CORE ELECTIVE MODULE 4.1 GAME ARTS

<table>
<thead>
<tr>
<th>ID</th>
<th>Workload</th>
<th>Credits</th>
<th>Semester</th>
<th>Frequency</th>
<th>Duration</th>
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<tbody>
<tr>
<td>BA.023.1</td>
<td>180 h</td>
<td>6 ECTS</td>
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<td>Annual</td>
<td>4.8 Weeks</td>
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Courses
Game Arts IV

<table>
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<tr>
<th>Contact Hours</th>
<th>Self-Study</th>
<th>Size of Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 h</td>
<td>130 h</td>
<td>10-15</td>
</tr>
</tbody>
</table>

Learning Outcomes / Competencies
Students acquire theoretical and practical competencies essential to their specialization in Game Arts. They will discuss game arts-related topics concerning the various Bachelor Projects and improve upon/optimize their work. On successful completion of this module students will have:

- deepened their knowledge in the Art and Design discourse;
- extended their knowledge in the field of (digital) portfolios;
- consolidated their artistic abilities and sound characterization.

Module Content
- BA Game Art Thesis Colloquium: concept, design, realization, audio
- Portfolio and Presentation
- Sound design relevant to student BA Art projects

Teaching Methods
Seminars, Tutorial

Prerequisite Subjects
BA.019.1 (The examination board decides on any exceptions.)

Assessment Methods
Homework or course work, documentation, presentation, practical exercises

Prerequisites for CP
Active participation, documentation (digital), presentation

Used in Other Courses
---

Significance of Module Grade for Final Grade
4.62%

Module Director(s) and Module Instructor(s)
Module Director(s): Prof. Björn Bartholdy
Module Instructor(s): Prof. Björn Bartholdy (Media Design), Prof. Nanette Kaulig (3D Animation & CG Art for Games), Prof. Dr. Cécile Le Prado (Sound Design for Games)

Other Information
---
**MANDATORY CORE ELECTIVE MODULE 4.2 GAME DESIGN**

<table>
<thead>
<tr>
<th>ID</th>
<th>Workload</th>
<th>Credits</th>
<th>Semester</th>
<th>Frequency</th>
<th>Duration</th>
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<td>BA.023.2</td>
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<td>6 ECTS</td>
<td>7</td>
<td>Annual</td>
<td>5 Weeks</td>
</tr>
</tbody>
</table>

**Courses**
- On demand Game Design corresponding to BA-Thesis Projects

**Contact Hours**
- Contact Hours: 50 h
- Self-Study: 130 h

**Size of Groups**
- 10-15

**Learning Outcomes / Competencies**

Students acquire practical competencies and skills and theoretical knowledge essential to their BA projects. On successful completion of this module students will:

- have applied appropriate research and analytical skills to create mechanics and aesthetics that correspond to the intended game design targets of their BA projects;
- demonstrate reflection, judgment, and creativity in solving theoretical and aesthetic problems related to their BA project;
- have analyzed digital games relevant to their BA projects and used that research to improve on their BA projects.

**Module Content**

1) Practical answers and solutions to questions and problems arising in the development of student BA projects.
2) Theoretical reflection of questions and problems arising in the development of student BA projects.
3) Analyses of historical and contemporary games relevant to student BA projects.
4) Sound Design relevant to student BA game design projects.

**Teaching Methods**

Lecture, seminar, tutorial, practical exercises

**Prerequisite Subjects**

BA.0019.2 (The examination board decides on any exceptions.)

**Assessment Methods**

Homework or course work, presentation, practical exercises, documentation, written test or oral exam

**Prerequisites for CP**

Active participation, completion of homework, course work or practical exercises

**Used in Other Courses**

---

**Significance of Module Grade for Final Grade**

4.62%

**Module Director(s) and Module Instructor(s)**

Module Director(s): Prof. Dr. Emmanuel Guardiola
Module Instructor(s): Prof. Bernd Diemer (Game Design), Prof. Dr. Emmanuel Guardiola (Game Design), Prof. Dr. Cécile Le Prado (Sound Design for Games), Carmen Johann, Katharina Tillmanns

**Other Information**

---
## MANDATORY CORE ELECTIVE MODULE 4.3 GAME PROGRAMMING

<table>
<thead>
<tr>
<th>ID</th>
<th>Workload</th>
<th>Credits</th>
<th>Semester</th>
<th>Frequency</th>
<th>Duration</th>
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<tbody>
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<td>BA.023.3</td>
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<td>Annual</td>
<td>4.8 Weeks</td>
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**Courses**
- Game Programming IV

<table>
<thead>
<tr>
<th>Contact Hours</th>
<th>Self-Study</th>
<th>Size of Groups</th>
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</thead>
<tbody>
<tr>
<td>50 h</td>
<td>130 h</td>
<td>10-15</td>
</tr>
</tbody>
</table>

### Learning Outcomes / Competencies
On successful completion of this module students will have:
- strengthened their practical skills in the field of game development;
- gained theoretical knowledge essential to their BA projects;
- improved their knowledge of the game development process by analyzing different approaches to certain technical problems based on their BA work;
- improved their competencies to analyze recent technology in the field of game programming;
- researched the evolution of hardware devices related to their BA projects;
- consolidated their knowledge in the field of interactive audio.

### Module Content
1) Discussion of practical solutions and problems in the development process of the student BA projects.
2) Theoretical analyses of problem solving approaches.
3) Analysis and discussion of game technologies and advancements in the field of game programming related to student BA projects.
4) Sound Design: sound implementation relevant to student BA projects.

### Teaching Methods
Lecture, seminar, tutorial, practical exercises

### Prerequisite Subjects
BA.019.3 (The examination board decides on any exceptions.)

### Assessment Methods
Homework or course work, presentation, practical exercises, documentation, written test or oral exam

### Prerequisites for CP
Active participation, completion of homework, course work or practical exercises

### Used in Other Courses
---

### Significance of Module Grade for Final Grade
4.62%

### Module Director(s) and Module Instructor(s)
Module Director(s): Prof. Markus Hettlich
Module Instructor(s): Prof. Markus Hettlich (Game Informatics), Prof. Dr. Cécile Le Prado (Sound Design for Games), Gereon Vienken, Jonas Zimmer

### Other Information
---
BACHELOR PROJECT

<table>
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<tr>
<th>ID</th>
<th>Workload</th>
<th>Credits</th>
<th>Semester</th>
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<tbody>
<tr>
<td>BA.024</td>
<td>360h</td>
<td>12</td>
<td>7</td>
<td>Annual</td>
<td>17 weeks</td>
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Courses
Project Work

<table>
<thead>
<tr>
<th>Contact Hours</th>
<th>Self-Study</th>
<th>Size of Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>360 h</td>
<td></td>
<td>1-5</td>
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</table>

Learning Outcomes / Competencies

On successful completion of this module students will be able to:

- initiate and realize a comprehensive development and/or research project – individually or collaboratively;
- use academic sources, apply scholarly and scientific methods, and present and reflect their own work adequately in a written thesis.

Module Content

Depending on the topic and focus of their BA project, students develop a theoretical or empirical approach, design an artistic concept, realize a prototype. (See examination regulations.)

Teaching Methods

Individual work or group work

Prerequisite Subjects

180 ECTS (The examination board decides on any exceptions.)

Assessment Methods

Prototype, thesis

Prerequisites for CP

Prototype, thesis

Used in Other Courses

---

Significance of Module Grade for Final Grade

9.23%

Module Director(s) and Module Instructor(s)

Module Director(s): Prof. Björn Bartholdy, Prof. Dr. Gundolf S. Freyermuth
Module Instructor(s): Prof. Björn Bartholdy (Media Design), Prof. Bernd Diemer (Game Design), Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr. Lisa Gotto (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. Cécile Le Prado (Sound Design for Games), Prof. Odile Limpach (Economics & Entrepreneurship for Games)

Other Information

An information session on the structure of the Bachelor Project will be offered at the beginning of the semester. More information and a registration form can be found in Spaces. BA.024 has to be studied in combination with BA.025.
COLLOQUIUM/PRESENTATION

<table>
<thead>
<tr>
<th>ID</th>
<th>Workload</th>
<th>Credits</th>
<th>Semester</th>
<th>Frequency</th>
<th>Duration</th>
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</thead>
<tbody>
<tr>
<td>BA.025</td>
<td>150</td>
<td>5</td>
<td>7</td>
<td>Annual</td>
<td>17 weeks</td>
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</table>

Courses
1) Colloquium
2) Presentation of BA Project
3) Oral Examination

Contact Hours  
30 h  
30 h  
2 h  

Self-Study  
30 h  
30 h  
28 h  

Size of Groups  
5-15  
30  
1  

Learning Outcomes / Competencies
On successful completion of this module students will have:
• improved their capacity to narrow down research questions and development objectives;
• improved their ability to present their creative and academic work;
• improved their ability to defend, but also critically evaluate their own work;
• improved their ability to criticize the creative and academic work of their peers.

Module Content
The Colloquium offers BA students a platform to discuss their work with fellow students who share similar foci as well as to get constant feedback from their supervisors. The module is concluded by a presentation (in front of the whole CGL community) and an oral examination.

Teaching Methods
Mentoring, discussion, presentation

Prerequisite Subjects
180 ECTS (The examination board decides on any exceptions.)

Assessment Methods
Presentation, oral examination

Prerequisites for CP
Active participation, presentation, oral examination

Used in Other Courses
-

Significance of Module Grade for Final Grade
3.85%

Module Director(s) and Module Instructor(s)
Module Director(s): Prof. Dr. Gundolf S. Freyermuth, Prof. Björn Bartholdy
Module Instructor(s): All

Other Information
BA.025 has to be studied in combination with BA.024.
## REFLECTION & COMMUNITY 7

<table>
<thead>
<tr>
<th>ID</th>
<th>Workload</th>
<th>Credits</th>
<th>Semester</th>
<th>Frequency</th>
<th>Duration</th>
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<td>150h</td>
<td>5 ECTS</td>
<td>7</td>
<td>Annual</td>
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### Courses
- Individual and Group Mentoring

<table>
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<th>Contact Hours</th>
<th>Self-Study</th>
<th>Size of Groups</th>
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<tbody>
<tr>
<td>50 h</td>
<td>100 h</td>
<td>1-15</td>
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### Learning Outcomes / Competencies
On successful completion of this module students will have:

- expanded and improved their portfolio;
- developed a clearer perspective on their own professional and/or academic future.

### Module Content
Individual and group mentoring with a focus on student portfolios as well as future careers, both professional and academic.

### Teaching Methods
Individual and group mentoring

### Prerequisite Subjects
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### Assessment Methods
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### Prerequisites for CP
Active participation

### Used in Other Courses
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### Significance of Module Grade for Final Grade
0%

### Module Director(s) and Module Instructor(s)
Module Director(s): Prof. Björn Bartholdy
Module Instructor(s): Prof. Björn Bartholdy (Media Design), Prof. Bernd Diemer (Game Design), Prof. Dr. Gundolf S. Freyermuth (Media and Game Studies), Prof. Dr. Lisa Gotto (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. Cécile Le Prado (Sound Design for Games), Prof. Odile Limpach (Economics & Entrepreneurship for Games)

### Other Information
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