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Qualification Goals

Graduates of the Digital Film Design - Animation/VFX (Bachelor of Arts) Bachelor's degree program have the following specialist knowledge of the current state of teaching and research in their field of expertise.

They have (knowledge)

- a broad basic and overview knowledge of the design fundamentals.
- comprehensive knowledge of strategic-conceptual planning and manufacturing processes in the design and visualization of animation and VFX productions.
- essential knowledge of methodology, coordination and communication in selected areas of media management and know the basic tasks and functions within the team and project-oriented way of working.
- comprehensive knowledge in the evaluation and use of new technologies for the production of animation and VFX productions.

Graduates are able to (skills),

- assess and anticipate creative requirements related to the way in which technical implementation options are implemented.
- systematically analyze creative challenges and derive practical solutions.
- select and apply adequate artistic and creative methods and techniques.
- develop, implement and optimize application-related solutions based on a realistic and budget-based assessment basis.
- independently familiarize themselves with new technologies and software.
- identify, interpret and use relevant sources of expertise in technical and creative fields for their work.
- develop implementation proposals for the production of simple and complex visualization, animation and VFX and AR / VR productions.
- understand and assess the technical, creative, artistic and social frameworks involved in the production of animation and VFX productions.

The graduates can (competences)

- make rational decisions and critically address problems and potential solutions.
- find holistic and methodically efficient solutions for interdisciplinary issues as well.
- recognize and assess the ethical, ideological, social and moral consequences of their decisions.
- work constructively, purposefully and efficiently with other people in different professional situations.
- work effectively, either individually or as a member of a project team, taking into account internal restrictions and external (customer) requirements.
- apply scientific methods in practice and implement innovative developments in everyday professional life.
- learn independently based on the Bachelor's degree and continue to educate themselves.

Concept for the Degree Program

The program comprises seven semesters (standard period of study) with a lecture period of 20 weeks in the semester. It is a full-time study program and graduates with a Bachelor of Arts. The Bachelor Degree Program Digital Film Design comprises a total of 210 ECTS credits.

An entrance examination examines the basic requirements in the logical, technical, creative and artistic fields. This ensures a homogeneous qualification of the first year students.

The subject areas of study have been designed to provide students with solid design, software engineering, technological and management skills to master the diverse professional demands placed on animation and VFX professionals.

The following subject areas are included in the program:

1. General Studies (Interdisciplinary Aspects, Industry Skills)
2. Design (Design Principles, Drawing)
3. Film Design and Staging (Camera and Light composition, Compositing, Film analysis)
4. Computer Graphics (VFX History, Modeling, Shading, Rendering)
5. Animation (Character Animation)
6. Immersive Media
7. Projects (at least 4 large Projects)
8. Practical Semester
9. Bachelor Degree

Semester 1 // Basics of Design, introduction to digital image processing and computer graphics

The students learn and develop important design principles from the areas of visualization, typography, digital image processing, layer-based compositing and photography. They deal particularly intensively with the theory of signs, color and form theory and with perspective drawing. In addition to the practice-oriented content, they deal with the general theoretical basics of scientific work, computer graphics and video and lighting technology. In the required individual and group submissions, students learn the basics of self and team management. You will also gain your first practical experience in the 3D program on the subjects of modeling, shading, texturing, animation, lighting and rendering.

Semester 2 // Extended basics of three-dimensional design and basics of dramaturgy

In this semester the students learn other important methods and work steps in the 3D program. As an alternative to layer-based compositing, the students receive an introduction to node-based compositing. The students take the first step towards dramaturgy and staging in the drawing I module (storyboarding and storytelling), in which the basic patterns of various narrative structures for short films and techniques for creating a meaningful storyboard are conveyed. At the end of the semester, the students work exclusively on their solo film project.

Semester 3 // In-depth fundamentals

The students deepen the basics they have already learned and expand their skills in the areas of 3D sculpting based on a 2D template, matchmoving and look development. In the modules Look Development / 3D Tracking

and Character Animation 1 a special focus is placed on the development of different looks (from cartoon to photo-realism) and character animation.

In the group project at the end of the semester, the students practice applying their skills to the group and further developing their team skills. The basics for this are laid in the project management lecture. The size of the group is usually 2-3 people per project group.

Semester 4 // In-depth fundamentals

In addition to further specializations in 3D animation and simulation, the students get to know Houdini, a second 3D software. With Augmented Reality (AR) and Virtual Reality (VR) new technologies are coming to the students in order to expand their specialist knowledge accordingly.

In the film analysis lecture, the students discuss the specifics of the different film genres and analyze films according to their narrative patterns, the montage and their characteristics. The requirements for technical animations, such as B. Machines and an introduction to the Python scripting language in relation to rigging is also part of the 4th semester.

In the group project at the end of the semester, the students can further strengthen their conceptual and practical skills. The size of the group is usually 3-4 people per project group.

Semester 5 (oder 6) // In-depth fundamentals, Immersive Media

The focus this semester is on immersive media (360°, virtual reality, and games) and advanced character animation. The basics and in-depth knowledge learned are applied to the immersive media and deepened accordingly. In the VFX in Practice III module, the focus is on the interactions between Real and CGI. In addition, there is a specialization in procedural work techniques in Houdini.

This semester is also concluded with group projects, in which care is taken that the projects meet the current requirements of professional animation and VFX or AR / VR production.

Semester 6 (or 5) // Internship semester

In the practical semester, students work full-time for at least 20 weeks in a company in the animation or VFX industry. When looking for, selecting and applying to potential employers, students receive active support from the career service of the Mediadesign Hochschule. Learned basics can be used in real projects. During the internship, the students can get to know their preferences and think about possible topics for their bachelor thesis. In a written thesis and a presentation (colloquium), the students document and report on their main activities during the practical semester.

Semester 7 // Bachelor Thesis (Bachelor of Arts)

The focus in the final semester is on the preparation of the bachelor thesis, which consists of two components. In a written, theoretical part, a self-selected problem is analyzed, the problem focus is narrowed down and possible solutions are well-prepared. This part is more scientifically investigative and shows the ability of the students as future animation and VFX specialists to work problem-oriented and innovatively. The practical part shows the most suitable proposed solution for the problem focus and documents the creative path and its variations.

As an alternative, the students can also create a final film. The type of production and the workflows used in production must be documented and described in a written part. In the colloquium, the students present and defend their bachelor thesis.

Complementary topics of this semester are business formation and research in computer graphics. In the case studies, the students deal with possible Bachelor topics and prepare them scientifically as an exercise for the actual Bachelor thesis.

Subject Areas and Modules

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| Subject area | General Studies | DFD 1. |
| Module | Scientific Work/ Rhetoric and Presentation Techniques | DFD 1.1 |

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|--|--|------------------------|
| Responsible professor | Prof. Thomas Gronert | |
| Frequency | Once in the academic year | |
| Usability | In the bachelor's degree programs Game Design and Digital Film Design | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | e. g. 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 1 | |
| Prerequisites | none | |
| Teaching form | 50% - Lecture // 50% - Seminar | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Written: Seminar paper (25.000 characters incl. blank spaces +/- 10 %) Presentation of the term paper: Independent and freely delivered presentation using PowerPoint (15 minutes). | |
| Grading scheme | Undifferentiated | |

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| Learning outcomes and competencies | <p>The students know and understand scientific work as a methodical approach for the development of creative processes.</p> <p>They are able to</p> <ul style="list-style-type: none"> ▪ structure conceptual work methodically and systematically according to scientific criteria; ▪ record and differentiate the terms and categories of scientific literature (e.g. dissertations, essays in journals); ▪ find, substantiate and formulate topics for a scientific paper; ▪ carry out research in scientific databases and online catalogs and formulate queries optimally in search engines; |
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| | <ul style="list-style-type: none"> ▪ assess the problem of plagiarism in writing a scientific paper and the consequences of incorrect citation; ▪ exchange views on scientific topics and issues; ▪ structure a scientific paper logically and write it according to the basic rules of reasoning and scientific requirements; ▪ develop different media requirement profiles according to conceptions. <p>Students are able to,</p> <ul style="list-style-type: none"> ▪ recognize and distinguish rhetorical devices and use them for different purposes. ▪ to negotiate and to convince argumentatively. ▪ prepare and conduct presentations professionally. |
| <p>Contents</p> | <ol style="list-style-type: none"> 1. Scientific writing <ul style="list-style-type: none"> ▪ logic and reasoning ▪ topic analysis ▪ structure of scientific papers ▪ plagiarism ▪ style of writing and formulation 2. Literature <ul style="list-style-type: none"> ▪ Literature research ▪ read and understand scientific literature 3. Formal requirements <ul style="list-style-type: none"> ▪ citation and sources ▪ the bibliography ▪ structure of chores ▪ structure of documentation ▪ structure of concepts 4. Basics of rhetoric <ul style="list-style-type: none"> ▪ Argue, discuss, convince, manipulate ▪ Free speech techniques 5. Presentation types and techniques |

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| Subject area | General Studies | DFD 1 |
| Module | Project Management | DFD 1.2 |

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|--|--|------------------------|
| Responsible professor | Prof. Thomas Gronert | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | e. g. 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 3 | |
| Prerequisites | none | |
| Teaching form | 20% - Lecture // 50% - Seminar // 30% Practice | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Written: Preparation of a project plan incl. calculation | |
| Grading scheme | Differentiated (at least the grade 4,0) | |

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| Learning outcomes and competencies | <p>The students know and understand how to</p> <ul style="list-style-type: none"> ▪ abstract the previously acquired artistic and technical skills in terms of workflow and pipeline of a 3D animated film production; ▪ solve tasks of a technical / artistic production with problem-oriented and networked thinking; ▪ create a VFX breakdown based on a script scenario, and calculate it with regard to time; ▪ determine the internal costs of a business operation; ▪ calculate the costs for different project types (2D / 3D animation project, VFX project), ▪ calculate different approaches for the implementation of projects and to focus on the budget of the customer; ▪ design and implement a project controlling; ▪ document and recalculate a project (profit and loss determination). |
| Contents | 1. Create VFX breakdowns based on script examples |

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| | <ol style="list-style-type: none">2. Build a basic VFX production pipeline3. Timing and budgeting as well as implementation of animation and VFX projects in targeted workflows4. Project management and team building5. Preparation of calculations for different animation and VFX productions |
| Recommended reading | <p>Michels Benjamin: Projektmanagement Handbuch – Grundlagen mit Methoden und Techniken für Einsteiger; CreateSpace Independent Publishing Platform (21. Oktober 2015)</p> <p>Charles Finance, Susan Zwerman (2009): The visual Effects Producer: Understanding the Art and Business of Vfx</p> <p>Eran Dinur (2017): The Filmmaker’s Guide to Visual Effects: The Art and Techniques of VFX for Directors, Producers, Editors and Cinematographers</p> |

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| Subject area | General Studies | DFD 1 |
| Module | Business Start-Up | DFD 1.3 |

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| Responsible professor | Prof. Thomas Gronert | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | e. g. 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 7 | |
| Prerequisites | keine | |
| Teaching form | 50% - Lecture // 50% - Practice | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Written: Preparation of a business plan | |
| Grading scheme | Differentiated (at least the grade 4,0) | |

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| Learning outcomes and competencies | <p>The students are able to</p> <ul style="list-style-type: none"> ▪ develop business models and write a business plan for them. ▪ evaluate the methods of corporate decision-making, referring to the numerous tools of corporate governance in their complex contexts; ▪ assess and use simple rights declarations; ▪ consider legal issues in the conception and calculation of media projects; ▪ include essential criteria of copyright and related rights, in planning and organizational measures in media productions. |
| Contents | <ol style="list-style-type: none"> 1. Basics <ul style="list-style-type: none"> ▪ Business Start-up ▪ Targeting and target systems ▪ Legal and corporate forms ▪ Development phases of a company ▪ Investment and financing 2. Corporate Leadership |

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| | <ul style="list-style-type: none"> ▪ Fundamentals of business management ▪ Strategic business management ▪ Business organization ▪ Controlling as a management tool ▪ Human Resource Management ▪ Quality Management <p>3. The most important legal issues</p> <ul style="list-style-type: none"> ▪ The copyright and publishing law ▪ Intellectual property ▪ Domain Law ▪ Other relevant rights for media productions |
| <p>Recommended reading</p> | <p>Nagl Anna (2013): Der Businessplan: Geschäftspläne professionell erstellen. Mit Checklisten und Fallbeispielen; Springer Gabler; 7. überarb. Aufl. 2014</p> <p>Dillerup R., Stoi R.: Unternehmensführung; Vahlen; 4. Aufl., 2013</p> <p>Bühler, Peter, Schlaich, Patrick, Sinner, Dominik: Medienrecht: Urheberrecht – Markenrecht – Internetrecht (Bibliothek der Mediengestaltung), 2018</p> <p>Fechner, Frank: Medienrecht: Lehrbuch des gesamten Medienrechts unter besonderer Berücksichtigung von Presse, Rundfunk und Multimedia; UTB GmbH; 17. Aufl. 2016</p> |

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|--------------|----------------------|----------------|
| Subject area | Design | DFD 2 |
| Module | Visualisation | DFD 2.1 |

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| Responsible professor | Prof. Michael Klein | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | e. g. 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 1 | |
| Prerequisites | keine | |
| Teaching form | 50% - Lecture // 50% - Practiceen | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Practical: Media product | |
| Grading scheme | Differentiated (at least the grade 4,0) | |

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| Learning outcomes and competencies | <p>The students are able to</p> <ul style="list-style-type: none"> ▪ make drawings after studying natural patterns and environments, light and shadow; ▪ create a clear and legible image by arranging surfaces, shapes and graphic structures; ▪ translate colors and shapes into pictorial compositions; ▪ apply the basic character theories (e.g. the presentation in perspective); ▪ select and implement presentation techniques for the presentation of own creative ideas; ▪ design and implement simple storyboards; ▪ understand and analyze the basic theoretical structures of visual signs; ▪ implement and reflect the elementary principles of visual signs in methodological studies; ▪ apply digital photo layout and photo montages precisely in methodical studies; ▪ design digital compositions and post-processing. |
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| <p>Contents</p> | <ol style="list-style-type: none"> 1. Visualisation <ul style="list-style-type: none"> ▪ Introduction to the theory of signs ▪ Syntactics, semantics, sigmatics ▪ Drawing perspective and spatial depth ▪ Studies of light and shadow ▪ Color theory and practice ▪ Forms and compositions ▪ Visualization and presentation techniques (e.g. storyboard) 2. Digital Image Processing <ul style="list-style-type: none"> ▪ Basic concept (Tools) ▪ Working with masks ▪ Color selection and color corrections ▪ Image montages |
| <p>Recommended reading</p> | <p>Hofmann, Armin: Methodik der Form- und Bildgestaltung: Aufbau – Synthese - Anwendung; Niggli; 5. Aufl., 2004</p> <p>Gurney, James: Color and Light: A Guide for the Realist Painter; Andrews McMeel Publishing (1794), 2010</p> <p>Alexander, Kerstin: Kompendium der visuellen Information und Kommunikation. Springer, Berlin, 2007</p> <p>Olpe, Peter: Zeichnen und Entwerfen. Niggli AG Verlag, 1997</p> <p>Ott, Alexander: Darstellungstechnik. Stiebener Verlag, 2004</p> <p>Marcie Begleiter: Storyboards, Vom Text zur Zeichnung zum Film; Zweitausendeins, Frankfurt am Main, 2003</p> <p>John Hart: The Art Of The Storyboard, A Filmmaker’s Introduction; Focal Press, 2008</p> |

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|--------------|-------------------|----------------|
| Subject area | Design | DFD 2 |
| Module | Typography | DFD 2.2 |

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|--|--|------------------------|
| Responsible professor | Prof. Michael Klein | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | e. g. 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 1 | |
| Prerequisites | keine | |
| Teaching form | 50% - Lecture // 50% - Practice | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Practical: Creation of a typographic music video | |
| Grading scheme | Differentiated (at least the grade 4,0) | |

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| Learning outcomes and competencies | <p>The students know and understand how to</p> <ul style="list-style-type: none"> ▪ analyze and apply the laws of word, sentence and line form; ▪ distinguish fonts, font classifications and font anatomies, use them purposefully and task-oriented; ▪ apply typographic rules and measurement systems; ▪ conceptualize and design typographic animations. |
| Contents | <ol style="list-style-type: none"> 1. Font families, fonts and their use 2. The dimensions and sizes 3. Room layout, design and proportion 4. Proportion and size 5. Picture and text 6. Text animations (in advertising, music videos, pros and cons) |

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| Recommended reading | <p>Korthaus Claudia: Typografie und Layout: Für Ausbildung, Studium und Praxis; Rheinwerk Design; Auflage: 5 (28. Juli 2016)</p> <p>Fuchs Julia: Wortgestalten: Visualisierung und Analyse kinetischer Typografie; Merz Akademie; Auflage: 1 (1. Dezember 2004)</p> <p>Ruder Emil: Typografie; Niggli; Auflage: Neuaufl. der Originalausgabe (9. August 2008)</p> |
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|--------------|----------------------------------|----------------|
| Subject area | Design | DFD 2 |
| Module | Drawing I (Storyboarding) | DFD 2.3 |

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|--|--|------------------------|
| Responsible professor | Prof. Thomas Gronert | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | e. g. 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 2 | |
| Prerequisites | none | |
| Teaching form | 50% - Lecture // 50% - Practice | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Practical: Media product (Storyboard for the self-developed idea (solo project)) | |
| Grading scheme | Undifferentiated | |

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| Learning outcomes and competencies | <p>The students are able to</p> <ul style="list-style-type: none"> ▪ use drawing techniques and expressive possibilities for visualization processes; ▪ reproduce figures and body parts proportionally; ▪ visualize stories using a storyboard. |
| Contents | <ol style="list-style-type: none"> 1. Introduction to drawing processes 2. Introduction Point – Line – Area 3. Body – Space 4. Measure, proportion, harmony 5. Structure, texture and ornament 6. Composition, Light and shadow 7. Abstraction – concretion 8. Introduction to storyboarding techniques |

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| | <p>9. Perspective drawing – representation of different camera settings</p> <p>10. Create storyboards</p> |
| <p>Recommended reading</p> | <p>Marcie Begleiter, Peter Robert (2003): Storyboard: Vom Text zur Zeichnung zum Film</p> <p>Marcos Mateu-Mestre (2010): Framed Ink: Drawing and Composition for Visual Storytellers</p> <p>Marcos Mateu-Mestre (2016): Framed Perspective Vol. 1: Technical Perspective and Visual Storytelling</p> <p>Huston Steve: Menschliche Figuren zeichnen wie die Meister: Endlich verständlich: Licht, Perspektive Anatomie; Edition Michael Fischer; Auflage: 1 (17. November 2016)</p> <p>Boerboom Peter, Proetel Tim: Figur: Menschen zeichnen: entdecken, skizzieren, experimentieren; Haupt Verlag; Auflage: 1. Auflage 2016 (7. März 2016)</p> |

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| Subject area | Design | DFD 2 |
| Module | Drawing II (Character Design, Sculpting) | DFD 2.4 |

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|--|---|------------------------|
| Responsible professor | Prof. Thomas Gronert | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | e. g. 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 3 | |
| Prerequisites | keine | |
| Teaching form | 50% - Lecture // 50% - Practice | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Practical: Media project (2D conception of a character/creature and 3D implementation in the sculpting program) | |
| Grading scheme | Differentiated (at least the grade 4,0) | |

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| Learning outcomes and competencies | <p>Students are able to</p> <ul style="list-style-type: none"> ▪ create concept art, character design and their first 3D sculpting models using digital means; ▪ develop characters based on a story; ▪ develop a character bible and implement it in character design. |
| Contents | <ol style="list-style-type: none"> 1. Creation of character design and creature designs as a 2D template 2. Implementation of 2D designs as 3D models in a 3D sculpting program 3. Creation and implementation of 2D textures for the 3D models |
| Recommended reading | <p>Marc Taro Holmes (2016): Designing Creatures and Characters Publishing 3dtotal: Beginner´s Guide to Sketching: Character, Creatures and Concepts; 3DTotal Publishing (1. September 2015)</p> <p>Spencer Scott: ZBrush Creature Design: Creating Dynamic Concept Imagery for Film and Games; John Wiley & Sons; Auflage: Pap/DVD (4. Mai 2012)</p> |

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| | <p>Legaspi Chris: Anatomy for 3D Artists: The Essential Guide for CG Professionals; 3DTot tal Publishing (15. Dezember 2015)</p> <p>Books Doress (2018): Monsters from the Imagination: Best Creatures by Global Artists</p> |
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| Subject area | FilmDesign and Staging | DFD 3 |
| Module | Video and Light Technique, Layer based Compositing | DFD 3.1 |

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| Responsible professor | Prof. Michael Klein | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 1 | |
| Prerequisites | keine | |
| Teaching form | 50% - Lecture // 50% - Practice | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Practical: Media product (Conception and realization of various VFX scenes with real film material) | |
| Grading scheme | Differentiated (at least the grade 4,0) | |

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| Learning outcomes and competencies | <p>The students know and understand,</p> <ul style="list-style-type: none"> ▪ the underlying system of digital video and lighting technology; ▪ how digital cameras capture and store images; ▪ how the camera works as a basis for the creative work; ▪ the underlying system of digital video technology; ▪ how to use and handle various classic level-based compositing methods efficiently for various cinematic requirements. |
| Contents | <ol style="list-style-type: none"> 1. Introduction to video and lighting technology 2. Introduction to Compositing Software <ul style="list-style-type: none"> ▪ Prepare and import footages ▪ Manage projects ▪ Working and planning methods 3. Layers in still pictures |

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| | <ul style="list-style-type: none"> ▪ Hierarchy of levels ▪ Compositing ▪ Working with masks and transparency ▪ Applying effects <p>4. Layers in the moving picture</p> <p>5. Keyframing</p> <p>6. Application of motion tracking and stabilizing</p> <ul style="list-style-type: none"> ▪ Motion Path ▪ 3D Tracking ▪ Fine tuning ▪ Render and output settings ▪ Rendering and encoding <p>7. Emotional and visual modes of action Wirkweisen</p> <p>8. Quality criteria for layer-based compositings</p> |
| <p>Recommended reading</p> | <p>Fontaine, Philippe: Adobe After Effects CC: Das umfassende Handbuch – aktuell zur CC 2015; Rheinwerk Design; Auflage: 1 (28. Dezember 2015)</p> <p>Lanier, Lee: Advanced Visual Effects Compositing: Techniques for Working with Problematic Foodays; Focal Pr (13. Februar 2017)</p> <p>Bühler, Peter: AV-Medien: Filmgestaltung – Audiotechnik – Videotechnik (Bibliothek der Mediengestaltung); Auflage 1 (24. April 2018)</p> <p>Schmidt, Ulrich: Professionelle Videotechnik: Grundlagen, Filmtechnik, Fernsehtechnik, Geräte- und Studioteknik in SD, HD, DI, 3D; Auflage 1 (23. Juli 2013)</p> <p>Baer, Roland; Seifert, Dirk; Barfuß, Meike: Beleuchtungstechnik: Grundlagen; Auflage: 4 (1. September 2016)</p> |

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|--------------|---|----------------|
| Subject area | Film Design and Staging | DFD 3 |
| Module | Camera. Light composition, assembly technology | DFD 3.2 |

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|--|---|------------------|
| Responsible professor | Prof. Michael Klein | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 2 | |
| Prerequisites | keine | |
| Teaching form | 50% - Lecture // 50% - Practice | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Practical: Media product (Real shot short film) | |
| Grading scheme | Differenziert Mindestens die Note 4,0) | |

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| Learning outcomes and competencies | <p>The students are able to,</p> <ul style="list-style-type: none"> ▪ develop precise picture presentations in terms of technology and content; ▪ understand the functionality of a camera as a foundation for their creative work; ▪ develop technically precise and content-related image staging; ▪ make settings in accordance with design criteria; ▪ apply and implement the basic rules of lighting design for film and television in their own concepts; ▪ analyze audiovisual works regarding their montages; ▪ recognize and understand the modes of communication and genres that have changed through the use of assembly techniques; ▪ plan and implement assembly techniques for their own creative work. |
| Contents | <p>1. Camera</p> <ul style="list-style-type: none"> ▪ Setup of a camera and camera handling ▪ Introduction to optics |

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| | <ul style="list-style-type: none"> ▪ Technical features of the camera ▪ Setting sizes ▪ Design and staging in cinematic space ▪ Narrative postures of the camera <p>2. Light</p> <ul style="list-style-type: none"> ▪ Physical basics and perception of light ▪ Material and light ▪ Light position ▪ Lighting ▪ Light character ▪ Light sources and their specifics ▪ Lighting concepts in cinematic genres ▪ Lighting principles on sets and decorations <p>3. Installation</p> <ul style="list-style-type: none"> ▪ History of film montages ▪ Assembly techniques and assembly concepts ▪ Genre-specific types of installation ▪ Dramaturgy and staging by montages |
| <p>Recommended reading</p> | <p>Dunker, Achim: eins zu hundert: Die Möglichkeiten der Kameragestaltung; UVK Verlagsgesellschaft; Auflage: 2., überarbeitete Auflage (15. August 2012)</p> <p>Vineyard Jeremy: Crashurs Filmauflösung: Kameratechniken und die Bildsprache des Kinos; ZWEITAUSENDEINS (1. Oktober 2010)</p> <p>Kenworthy Christopher: Master Shots, Volume 2: 100 Ways to Shoot Great Dialogue Scenes; Michael Wiese Productions (26. August 2011)</p> |

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|--------------|--------------------------------|----------------|
| Subject area | Film Design and Staging | DFD 3 |
| Module | Node-based Compositing | DFD 3.3 |

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| Responsible professor | Prof. Michael Klein | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 2 | |
| Prerequisites | keine | |
| Teaching form | 50% - Lecture // 50% - Practice | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Practical: Media product (Conception and realization of various VFX scenes with real film material and animated assets) | |
| Grading scheme | Differentiated (at least the grade 4,0) | |

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| Learning outcomes and competencies | <p>The students are able to</p> <ul style="list-style-type: none"> ▪ understand the basic methods of node-based work and apply it to their own ideas; ▪ work in the linear color space; ▪ generate a coherent overall result from different sources (real film, animations...); ▪ integrate a node-based Workflow into a VFX Pipeline. |
| Contents | <ol style="list-style-type: none"> 1. Node-based work vs. layer-based work <ul style="list-style-type: none"> ▪ Concept of the "node" and resulting working methods 2. Introduction to the working environment <ul style="list-style-type: none"> ▪ Surface and menus ▪ Workspace ▪ Handling materials from different sources |

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| | <p>3. Retouching</p> <ul style="list-style-type: none">▪ Rotoscoping▪ Wire Removal▪ Handling of multichannel image files▪ Image files▪ Color management▪ 3d-Compositing and projections |
| Recommended reading | <p>Ganbar Ron: Nuke 101: Professional Compositing and Visual Effects; Peach Pit; Auflage: 2nd edition. (19. März 2014)</p> <p>Gress Jon: digital Visual Effects and Compositing; New Riders; Auflage: 01 (22. Oktober 2014)</p> <p>Brinkmann Ron: The Art and Science of Digital Compositing: Techniques for Visual Effects, Animation and Motion Graphics (24. Mai 2008)</p> |

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|--------------|--|----------------|
| Subject area | Film Design and Staging | DFD 3 |
| Module | Look Development - 2D/3D Tracking | DFD 3.4 |

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| Responsible professor | Prof. Michael Klein | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 3 | |
| Prerequisites | keine | |
| Teaching form | 50% - Lecture // 50% - Practice | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Practical: Tracking of different real film shots with the integration of photorealistic 3D elements | |
| Grading scheme | Differentiated (at least the grade 4,0) | |

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| Learning outcomes and competencies | <p>The students are able to</p> <ul style="list-style-type: none"> ▪ develop and implement different looks; ▪ understand and use different lighting models; ▪ texture, light and render photorealistic scenes; ▪ use 2D / 3D tracking in the layer- and node-based compositing system; ▪ plan and supervise real-time shots, which will later be used for 2 / 3D tracking; ▪ design 3D elements in a photo-realistic manner and integrate them convincingly into real images in the layer- and node-based compositing system. |
| Contents | <ol style="list-style-type: none"> 1. Advanced lighting and shading techniques 2. Recording and further processing of HDR panorama images for image-based rendering in the 3D software 3. Theoretical and practical use of marker-based and marker-less tracking methods |

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| | 4. Matchmoving, object tracking and camera stabilization as well as synthesis of camera paths. |
| Recommended reading | <p>Dobbert Tim: Matchmoving: The Invisible Art of Camera Tracking; John Wiley & Sons; Auflage: 2 (9. November 2012)</p> <p>Gress Jon: digital Visual Effects and Compositing; New Riders; Auflage: 1 (22. Oktober 2014)</p> <p>McDermott Wes: The PBR Guide: A Handbook for Physically Based Rendering; Auflage 1 (1. März 2018)</p> <p>Reinhard Erik, Heidrich Wolfgang, Debevec Paul, Pattanaik Sumanta, Ward Greg, Myszkowski Karol: High Dynamic Range Imaging: Acquisition, Display, and Image-Based Lighting; Auflage 2 (8. Juni 2010)</p> |

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|--------------|--------------------------------|----------------|
| Subject area | Film Design and Staging | DFD 3 |
| Module | Film Analysis | DFD 3.5 |

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| Responsible professor | Prof. Michael Klein | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | e. g. 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 4 | |
| Prerequisites | keine | |
| Teaching form | 20% - Lecture // 30 % - Seminar // 50% - Practice | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Written: Preparation of a written film analysis and presentation | |
| Grading scheme | Undifferentiated | |

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| Learning outcomes and competencies | <p>The students are able to</p> <ul style="list-style-type: none"> ▪ recognize the design of films based on their basic visual and auditory design and methodological context; ▪ analyze film sequences and films and evaluate them according to aesthetic, communicative and genre-specific aspects; ▪ make film analyses. |
| Contents | <ol style="list-style-type: none"> 5. Methods of film analysis 6. Movie genres 7. Development of film design and narrative 8. Analysis of narrative and dramaturgical aspects of different genres 9. Creation of various film analyses |
| Recommended reading | Faultstich Werner: Grundkurs Filmanalyse; UTB GmbH; Auflage: 3 (24. April 2013) |

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| | <p>Hickethier Knut: Film- und Fernsehanalyse; J.B. Metzler; Auflage: 5 (11. September 2012)</p> <p>Monaco James, Bock Hans-Michael: Film verstehen: Die wichtigsten Fachbegriffe zu Film und Neuen Medien; Rowohlt Taschenbuch Verlag; Auflage: 1, Überarbeitete Neuauflage (2. Mai 2011)</p> |
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| Subject area | Film Design and Staging | DFD 3 |
| Module | 360° Film and Virtual Reality | DFD 3.6 |

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| Responsible professor | Prof. Thomas Gronert | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | e. g. 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 6 | |
| Prerequisites | none | |
| Teaching form | 20% - Lecture // 30 % - Seminar // 50% - Practice | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Practical: Creation of a 360° film sequence | |
| Grading scheme | Differentiated (at least the grade 4,0) | |

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| Learning outcomes and competencies | The students are able to <ul style="list-style-type: none"> ▪ design and develop ideas and stories for 360 ° film and VR applications; ▪ implement the developed concepts technically. |
| Contents | <ol style="list-style-type: none"> 1. Perception in immersive media 2. Storytelling for immersive media 3. Use of modern VR technologies |
| Recommended reading | <p>Celine Tricart (2017): Virtual Reality Filmmaking: Techniques & Best Practices for VR Filmmakers</p> <p>John Bucher (2017): Storytelling for Virtual Reality</p> <p>Michael Wohl (2019): The 360° Video Handbook: A step-by-step guide to creating video for virtual reality (VR)</p> <p>Jonathan Tustain (2018): The Complete Guide to VR & 360 Photography: Make, Enjoy, and Share & Play Virtual Reality</p> |

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|--------------|---|----------------|
| Subject area | Computer Graphics | DFD 4 |
| Module | Basics of computer graphics, VFX history I | DFD 4.1 |

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|--|---|------------------------|
| Responsible professor | Prof. Michael Klein | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | e. g. 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 1 | |
| Prerequisites | none | |
| Teaching form | 50% - Lecture // 50% - Practice | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Written (exam, 90 minutes) | |
| Grading scheme | Differentiated (at least the grade 4,0) | |

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| Learning outcomes and competencies | <p>The students can</p> <ul style="list-style-type: none"> ▪ understand and apply the basics of computer graphics; ▪ understand the history of animated films and moving images, both in technical and motivational terms and in the social context with a special focus on motivation and contemporary reference systems such as politics, religion and economics; ▪ classify and understand the most important artists since the 19th century and their respective techniques and strategies; ▪ understand and evaluate the development of media technology, especially computer technology. |
| Contents | <p>1. Introduction to the basics of computer graphics</p> <ul style="list-style-type: none"> ▪ Geometry ▪ Topology ▪ Normals |

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| | <ul style="list-style-type: none"> ▪ Transform ▪ UV-Space ▪ Shading ▪ Animation ▪ Rendering <p>2. Basics of 3D-software</p> <ul style="list-style-type: none"> ▪ Interface and menus ▪ Workspace ▪ Viewport ▪ Tools ▪ Management of objects ▪ Management of projects ▪ Output formats <p>3. History of computer technology and optical media</p> <ul style="list-style-type: none"> ▪ Development of animation and animation film ▪ Artistic development of the animated film and important representatives |
| <p>Recommended reading</p> | <p>Hasche Eberhard, Ingwer Patrick: Game of Colors: Moderne Bewegtbildproduktion: Theorie und Praxis für Film, Video und Fernsehen; Springer Vieweg (10. Juni 2016)</p> <p>Prof. Tickoo Sham: Autodesk Maya 2017: A Comprehensive Guide; CADCIM Technologies; Auflage: 9 (20. Oktober 2016)</p> <p>Derakhshani Dariush: Introducing Autodesk Maya 2016: Autodesk Official Press; Sybex; Auflage: 1 (8. Juli 2015)</p> |

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|--------------|---|----------------|
| Subject area | Computer Graphics | DFD 4 |
| Module | Modellierung, Shading, Rendering | DFD 4.2 |

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|--|--|------------------------|
| Responsible professor | Prof. Frank Ringwald | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | e. g. 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 1 | |
| Prerequisites | none | |
| Teaching form | 50% - Lecture // 50% - Practice | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Practical: (Creation and rendering of a digital environment) | |
| Grading scheme | Differentiated (at least the grade 4,0) | |

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| Learning outcomes and competencies | <p>The students know and understand how to</p> <ul style="list-style-type: none"> ▪ work efficiently with 3D programs and how to model 3D objects taking mechanical and organic conditions into account; ▪ provide 3D objects with UV coordinates in different ways; ▪ assign material properties to 3D objects using shading and texturing; ▪ illuminate 3D objects and entire scenes artistically; ▪ render these scenes final or prepared for further processing. |
| Contents | <ol style="list-style-type: none"> 1. Dealing with various methods of modeling according to different operating conditions (poly, NURBS) 2. UV unwrapping with: projections, manual, automatic 3. Introduction to standard rendering systems 4. Creation of materials with the help of renderer-specific shading networks and various types of texture creation (image-based / procedural) 5. Bitmap-based texturing using 2D and 3D tools |

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| | <ol style="list-style-type: none">6. Lighting of the 3D scenes with specific light sources, ray tracing, global illumination and image based lighting7. Rendering of final images and sequences or individual or sequential multichannel files for later compositing |
| Recommended reading | <p>Hasche Eberhard, Ingwer Patrick: Game of Colors: Moderne Bewegtbildproduktion: Theorie und Praxis für Film, Video und Fernsehen; Springer Vieweg (10. Juni 2016)</p> <p>Prof. Tickoo Sham: Autodesk Maya 2019: A Comprehensive Guide; CADCIM Technologies; Auflage: 9 (20. Oktober 2019)</p> <p>Kelly Murdock: Autodesk Maya 2019 Basics Guide,;SDC Publications (24. April 2019)</p> |

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|--------------|---|----------------|
| Subject area | Computer Graphics | DFD 4 |
| Modulee | Character (Modeling, Rigging, Animation) | DFD 4.3 |

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| Responsible professor | Prof. Frank Ringwald | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | e. g. 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 2 | |
| Prerequisites | none | |
| Teaching form | 50% - Lecture // 50% - Practice | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Practical: Modeling, rigging and animation of extreme poses of a self-created figure. | |
| Grading scheme | Differentiated (at least the grade 4,0) | |

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| Learning outcomes and competencies | <p>The students are able to</p> <ul style="list-style-type: none"> ▪ model virtual two-legged characters with different means and methods of a 3D editor according to conceptual specifications and references; ▪ observe and implement the primative of an animation-capable geometry topology; ▪ meet special requirements for the UV unwrapping of characters; ▪ create complex skeleton rigs for animating two-legged characters; ▪ connect geometry and rig with the help of skinning methods; ▪ evaluate the production suitability of a rigged character through the animation of extreme poses. |
| Contents | <ol style="list-style-type: none"> 1. Evaluation and installation of reference images in preparation for modeling 2. Modeling techniques especially for suitable for characters 3. Observe an animation-capable topology 4. Layout out the texture coordinates of a character |

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| | <ol style="list-style-type: none"> 5. Creation of an adequate joint hierarchy 6. Installation of rig elements for animation with inverse and forward kinematics and switching between the two 7. Applying stretch and squash, including volume retention 8. Generation and linking of controller objects with the help of NURBS curves and constraints 9. Different skinning methods 10. Use of blend shapes for facial expressions and for correcting skinning 11. Animation of the character for test purposes under figure specific aspects as well as stability and performance aspects |
| <p>Recommended reading</p> | <p>Amin Jahirul: Beginner’s Guide to Character Creation in Maya; 3DTotal Publishing (12. Mai 2015)</p> <p>Prof. Tickoo Sham: Autodesk Maya 2019: A Comprehensive Guide; CADCIM Technologies; Auflage: 9 (20. Oktober 2019)</p> <p>Rodriguez David: Animation Methods – Rigging Made Easy: Rig your first 3D Character in Maya; CreateSpace Independent Publishing Platform (18. April 2013)</p> <p>Tina O’Hailey: Rig it Right! Maya Animation Rigging Concepts, 2nd edition; Routledge; Auflage: 2 (26. September 2018)</p> |

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|--------------|--|----------------|
| Subject area | Computer Graphics | DFD 4 |
| Module | Introduction to Simulation and Procedural Work Techniques | DFD 4.3 |

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|--|---|------------------------|
| Responsible professor | Prof. Frank Ringwald | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | e. g. 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 4 | |
| Prerequisites | none | |
| Teaching form | 50% - Lecture // 50% - Practice | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Practical: Creation and simulation of an environment destruction or animation of a character with hair and cloth simulation | |
| Grading scheme | Differentiated (at least the grade 4,0) | |

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| Learning outcomes and competencies | <p>Students are able to</p> <ul style="list-style-type: none"> ▪ integrate purely node-based 3D systems into their workflow and thus expand the functional scope of their project pipeline; ▪ use geometry caches (Alembic) and volume caches (VDB) to enable frictionless and lossless data flow between different 3D systems (exchange of models and animations); ▪ use different simulation environments and select them according to the type of application; ▪ analyze real phenomena and their processes visually and temporally and to collect reference material for own simulation tasks; ▪ process simulation results with a focus on their visual and animated/narrative effect; ▪ integrate procedurality in dealing with all digital data used and generated within a 3D scene as an important principle in their way of working; |
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| | <ul style="list-style-type: none"> ▪ pay particular attention to the flexible reusability of data in the form of digital assets; ▪ transfer and evaluate already known procedures into a procedural working environment. |
| <p>Contents</p> | <ol style="list-style-type: none"> 1. Different systems for different simulation tasks and the exchange of data between them. 2. Fragmentation of solid objects considering their shape and the underlying materiality 3. Creation and design of fur and hair with different tools (grooming) 4. Evaluation of the use of simulated textiles in 3D scenes and their shape design including the determination of fabric properties 5. Basic visualisation of fluids in different forms of existence and representation 6. Animation of realistic behavior of all these phenomena and their interaction with physical forces, objects and figures with the help of simulation as well as the artistic visual processing of the results 7. Principles of procedural digital workflow and dataflow in 3D systems 8. Introduction to a purely node-based 3D system and the specific ways of working with it in terms of procedural reusability |
| <p>Recommended reading</p> | <p>Susan Zwerman und Jeffrey A. Okun : The VES Handbook of Visual Effects: Industry Standard VFX Practices and Procedures; 10. April 2017</p> <p>William Michael Cunningham: The Magic of Houdini; 27. Dezember 2005</p> <p>Craig Zerouni: Houdini On the Spot: Time-Saving Tips and Shortcuts from the Pros (On The Spot {Series}); Focal Press; Auflage: 1 (26. Juli 2007)</p> |

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| Subject area | Computer Graphics | DFD 4 |
| Module | FX and Deepening of Procedural Work Techniques | DFD 4.5 |

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|--|---|------------------------|
| Responsible professor | Prof. Frank Ringwald | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | e. g. 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 6 | |
| Prerequisites | none | |
| Teaching form | 50% - Lecture // 50% - Practice | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Practical: Rendering of a complex FX shot | |
| Grading scheme | Differentiated (at least the grade 4,0) | |

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| Learning outcomes and competencies | <p>Students are able to</p> <ul style="list-style-type: none"> ▪ visualize complex physical phenomena and effects such as fire, smoke, explosions and liquids with the help of different calculation models. ▪ to do this, first carry out reference research and studies on the appearance and course of the phenomena. ▪ apply simulation technologies to individual characters or groups of characters (crowds) and thus animate procedural scene sequences. ▪ modify and design simulation results from an artistic point of view. ▪ combine a wide variety of effects in complex scenarios to produce impressive VFX shots according to dramaturgical specifications in purely digital form. ▪ adapt them to the specific visual aesthetics of a cinematic work by using different shading, lighting and rendering concepts. ▪ create their own software nodes using a scripting language or extend the functionality of existing ones. |
| Contents | 1. Presentation of different simulation solvers for different effects |

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| | <ol style="list-style-type: none">2. Investigation of the reference of various phenomena and transfer of the respective parameters to the simulation solvers3. Characters and crowd simulations4. Combination of single simulation solutions and creation of dependencies and sequences of simulations and the resulting effects5. Shading, lighting and rendering effects6. Introduction to the script language VEX and creation of new functionalities |
| Recommended reading | <p>Susan Zwerman und Jeffrey A. Okun : The VES Handbook of Visual Effects: Industry Standard VFX Practices and Procedures; 10. April 2017</p> <p>William Michael Cunningham: The Magic of Houdini; 27. Dezember 2005</p> <p>Craig Zerouni: Houdini On the Spot: Time-Saving Tips and Shortcuts from the Pros (On The Spot {Series}); Focal Press; Auflage: 1 (26. Juli 2007)</p> |

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|--------------|--------------------------------------|----------------|
| Subject area | Computer Graphics | DFD 4 |
| Module | Research in Computer Graphics | DFD 4.6 |

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| Responsible professor | Prof. Frank Ringwald | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | e. g. 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 7 | |
| Prerequisites | none | |
| Teaching form | 50% - Seminar // 50% - Practice | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Written: Term paper 10.000 characters (incl. spaces +/- 10%) | |
| Grading scheme | Undifferentiated | |

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| Learning outcomes and competencies | <p>The students are able to</p> <ul style="list-style-type: none"> ▪ independently research or develop new or previously unexamined approaches to problems in all areas of digital film design. ▪ evaluate different solutions, working methods or presentation forms under creative, technical or efficiency-oriented aspects. ▪ integrate the solutions found into the usual workflow. ▪ follow new results of basic research in all disciplines relevant for film design and to prepare them for creative use. ▪ contribute their knowledge in interdisciplinary cooperation with designers from other disciplines and to create synergy effects. |
| Contents | <ol style="list-style-type: none"> 1. Formulation of plausible and adequate research questions in the context of digital design of film and other immersive media. 2. Common research methods and publications in the field of digital film design (e.g. "Siggraph - White Papers") |

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| | <ol style="list-style-type: none"> 3. Evaluation procedures and criteria to answer the research questions (e.g. comparisons of different software systems from a design and technical point of view). 4. Examination of general design principles and their specific use and reception in cinematic and other image- and time-based works 5. Use of textual and visual reference materials from other disciplines such as physics, biology or literary studies and their relevance in relation to a digital cinematic creative process 6. Interdisciplinary ways of thinking, researching and working in the context of a production of immersive media in general, for example by using interactive approaches and AR/VR technologies. |
| <p>Recommended reading</p> | <p>Giorgio Luciano: Essential Computer Graphics Techniques for Modeling, Animating, and Rendering Biomolecules and Cells: A Guide for the Scientist and Artist; 6. Februar 2019</p> <p>DAK Kopec Evidence Based Design: A Process for Research and Writing (Fashion Series); 24. Januar 2011</p> <p>Michael A. Stelzner Writing White Papers: How to Capture Readers and Keep Them Engaged; WhitePaperSource Publishing; Auflage: 1 (1. Oktober 2006)</p> |

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|--------------|------------------------------|----------------|
| Subject area | Animation | DFD 5 |
| Module | Character Animation I | DFD 5.1 |

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| Responsible professor | Prof. Frank Ringwald | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | e. g. 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 3 | |
| Prerequisites | none | |
| Teaching form | 50% - Lecture // 50% - Practice | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Practical: Motion studies of a 3D digital character | |
| Grading scheme | Differentiated (at least the grade 4,0) | |

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| Learning outcomes and competencies | <p>Students are able to</p> <ul style="list-style-type: none"> ▪ understand more comprehensive animation concepts and principles and implement them on a self-created or given digital character in a 3D system. ▪ analyze basic anatomically determined motion sequences (e.g. walking or running) and implement them in their own animations. ▪ have digital 3D characters interact with static and moving objects. ▪ plausibly consider physical conditions such as mass and friction and inertia in animations. ▪ give personality to digital characters through postures and rhythm and timing in movements. ▪ make 3D characters act according to storytelling guidelines. ▪ artistically exaggerate characters by exaggerating movements and transgressing anatomical boundaries. |
| Contents | <ol style="list-style-type: none"> 1. Consolidate known primary animation methods and principles with examples 2. Practical acting exercises for animators |

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| | <ol style="list-style-type: none">3. Analyze movements based on references from external sources and camera-based self-studies and break them down into individual poses, transitions, and sequences.4. Integrate organic and mechanical motion sequences into animations and combine them when interacting with objects5. Create secondary animation realistically6. Bring psychological, sociological and dramaturgical aspects of the character into animation7. Develop a specific non-realistic animation style through exaggeration and non-anatomical deformation of the character8. Create comedy through animation |
| Recommended reading | <p>Frank Thomas, Ollie Johnston (1981): Disney Animation: The Illusion of Life. Abbeville Press</p> <p>Williams, Richard E.: Animators Survival kit. Fourth Edition, Revised (25. September 2012)</p> <p>Whitaker, Harold; Halas, John (2009): Timing for Animation. Focal Press</p> <p>Frederic I. Parke, Keith Waters (2008): Computer Facial Animation</p> <p>Jason Osipa (2007). Stop Staring: Facial Modeling and Animation Done Right. John Wiley & Sons</p> |

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| Subject area | Animation | DFD 5 |
| Module | Technical Animation (Rigging, Scripting) | DFD 5.2 |

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|--|--|------------------------|
| Responsible professor | Prof. Frank Ringwald | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | e. g. 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 4 | |
| Prerequisites | none | |
| Teaching form | 50% - Lecture // 50% - Practice | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Practical: Rigging and technically plausible animation of a kinetic object | |
| Grading scheme | Differentiated (at least the grade 4,0) | |

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| Learning outcomes and competencies | <p>The students are able to</p> <ul style="list-style-type: none"> ▪ understand technical peculiarities of non-organic movement apparatuses in a 3D rig and adapt them individually according to the artistic specifications. ▪ integrate special dependencies of machine motion sequences, e.g. due to high masses, into the rig. ▪ create and animate a kinetic non-organic object. ▪ automate technical motion sequences by integrating expressions into the rig. ▪ understand and use industry-relevant scripting languages (MEL and Python) to process technical rigging and animation tasks faster and more effectively. |
| Contents | <ol style="list-style-type: none"> 1. Structure and function of machine joints and skeletons 2. Operation and influence of damping, compensation and balancing systems on machine movements 3. Construction of complex 3D rigs and their animation 4. Introduction to the script languages relevant for this field of activity |

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| | <p>5. Construction of a technical animation rig under stability, performance and efficiency aspects</p> <p>6. Artistic animation of a complex technical construction under plausibility and effect aspects</p> |
| Recommended reading | <p>Eric Allen, Kelly L. Murdock, Jared Fong, Adam G. Sidwell (2008): Body Language: Advanced 3D Character Rigging. John Wiley & Sons</p> <p>Jason Osipa (2007). Stop Staring: Facial Modeling and Animation Done Right. John Wiley & Sons</p> <p>Tina O'Hailey (2018): Rig it Right! Maya Animation Rigging Concepts. 2. Edition Taylor & Francis Ltd.</p> <p>Herbez Adrian: Maya Programming with Python Cookbook; Packt Publishing (29. Juli 2016)</p> |

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| Subject area | Animation | DFD 5 |
| Module | Character Animation II | DFD 5.3 |

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| Responsible professor | Prof. Frank Ringwald | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | e. g. 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 6 | |
| Prerequisites | none | |
| Teaching form | 50% - Lecture // 50% - Practice | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Practical: Dialogue scene with two characters; fight or parcours scene | |
| Grading scheme | Differentiated (at least the grade 4,0) | |

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| Learning outcomes and competencies | <p>Students can</p> <ul style="list-style-type: none"> ▪ understand techniques of transforming movement sequences and apply them to character concepts to be realized on film. ▪ create emotion in pose, gesture and movement with the intention of making the virtual character an expressive entity. ▪ animate characters according to given audio recordings (speech or music) and implement the speech gesture or dynamics contained therein. ▪ create facial animations that are lip-synced and have facial expressions that match the spoken dialog. ▪ use minimal and so-called, "secondary" motion sequences as carriers of sub-text and create believable virtual characters. ▪ portray the character in extreme physical situations (combat or stunt course) and take into account the specific requirements for dynamics, timing and physical as well as anatomical conditions. ▪ appreciate procedures and methods of 3D animation through hands-on experience. |
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| | <ul style="list-style-type: none"> ▪ develop innovative experiments beyond the comprehensible application and convert them to a virtual character. |
| Contents | <ol style="list-style-type: none"> 1. Analysis of monologue or dialogue scenes with regard to emotion, linguistic style and the relationship of the participants to each other 2. Practical acting exercises for animators 3. Body language, lip synchronicity and "mime play" in implementation 4. Basics of "secondary" animation as a means of expression of unspoken subtexts 5. Micro-expressions in the implementation for 3D character animations 6. Music as a basis for body animation and the transfer of its dynamics and gesture to the movements of a digital character 7. Special requirements for the character rig and animation when implementing fight or stunt scenes 8. Incorporation of cinematic means, such as camera and editing, into animation direction |
| Recommended reading | <p>George Maestri (2006): Digital Character Animation 3. New Riders</p> <p>Paul Ekman (2003): Unmasking the Face: A Guide to Recognizing Emotions from Facial Expressions, Malor Books</p> <p>Eric Allen, Kelly L. Murdock, Jared Fong, Adam G. Sidwell (2008): Body Language: Advanced 3D Character Rigging. John Wiley & Sons</p> <p>Williams, Richard E.: Animators Survival kit. Farrar, Straus and Giroux; Auflage: Fourth Edition, Revised (25. September 2012)</p> <p>Vincent Zhao, Haitao Su (20 11): Alive Character Design: For Games, Animation & Film, Gingko Press Gmbh</p> <p>Tom Bancroft (2012): Character Mentor: Learn by Example to Use Expressions, Poses, and Staging to Bring Your Characters to Life, Focal Press</p> |

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| Subject area | Immersive Media | DFD 6 |
| Module | Introduction VR/AR | DFD 6.1 |

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| Responsible professor | Prof. Thomas Gronert | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | e. g. 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 4 | |
| Prerequisites | none | |
| Teaching form | 30% Lecture // 50% - Seminar // 20% - Practice | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Oral: Presentation (research and presentation of various application examples in the fields of AR/VR/360° film). | |
| Grading scheme | Undifferentiated | |

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| Learning outcomes and competencies | <p>The students are able to</p> <ul style="list-style-type: none"> ▪ differentiate between AR/VR/stereoscopy technologies and know their historical development. ▪ find application areas for AR/VR technologies and develop concepts for them. |
| Contents | <ol style="list-style-type: none"> 1. Historical development of AR/VR/stereoscopy 2. VR/AR systems and application areas 3. Perception aspects of VR/AR/stereoscopy 4. Presentation of virtual objects 5. Interactions in virtual worlds 6. Phenomena, problems and solutions 7. Applications and experiences |

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| Recommended reading | <p>Jeremy Bailenson (2019): Experience on Demand: What Virtual Reality Is, How It Works, and What It Can Do</p> <p>Paul Mealy (2018): Virtual & Augmented Reality For Dummies (Dor Dummies (Computer/Tech))</p> <p>Erin Pangilinan, Steve Lukas, et al. (2019): Creating Augmented and Virtual Realities: Theory & Practice for Next-Generation Spatial Computing</p> |
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| Subject area | Immersive Media | DFD 6 |
| Module | CG for Games, Game Engines | DFD 6.2 |

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| Responsible professor | Prof. Thomas Gronert | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 5 | |
| Total time (h) | 130 | |
| Teaching time (h) | 48 | e. g. 8 Days á 6 Hours |
| Learning time (h) | 82 | |
| Semester | 6 | |
| Prerequisites | nonne | |
| Teaching form | 50% - Lecture // 50% - Practice | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Practical: Conception and realization of different assets and their implementation in a game engine. | |
| Grading scheme | Undifferentiated | |

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| Learning outcomes and competencies | Students will be able to produce 3D models for game production and understand the principles of game engines. |
| Contents | <ol style="list-style-type: none"> 1. Conception and implementation of 3D models for game engines 2. Construction of a level in a game engine 3. Import of animations into game engines |
| Recommended reading | <p>Kevin Mack, Robert Ruud (2019): Unreal Engine 4 Virtual Reality Projects: Build immersive, real-world VR applications using UE4, C++, and Unreal Blueprints</p> <p>Patrick Felicia (2019): Unity from Zero to Proficiency (Beginner): A Step-by-Step guide to coding your first game.</p> <p>Dr. Edward Laviere (2018): Getting Started with Unity 2018 – Third Edition: A Beginners’s Guide to 2D and 3D game development with Unity (English Edition)</p> |

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| Subject area | Projects | DFD 7 |
| Module | Project I | DFD 7.1 |

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| Responsible professor | Prof. Thomas Gronert | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 10 | |
| Total time (h) | 260 | |
| Teaching time (h) | 96 | 16 Days à 6 Hours |
| Learning time (h) | 164 | |
| Semester | 2 | |
| Prerequisites | none | |
| Teaching form | 50% - Seminar // 50% - project work | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Practical: (Individual work) Conception and realization of a short film project (2D/3D animation) with a length of 120 - 180 sec. incl. opening and closing credits. The production of the project must be documented by a making-of video with a length of 60 - 120 sec. | |
| Grading scheme | Differentiated (at least the grade 4,0) | |

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| Learning outcomes and competencies | <p>The students can independently conceive, plan and realize a film from the idea to the finished product in their own work, within the time frame provided.</p> <p>The implementation of the idea will be realized with simple technical means (2D animation, simple cartoon, 3D animation).</p> |
| Contents | <ol style="list-style-type: none"> 1. Idea development 2. Design 3. Previs with storyboard and animatic 4. Real shooting (if required by the project) 5. Animation 6. Lighting and rendering 7. Compositing and editing |

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| | <ol style="list-style-type: none">8. Cut9. Delivery and presentation10. Dcumentation and backups11. Analysis |
| Recommended reading | The recommended reading for the realization depends on the respective tasks. |

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| Subject area | Projects | DFD 7 |
| Module | Project II | DFD 7.2 |

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| Responsible professor | Prof. Thomas Gronert | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 10 | |
| Total time (h) | 260 | |
| Teaching time (h) | 96 | 16 Days à 6 Hours |
| Learning time (h) | 164 | |
| Semester | 3 | |
| Prerequisites | none | |
| Teaching form | 50% - Seminar // 50% - Project work | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Practical: (Group work 3-4 persons) Conception and realization of a short film project/VFX shots with a length of 120 - 180 sec. incl. opening and closing credits. At least one animated character should appear in the production. The production of the project must be documented by a making-of video with a length of 120 - 180 sec. | |
| Grading scheme | Differentiated (at least the grade 4,0) | |

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| Learning outcomes and competencies | <p>Students are able to work in small groups to conceive, plan, and implement a film from the idea to the finished product in their own work, within the time frame provided.</p> <p>Groups may implement either their own film idea or a series of effect shots.</p> <p>The focus for the film is on a coherent film idea. In the conception and implementation of individual effect shots, the focus is on the credibility and realism of the effect implementation.</p> |
| Contents | <ol style="list-style-type: none"> 1. Idea development 2. Design 3. Previs with storyboard and animatic 4. Real shooting (if required by the project) 5. Animation |

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| | <ol style="list-style-type: none">6. Lighting and rendering (for 3D projects)7. Compositing8. Editing9. Delivery and presentation10. Documentation and backups |
| Recommended reading | The recommended readings for the realization depend on the respective tasks. |

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| Subject area | Projects | DFD 7 |
| Module | Project III | DFD 7.3 |

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| Responsible professor | Prof. Thomas Gronert | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 10 | |
| Total time (h) | 260 | |
| Teaching time (h) | 96 | 16 Days à 6 Hours |
| Learning time (h) | 164 | |
| Semester | 4 | |
| Prerequisites | none | |
| Teaching form | 50% - Seminar // 50% - Projektarbeit | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Practical: (Group work 3-4 persons) Conception and realization of a short film project/VFX shots with a length of 180 - 240 sec. incl. opening and closing credits. At least one animated character should appear in the production. In addition, real filmed elements must be included in the production. The production of the project must be documented by a making-of video with a length of 120 - 180 sec. | |
| Grading scheme | Differentiated (at least the grade 4,0) | |

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| Learning outcomes and competencies | Students will be able to work in small and medium sized groups to conceive, plan, and implement a film from idea to finished product in their own work, within the time frame provided. |
| Contents | <ol style="list-style-type: none"> 1. Idea development 2. Design 3. Previs with storyboard and animatic 4. Real shooting (if required by the project) 5. Animation 6. Lighting and rendering (for 3D projects) 7. Compositing |

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| | <p>8. Editing</p> <p>9. Delivery and presentation</p> <p>10. Documentation and backups</p> <p>The groups can either implement their own film idea or a series of effect shots. The focus in the film is on a coherent film idea. The way of realization is up to the group. In the conception and implementation of individual effect shots, the focus is on the credibility and realism of the effect implementation..</p> |
| Recommended reading | The recommended readings for the realization depend on the respective tasks. |

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| Subject area | Projects | DFD 7 |
| Module | Project IV | DFD 7.4 |

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| Responsible professor | Prof. Christian Malterer | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 10 | |
| Total time (h) | 260 | |
| Teaching time (h) | 96 | 16 Days à 6 Hours |
| Learning time (h) | 164 | |
| Semester | 6 | |
| Prerequisites | none | |
| Teaching form | 50% - Seminar // 50% - Project work | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Practical: (Group work 3-4 persons) Conception and realization of a short film project/VFX shots with a length of 180 - 240 sec. incl. opening and closing credits. The production contains to a large extent real film elements with camera movements that have to be tracked. In compositing, the focus is on a realistic integration of the 3D elements into the real backgrounds. The production of the project must be documented by a making-of video with a length of 120 - 180 sec. | |
| Grading scheme | Differentiated (at least the grade 4,0) | |

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| Learning outcomes and competencies | <p>The students know and understand</p> <ul style="list-style-type: none"> ▪ to develop and realize a time-based, virtual moving image production in terms of content and technology. ▪ to coordinate creative-apparative action sequences. ▪ to embrace interdisciplinary work processes. ▪ to practice quality management. <p>The students are able to map intercultural standards and gender-specific findings in the project measures.</p> |
| Contents | <p>Conception, planning and implementation of the group project.</p> <ul style="list-style-type: none"> ▪ Preproduction (script development/storyboard/animatic) |

Module Guide

Degree program „Digital Film Design – Animation/VFX“ (B.A.)

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| | <ul style="list-style-type: none">▪ Production (real shooting, animation sequences)▪ Postproduction (compositing, editing, sound) |
| Recommended reading | A Recommended reading for the realization depends on the respective task. |

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| Subject area | Projects | DFD 7 |
| Module | Case Studies | DFD 7.5 |

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| Responsible professor | Prof. Thomas Gronert | |
| Frequency | Once in the academic year | |
| Usability | 12 | |
| ECTS-points | Only in this study program | |
| Total time (h) | 260 | |
| Teaching time (h) | 96 | 16 Days à 6 Hours |
| Learning time (h) | 164 | |
| Semester | 7 | |
| Prerequisites | none | |
| Teaching form | 100% - Seminar | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Practical: Business plan or conception and implementation of an empirical study, artistic project work, film project | |
| Grading scheme | Undifferentiated | |

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| Learning outcomes and competencies | <p>At the end of their studies, students work on a large project largely independently in a group. In doing so, they apply theoretical or practical knowledge from different Modules. In the case studies, the student group is closely supervised by a lecturer, but important decisions are prepared in the group.</p> <p>Essentially, two different forms of the project are possible:</p> <p>Within the framework of the Case Studies, a practical project is realized. This can be a communication campaign, a business plan or a media product.</p> <p>Alternatively, an empirical study on a topic of the course is planned and realized.</p> <p>Students are able to implement a complex project from the idea to the finished product.</p> |
| Contents | The contents are defined depending on the project orientation. |
| Recommended reading | May, Yomb (2010): Wissenschaftliches Arbeiten. Eine Anleitung zu Techniken und Schriftform. Stuttgart. |

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| | <p>Pospiech, Ulrike (2012): Duden Ratgeber - Wie schreibt man wissenschaftliche Arbeiten? Mannheim.</p> <p>Friedrichsmeier, Helmut (2007): Fallstudien – Best-Practice-Beispiele. Linde Verlag</p> <p>Gerring, John (2006): Single-Outcome Studies. In: International Sociology., Heft 5, S. 707–734.</p> |
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| Subject area | Practical Semester | DFD 8 |
| Module | Practical Semester and Presentation | DFD 8.1 |

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| Responsible professor | Prof. Thomas Gronert, Prof. Christian Malterer, Prof. Michael Klein | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 30 | |
| Total time (h) | 780 | |
| Teaching time (h) | 24 | 3 Days à 8 Hours |
| Learning time (h) | 756 | |
| Semester | 5 | |
| Prerequisites | At least 90 successfully completed ECTS points by the end of the fourth semester. | |
| Teaching form | Depends on the internship company | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Presentation; written report (25,000 characters +/- 20 % incl. spaces), evaluation by the internship supervisor. | |
| Grading scheme | Undifferentiated | |

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| Learning outcomes and competencies | <p>The students know and understand how to negotiate the working conditions for a study-relevant internship independently in an internship contract with the respective internship provider.</p> <p>They can</p> <ul style="list-style-type: none"> ▪ apply and test the skills learned in the course of their studies in a professional environment. ▪ gain additional in-depth practical knowledge in the respective field of application. ▪ get to know potential employers and the characteristics of the industry. ▪ present and reflect on the technical and methodological knowledge acquired during the internship in an in-depth internship report. |
| Contents | The content of the internship semester is largely determined by the orientation of the company at which the students complete the internship. The type, scope and quality of the projects and work that students complete during their internships are determined on |

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| | <p>the one hand by the contact persons in the media companies and on the other hand by the supervising lecturers at MD.H, so that the practical and educational goals of an internship are optimally achieved. In regular meetings with the supervising lecturers, the fulfillment of evaluation criteria is checked and, if necessary, corrected accordingly.</p> |
| Recommended reading | <p>Gebhardt, René (2006): Don't Panic! Der Praktikantenguide. Verlag: Schmidt (Hermann).</p> <p>Gerdenits, Elfriede V. (2007): Ferienjob, Nebenjob, Praktikum. Der ideale Praxiseinstieg für Schüler und Studenten. Redline Wirtschaftsverlag.</p> <p>Steinmacher, Daniela (2007): Praktika – Chancen und Risiken: Ein Ratgeber zur optimalen Gestaltung von Praktika in Unternehmen. Europäischer Hochschulverlag.</p> <p>Die weitere Recommended reading richtet sich nach der jeweiligen Aufgabenstellung.</p> |

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| Subject area | Bachelor-Degree | DFD 9 |
| Module | Final Thesis and Colloquium | DFD 9.1 |

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| Responsible professor | Prof. Thomas Gronert, Prof. Christian Malterer, Prof. Michael Klein | |
| Frequency | Once in the academic year | |
| Usability | Only in this study program | |
| ECTS-points | 10 | |
| Total time (h) | 260 | |
| Teaching time (h) | 0 | |
| Learning time (h) | 260 | |
| Semester | 7 | |
| Prerequisites | DFD 1: General Studies DFD 2: Design DFD 3: Film Design and Staging DFD 4: Computer Graphics DFD 5: Animation DFD 6: Immersive Media DFD 7: Projects DFD 8: Practical Semester | |
| Requirement for the award of ECTS-points | | |
| Type of examination | Written (Conzeption) Practical (Realisation) Colloquium | |
| Grading scheme | Differentiated (at least the grade 4,0) | |

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| Learning outcomes and competencies | <p>Theoretical final thesis</p> <p>The theoretical thesis consists of a written concept. It must show that the student is capable of independent work.</p> <p>A coherently structured thesis should be presented to the examination committee, in which the procedure and the results are logically structured and clearly presented. The concept should be submitted in bound form.</p> |
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| | <p>The students are able to</p> <ul style="list-style-type: none"> ▪ plan and realize a conception with an increased complexity profile. ▪ apply a scientific working methodology in citing sources and structuring. ▪ conduct an independent, systematic reflection of the chosen topic and its conceptual realization. ▪ develop and optimize a goal-oriented methodology, which includes exposé, rough concept, fine concept and documentation. ▪ include and optimize criteria of strategic creativity and scientific-rational competence in the planning and conceptual considerations. ▪ include socio-cultural and ecological problems in decision-making processes in an optimizing way. ▪ reflect intercultural standards in project measures. <p>Practical final thesis</p> <p>The practical thesis serves to prove that the students are able to realize a task from the field of visual communication in accordance with the flexible requirement profiles of a modern media landscape, following the conceptual foundations of the theoretical thesis.</p> <p>The students are able to</p> <ul style="list-style-type: none"> ▪ realize and optimize the final work by means of coordinated artistic, strategic, and apparative design competence, on a higher level of complexity. ▪ realize and optimize the final work according to considerations of usability and functionality. ▪ evaluate, realize and optimize the final work according to the considerations of increased complexity of the film design. ▪ evaluate, realize and optimize the final work according to the criteria of innovation content and social future potential. <p>Colloquium</p> <p>The colloquium focuses on the subject areas of the final thesis, including neighboring and supplementary areas of knowledge. The colloquium is intended to determine whether the students have a sound knowledge in the areas of media and digital film design and in the subject areas to which the thesis is thematically assigned.</p> <p>The students are able to</p> <ul style="list-style-type: none"> ▪ conduct a project presentation according to optimized communication and visualization criteria, for the presentation of the final thesis. ▪ to incorporate well-founded basic knowledge according to the subject areas of the final thesis.. |
| <p>Contents</p> | <ol style="list-style-type: none"> 1. Briefing 2. Rough concept |

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| | <ol style="list-style-type: none">3. Fine concept / written elaboration4. Design concept / practical approach to solution5. Realization6. Colloquium |
| Recommended reading | A Recommended reading is based on the particular thesis assignment. |
| Note | In the final thesis, students demonstrate their acquired knowledge in a research and project work of a higher degree of complexity. Both application-oriented and pure re-search projects are permissible for the final thesis. |