MultiMediaTechnology

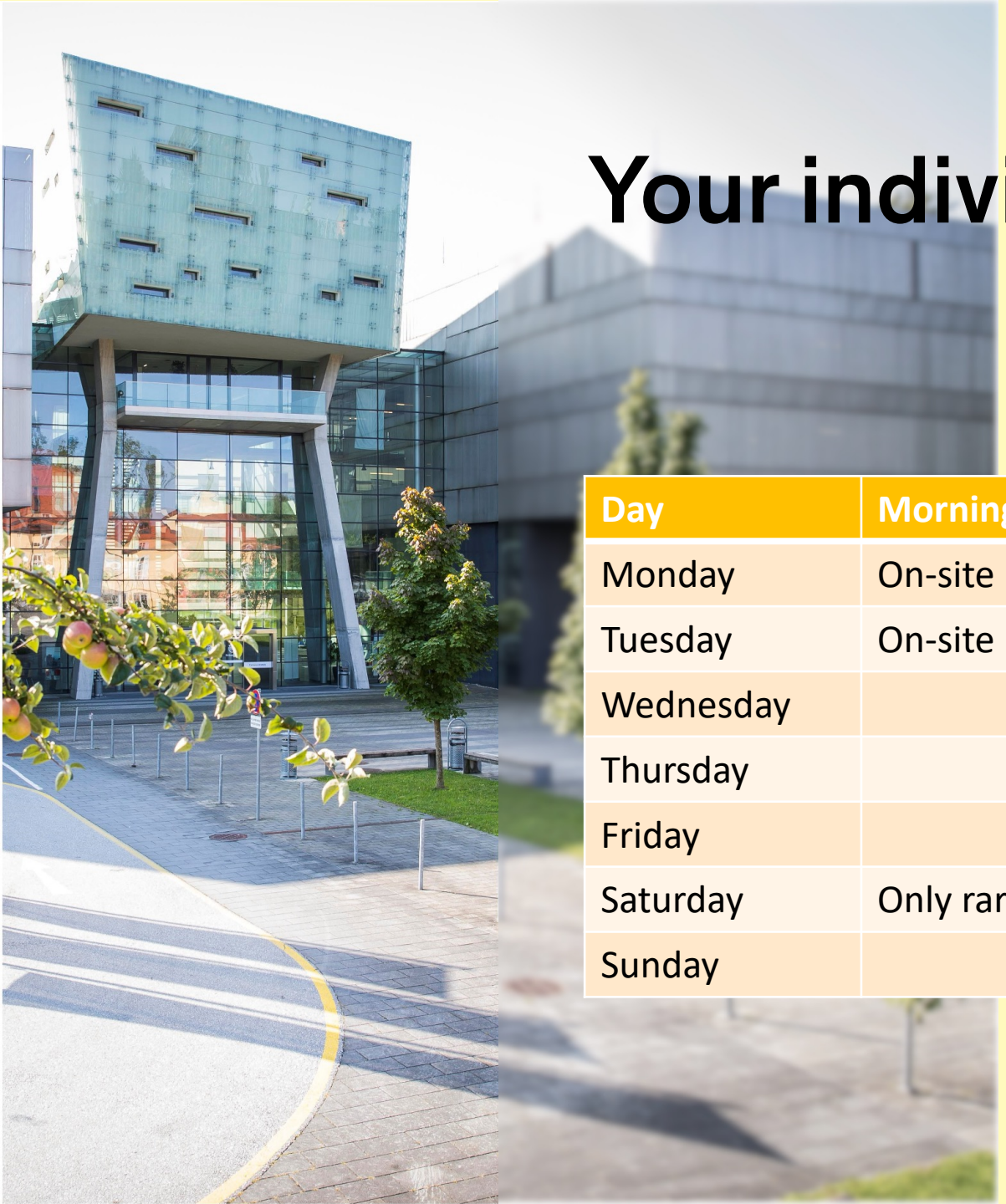
Master

FH Salzburg
Creative
Technologies

MMT at a glance

- **Master of Science in Engineering** (MSc) / 120 ECTS
- **Part-time or full time**: find your work-life-study balance
- **One study major** throughout the degree programme
- Strong emphasis on **concept, professional software development and projects** (approx. 80%)
- **Tuition fee:** EUR 363.00 + ÖH fee EUR 24.70 per semester
- **Semester abroad** in 4th semester possible
- **20 study places** per year
- Intensive transfer between the teaching and research activities of the department

Digital Realities Lab



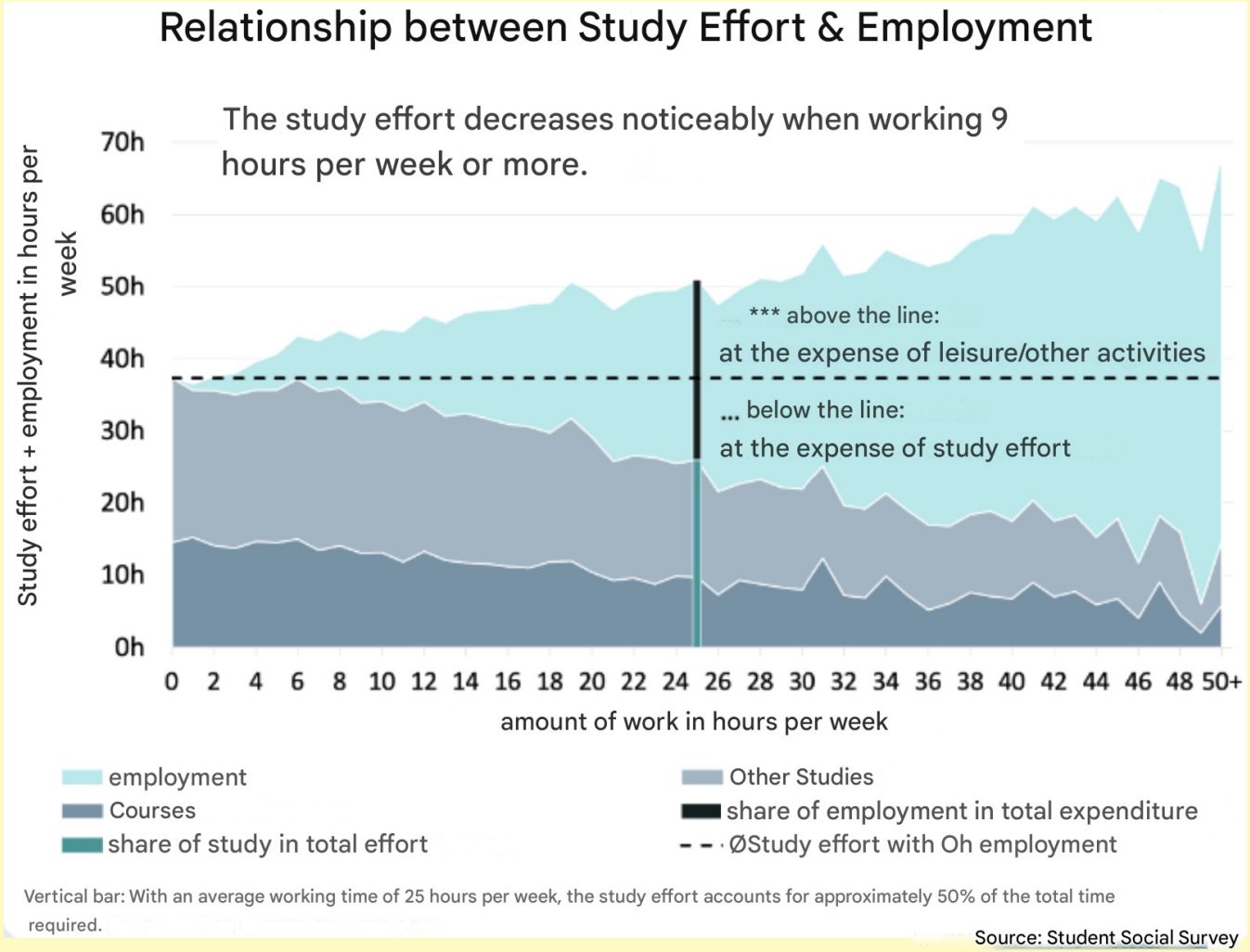
Your individual study model

Part-time / Full-time

Day	Morning (9:00 – 13:15)	Afternoon (14:15 – 17:30)
Monday	On-site @FH	On-site @ FH
Tuesday	On-site @ FH	On-site @ FH / Online
Wednesday		
Thursday		
Friday		On-site @ FH / Online
Saturday	Only rarely @ FH / Online	
Sunday		

There is one **studio week** per semester
– full time Monday to Friday

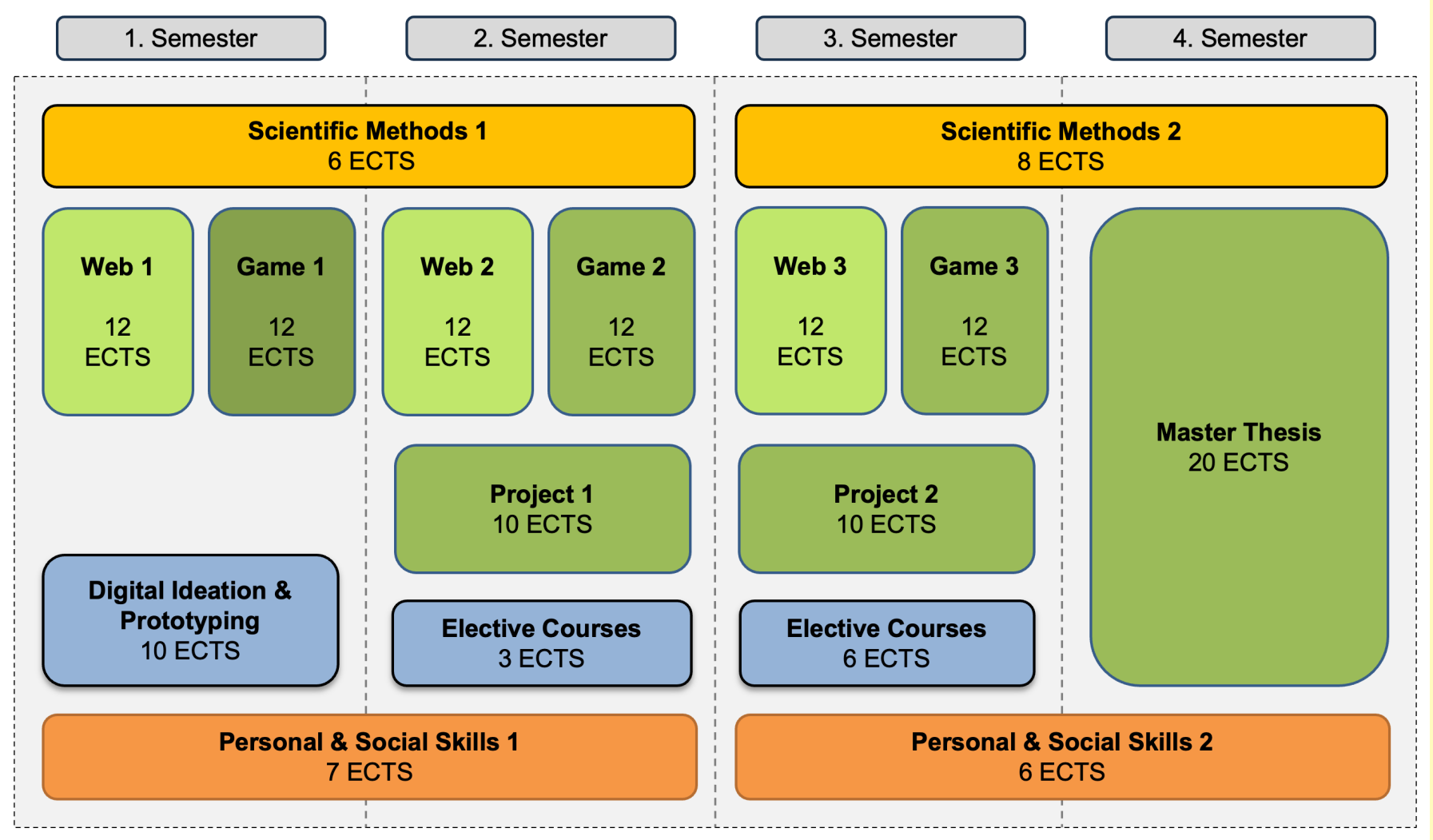
What is the max. number of work hours?



Source: Student Social Survey

(german only) Studierendensozialerhebung

Curriculum overview



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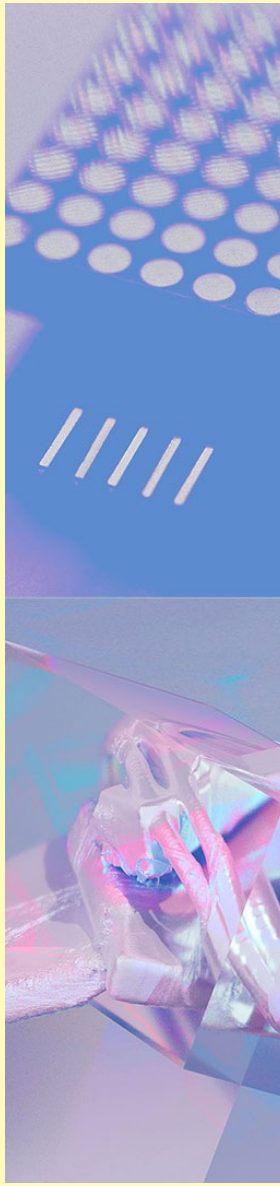
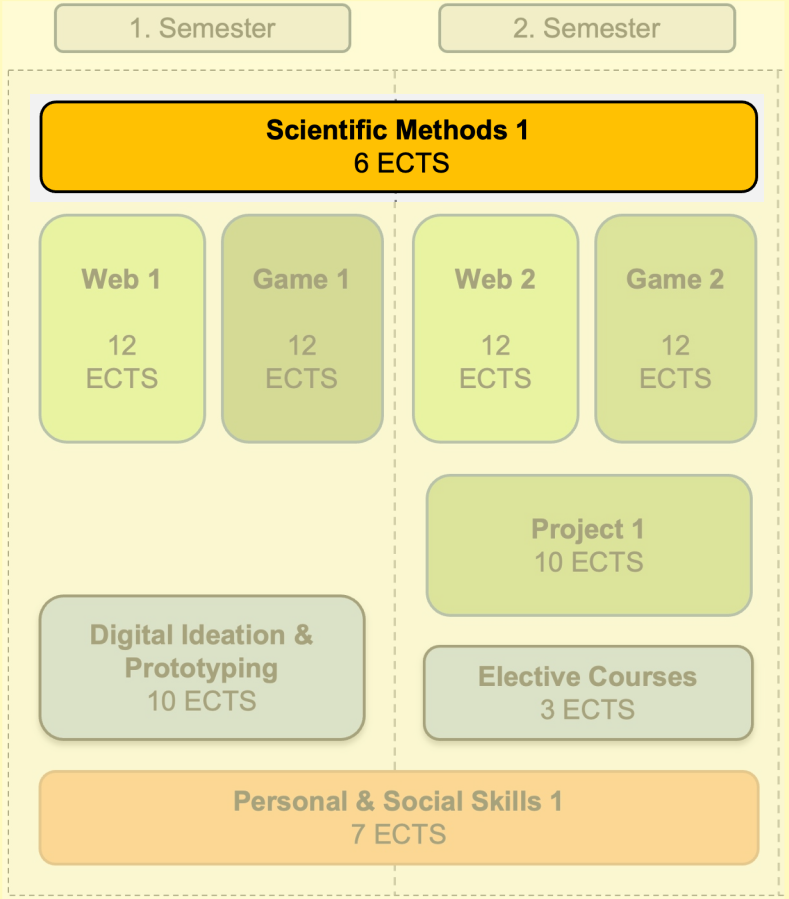
Year 1





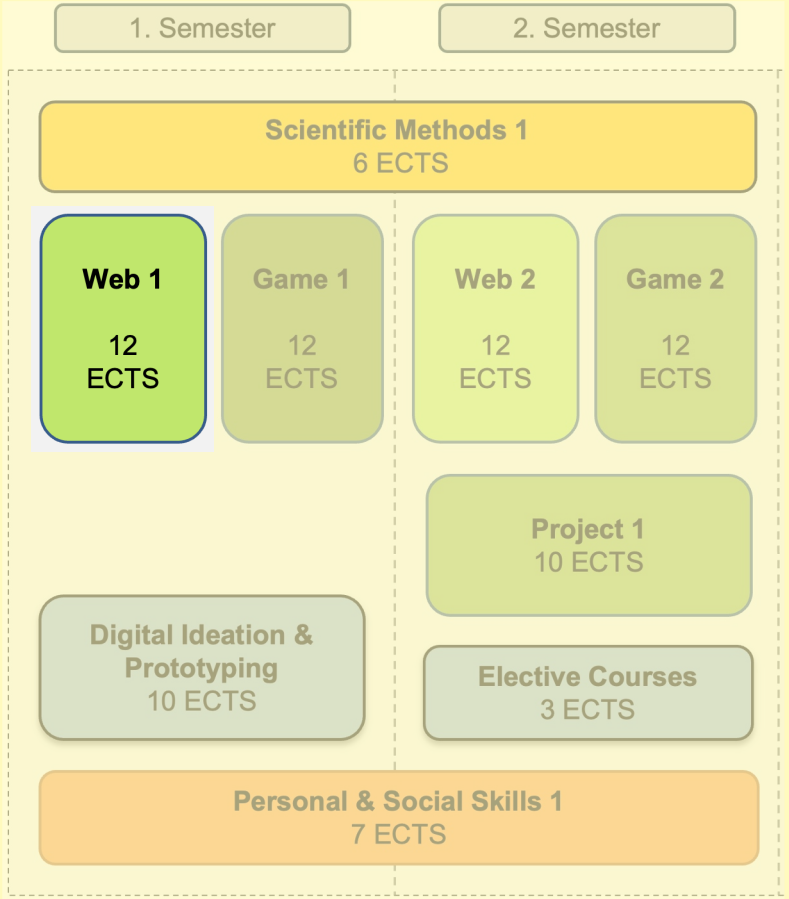
Modul Scientific Methods 1

Data Analysis [1. Sem]

- basic methods of statistics, data analysis applied to practical problems

Research Methods & Study Design [2. Sem]

- covers different qualitative and quantitative research methods
- mapping of different types of research questions (descriptive vs. comparative vs. relational research questions) and the corresponding research contributions (empirical, system-based, methodological, theoretical, design-based)



Modul Web Engineering 1

Web Performance Optimisation

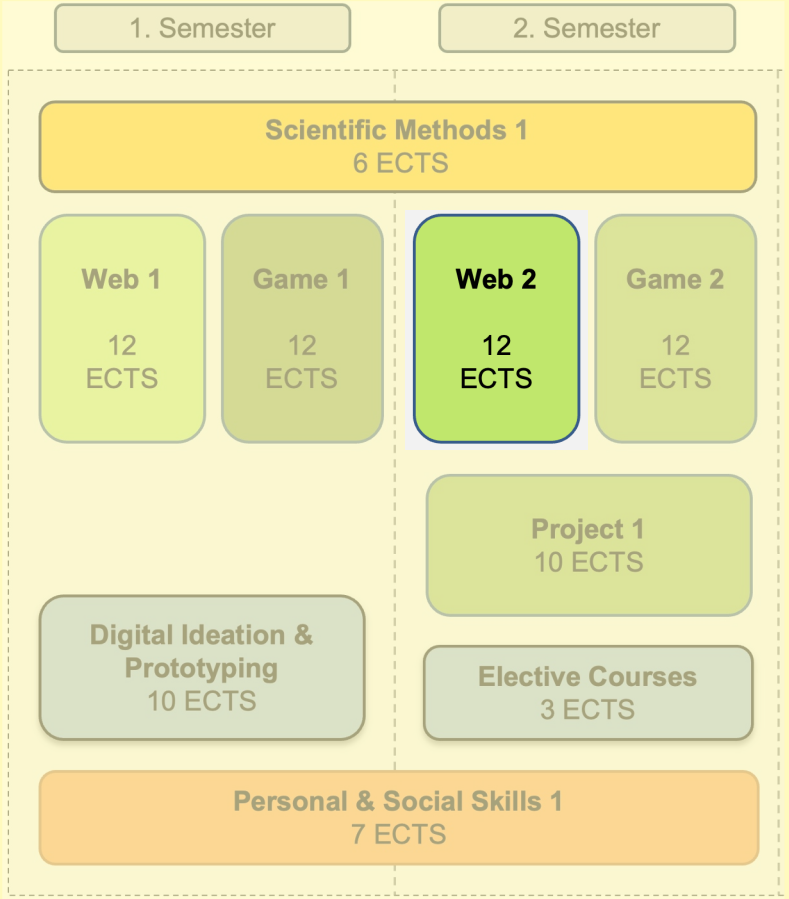
- improve the speed and efficiency of websites and web applications
- study all aspects of the web stack, from backend databases to the intricacies of frontend JavaScript

Applied Programming Paradigms

- Explore different paradigms and learn how programming languages work
- gain hands-on experience with modern programming languages such as TypeScript, Elm and Rust and explore applications of WebAssembly

Distributed Software Architecture

- Master distributed systems and their cloud-based implementation.



Modul Web Engineering 2

Continous Delivery

- learn to automate software development, testing and deployment through DevOps and Infrastructure as Code

Frontend Engineering

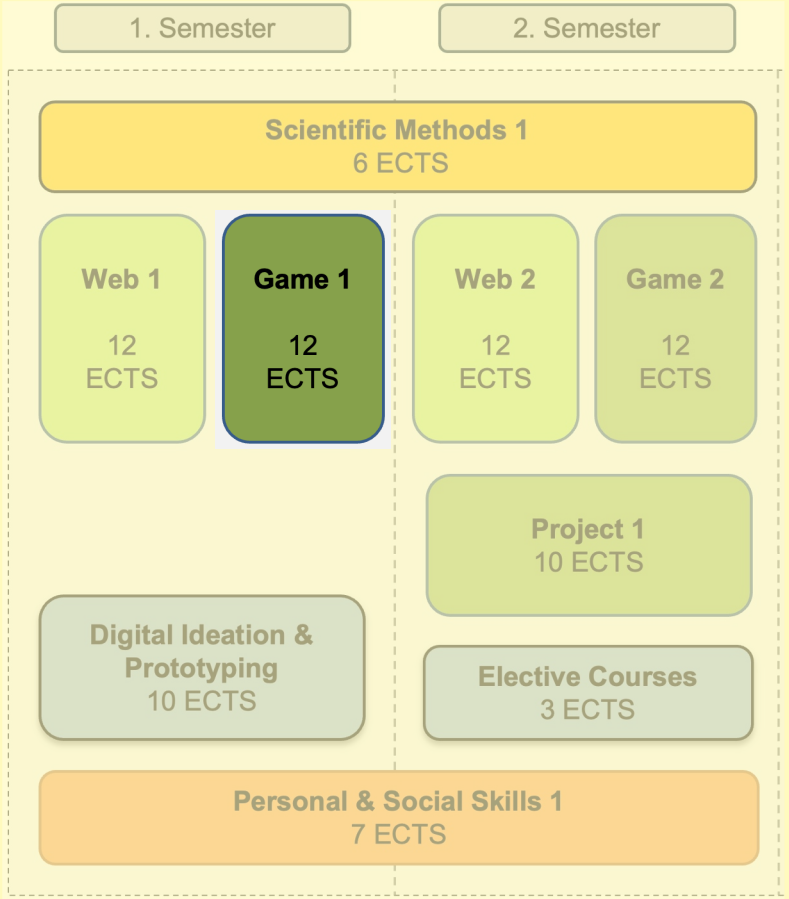
- advanced front-end topics, covering everything from advanced JavaScript to UX and design

Software Quality Assurance

- develop an appropriate testing strategy for your project, apply advanced testing techniques

Web User Research

- gain insights to improve usability, design, and functionality based on user behaviour



Modul Game Engineering 1

Applied Games

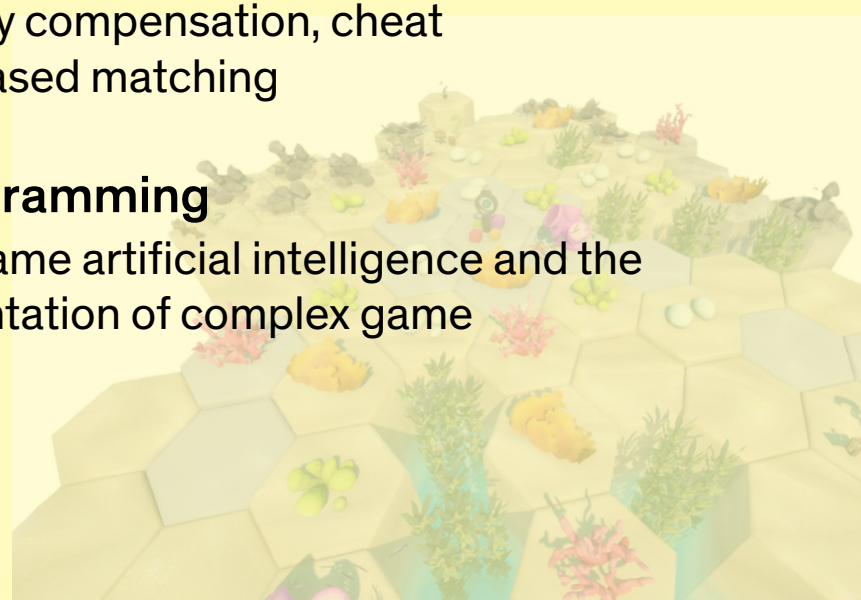
- game design methods for games with a purpose beyond entertainment, such as educational, therapeutic or training applications
- using game elements to achieve specific objectives

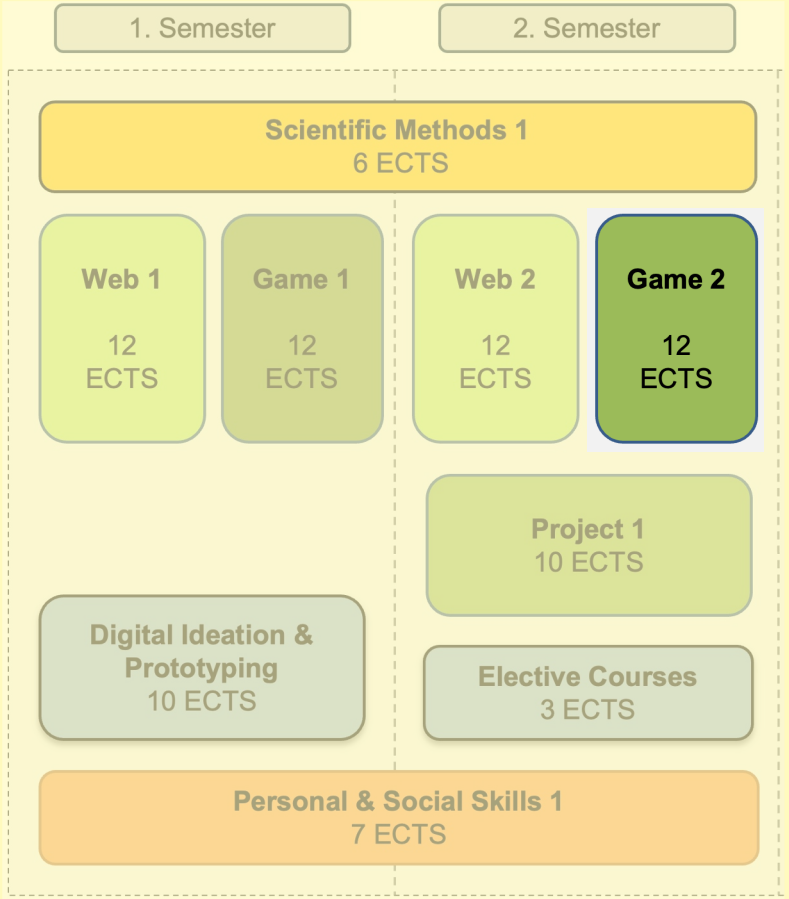
Multiplayer & Online Gaming

- server-client structures for games, as well as specific topics such as latency compensation, cheat prevention, or skill-based matching

Advanced Gameplay Programming

- advanced topics in game artificial intelligence and the design and implementation of complex game mechanics





Modul Game Engineering 2

Physics-Based Simulation

- architectures and math of game-based physics with specific simulation algorithms for, e.g., rigid body physics, soft materials or fluid simulation
- optimisations to handle large numbers of objects, i.e. from 1000 objects to 1 million objects

Efficient Game Programming

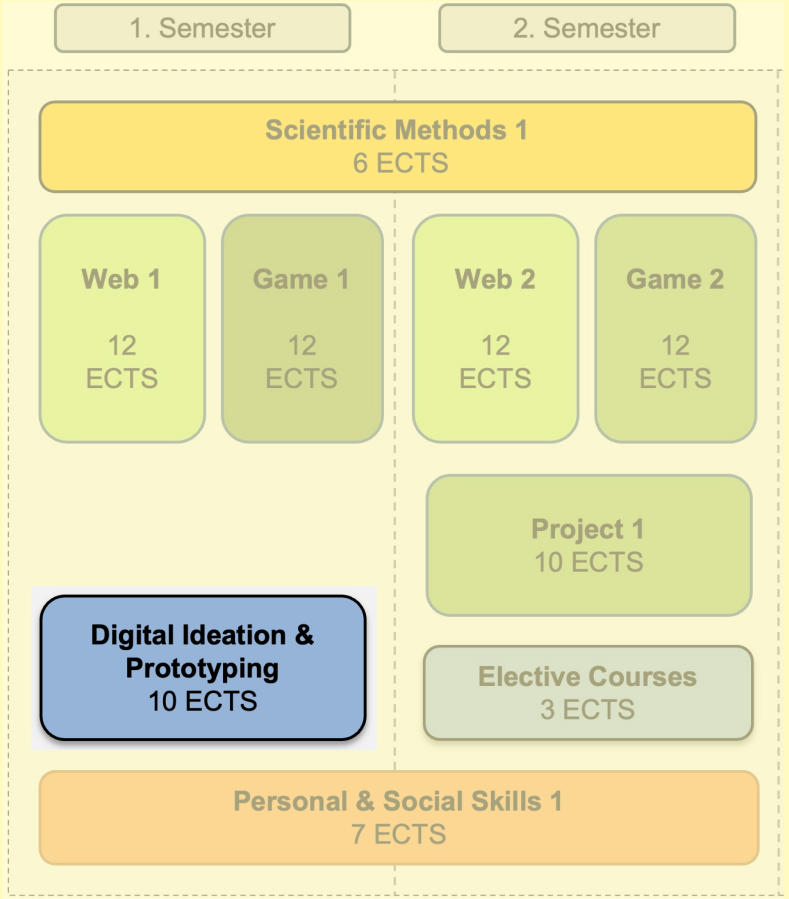
- focuses on writing optimised, high-performance game code to ensure games run smoothly across multiple platforms and devices
- low-level optimisation including memory

Software Quality Assurance

- structured QA methods to ensuring ensure that the gameplay experience meets design specifications and user expectations

Games User Research

- methods to gain insights and improve game design, usability and player satisfaction



Modul Digital Ideation & Prototyping

Lightning Talks & Innovation Workshops

- semester warm-up with lightning talks and hands-on workshops with MMA and RVE students

Digital Ideation

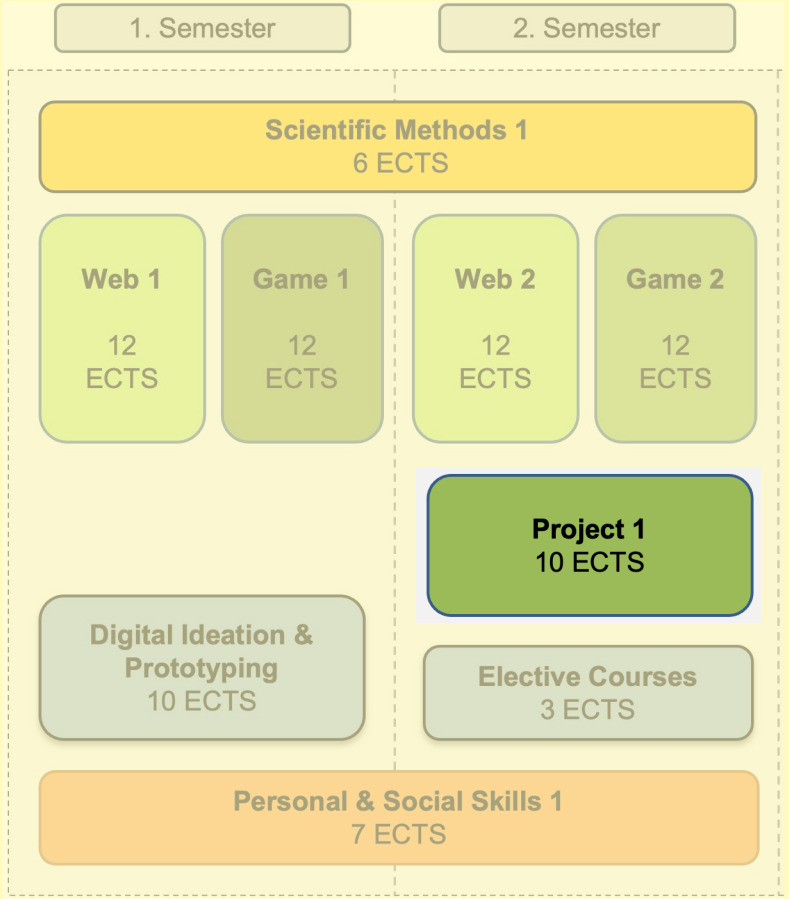
- uses practical examples to illustrate the stages, methods and tools of design thinking, storytelling and innovation development

Rapid Prototyping

- explore project ideas using modern programming languages and relevant software frameworks

Project 1: Concept & Pitch

- iterative refinement of ideas for Project 1 by reflecting on the feedback received from the peer group and coaches
- pitching of idea and implementation concept for Project 1



Modul Project 1

Project 1: Implementation

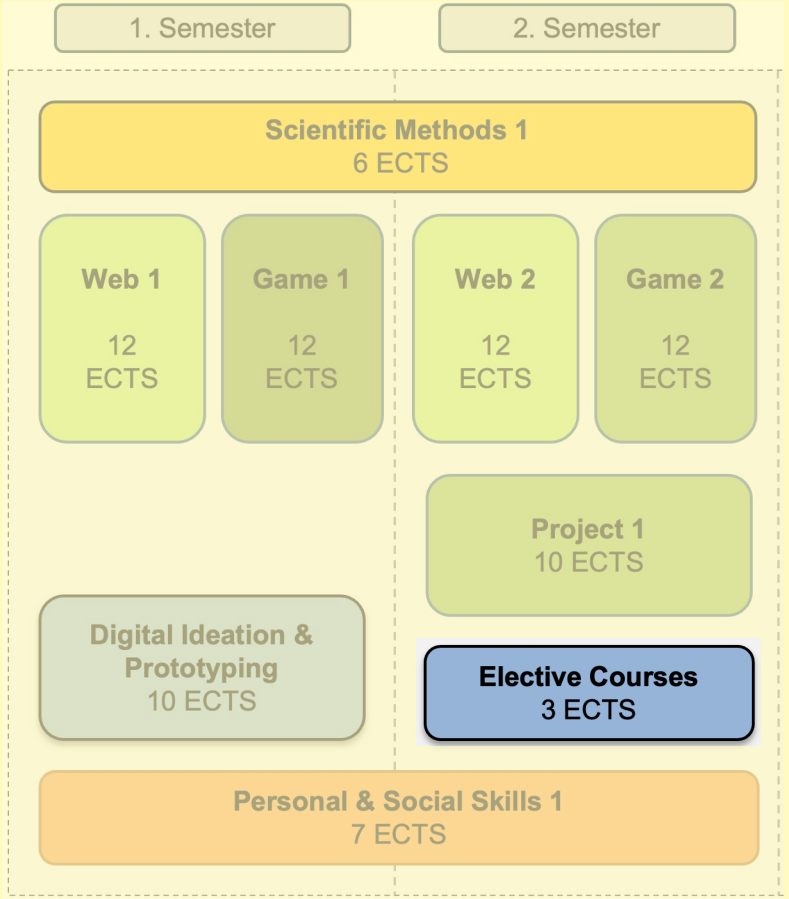
- development of a minimum viable product using agile methods
- present your product

Innovation Coaching (Impact)

- Identification of an opportunity, analysis of trends, analysis of the potential and attractiveness of the markets

Project Reflection 1

- reflection on planning, conception and cooperation in the team for Project 1



Modul Elective Courses (summer)

Information Visualisation & Visual Analytics

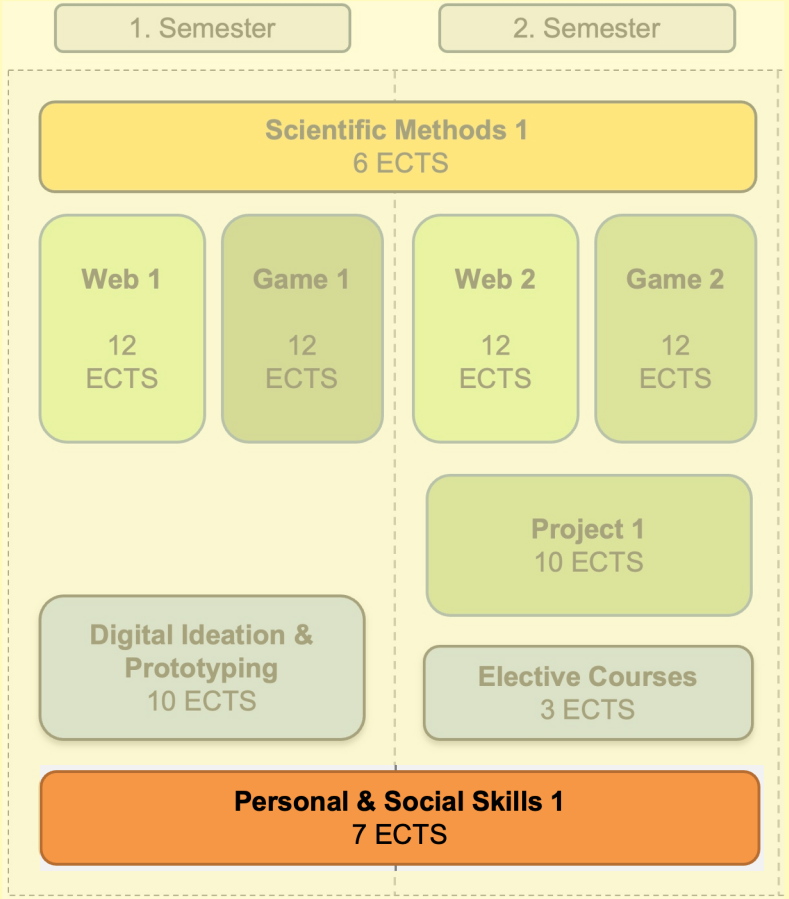
- focuses on key concepts and methods for encoding and presenting large data sets using interactive visualisation methods

Generative AI

- covers theoretical and practical knowledge in the field of processing, analysis and generation of multimedia data

Mixed Reality Technologies

- focuses on human-centred approaches to create innovative AR/VR applications evaluation of AR/VR prototypes



Modul Personal and Social Skills 1

Agile Projectmanagement [1. Sem]

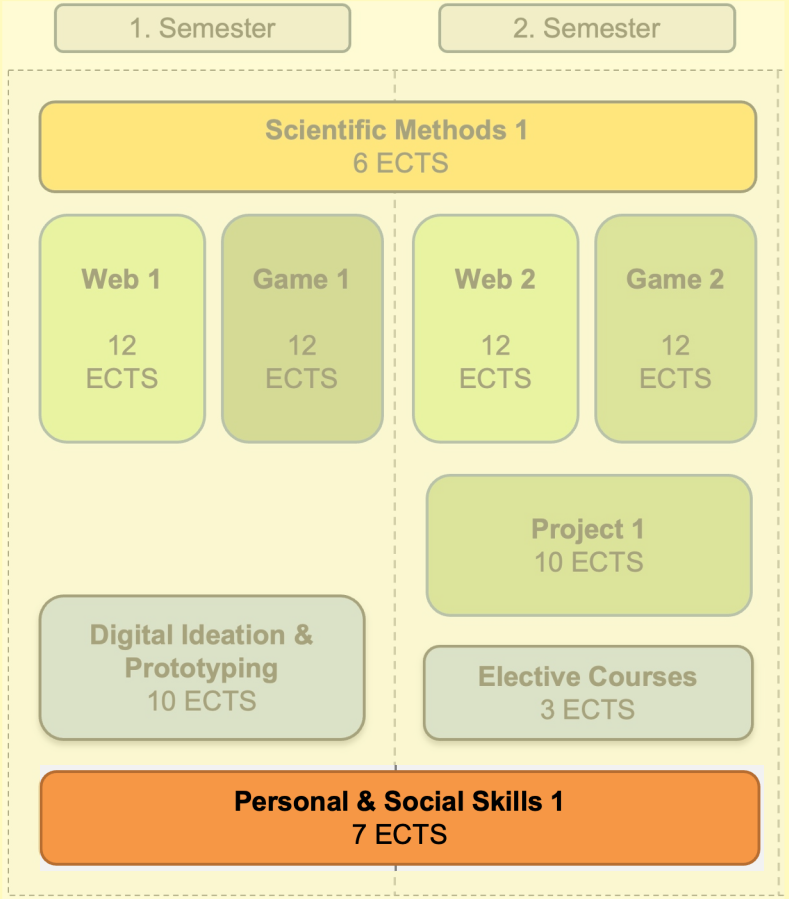
- covers roles, artefacts and events of scrum at scrum master level

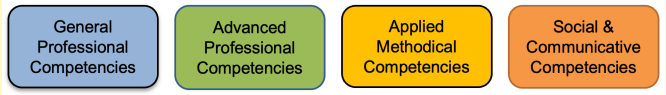
Facilitation & Efficient Meetings [1. Sem]

- covers approaches to group facilitation, facilitation tools, understanding roles and leadership

Diversity in Tech [1. Sem]

- focuses on different approaches to diversity and on the human resources, opportunities and potential of people





Modul Personal and Social Skills 1 (contd.)

IT Law and Data Protection [2. Sem]

- covers application of European IP/IT law to contractual situations and basics of European and national data protection law (DSGVO, DSG, ePrivacy)

Ethics in Informatics [2. Sem]

- focuses on professional ethics, ethical guidelines of various professional bodies
- ethical, social and environmental implications of information technology

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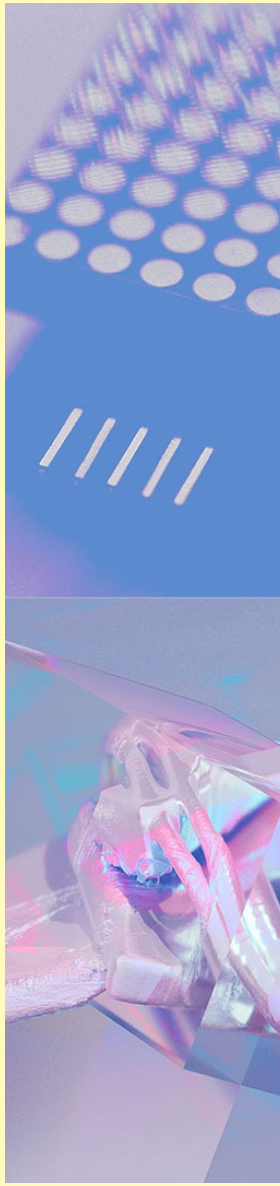
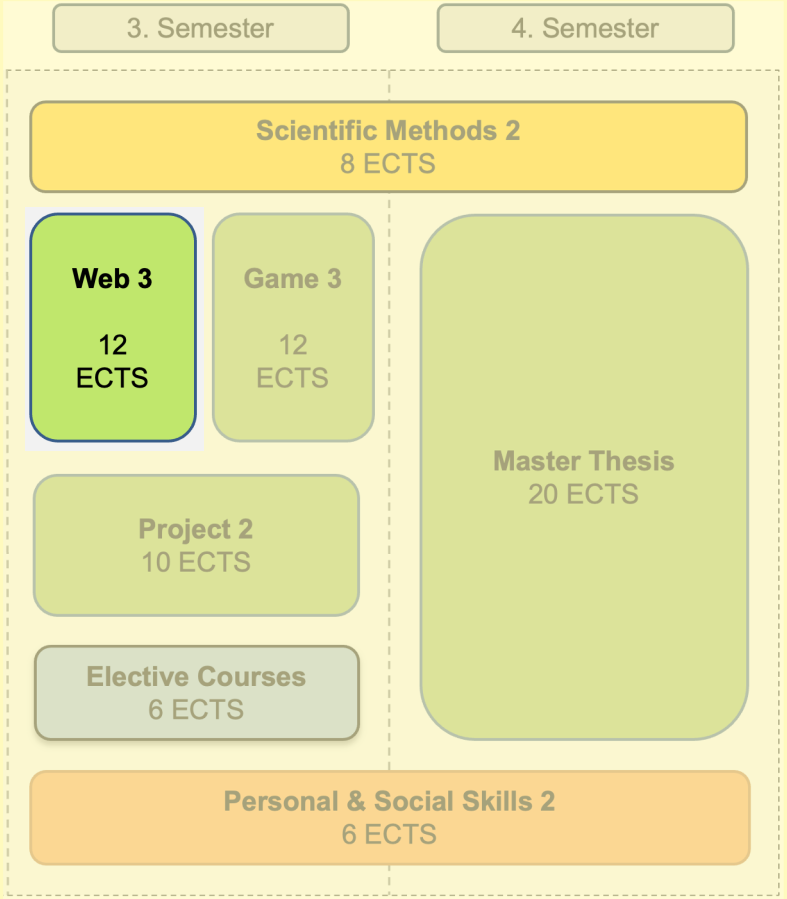
Year 2





Modul Web Engineering 3

Data Engineering

- explore all aspects of data handling, from relational databases to NoSQL and real-time data pipelines

DevSecOps

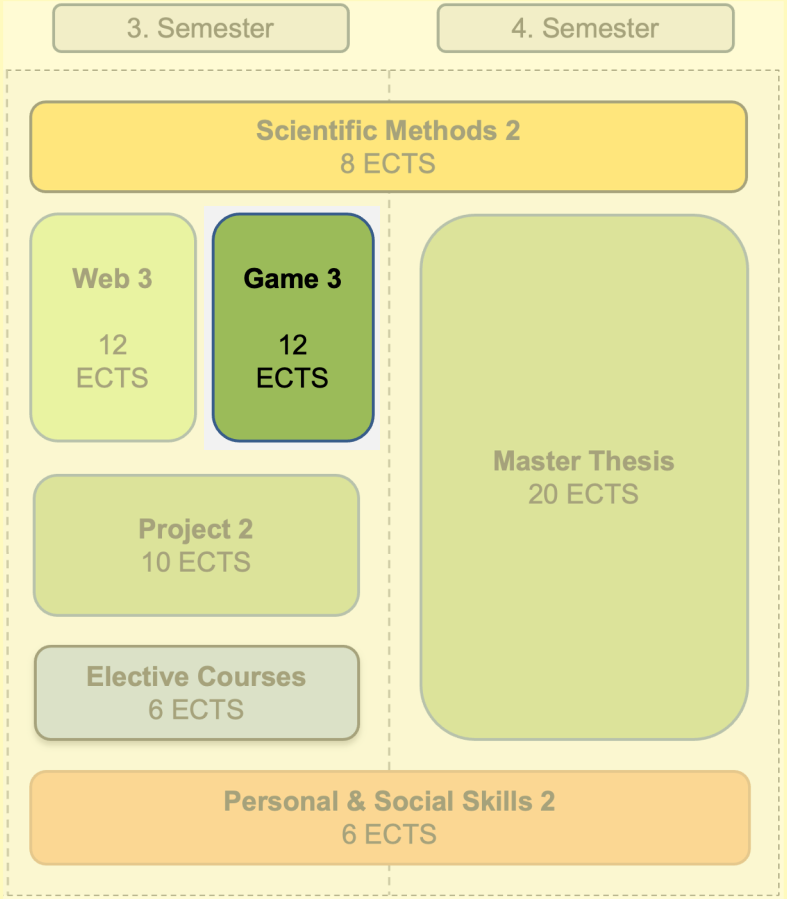
- integrate security practices into the DevOps process

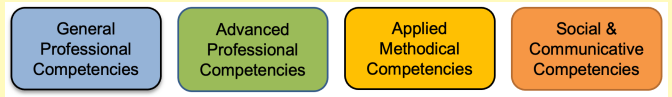
Scalable Web Architectures

- building on all the previous topics you will learn what it takes to design and build robust, scalable web applications

Guest Lecture / Guest Professor

- selected current topics in the field of Web Engineering





Modul Game Engineering 3

Artificial Intelligence for Games

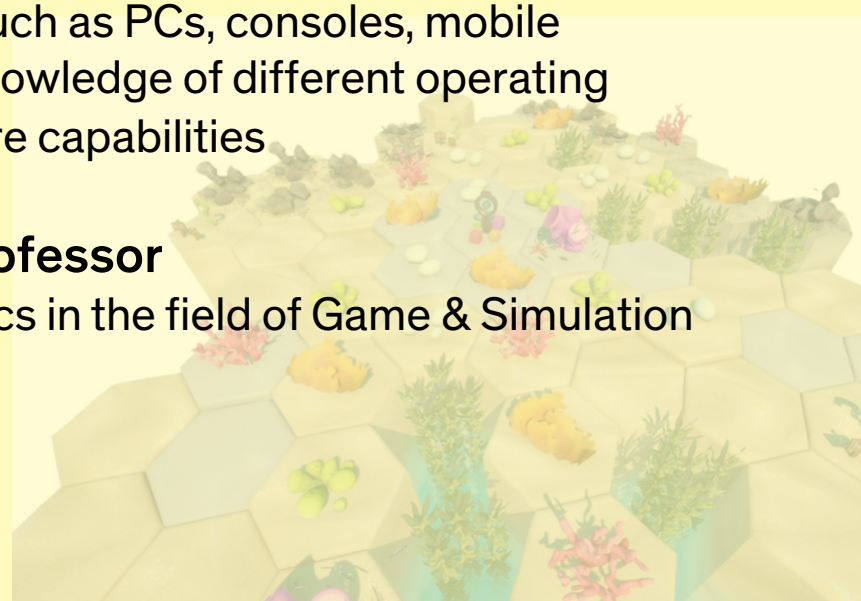
- the use of AI techniques to create intelligent behaviour in games, such as non-player character (NPC) behaviour, procedural content generation, and decision making systems

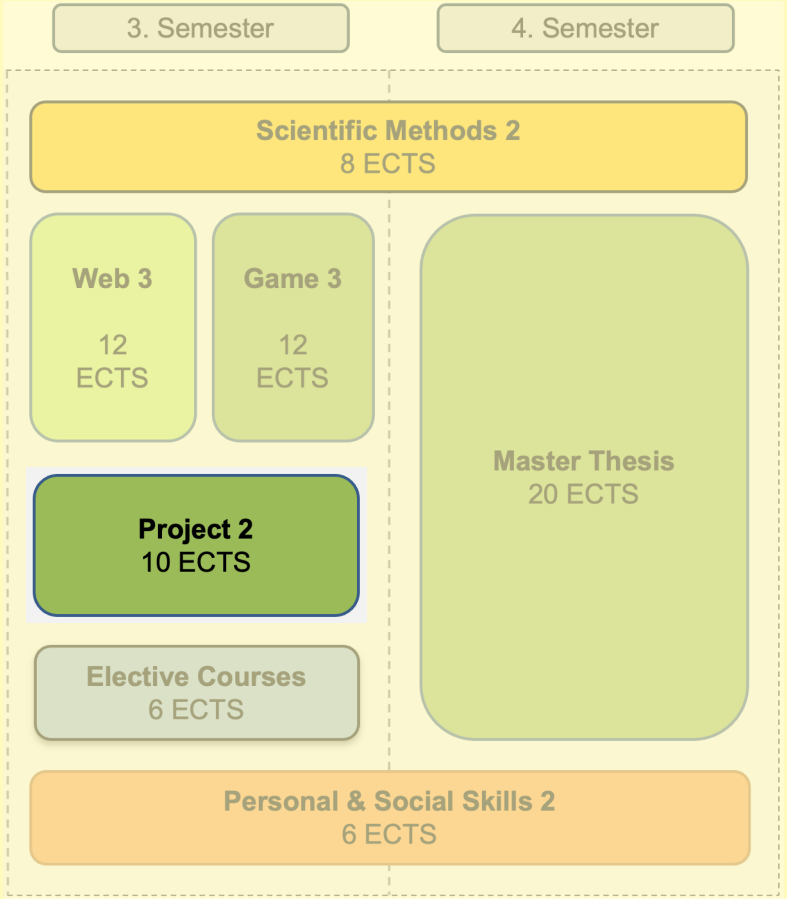
Cross-Plattform Development

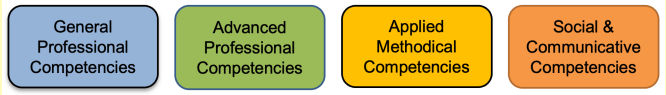
- developing games that can run and be distributed across multiple platforms (such as PCs, consoles, mobile devices), requiring knowledge of different operating systems and hardware capabilities

Guest Lecture / Guest Professor

- selected current topics in the field of Game & Simulation Engineering







Modul Project 2

Project 2: Concept & Implementation

- conception, development and testing of Project 2
- alternatively, students are given the opportunity to work on research projects

Innovation Coaching (Business)

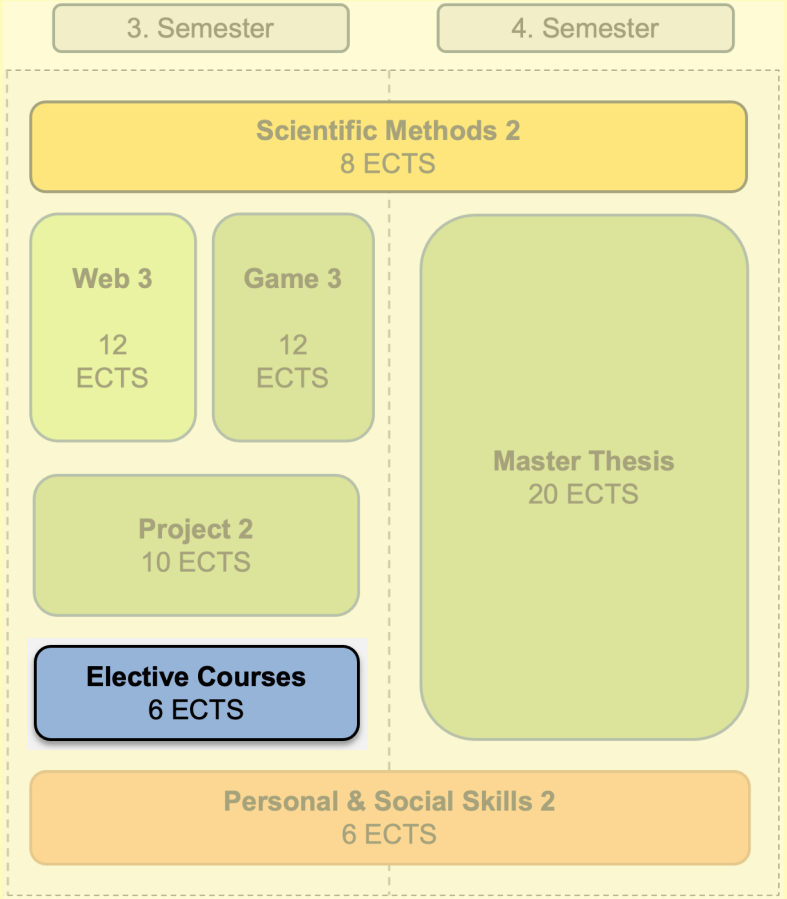
- enhance students' knowledge of the industry and marketplace, and enable them to formulate and present an appropriate business case to a target audience

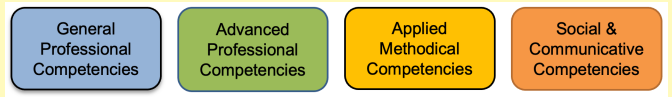
Project Reflection 2

- reflection on planning, conception and cooperation in the team for Project 2

Transfer Project 1

- participate in projects in the Creative Technologies Department or a research project





Modul Elective Courses (winter)

Predicitve Modeling

- use data science and machine learning models to develop generalised models for predicting data or future events

Creative Entrepreneurship & Corp. Innovation

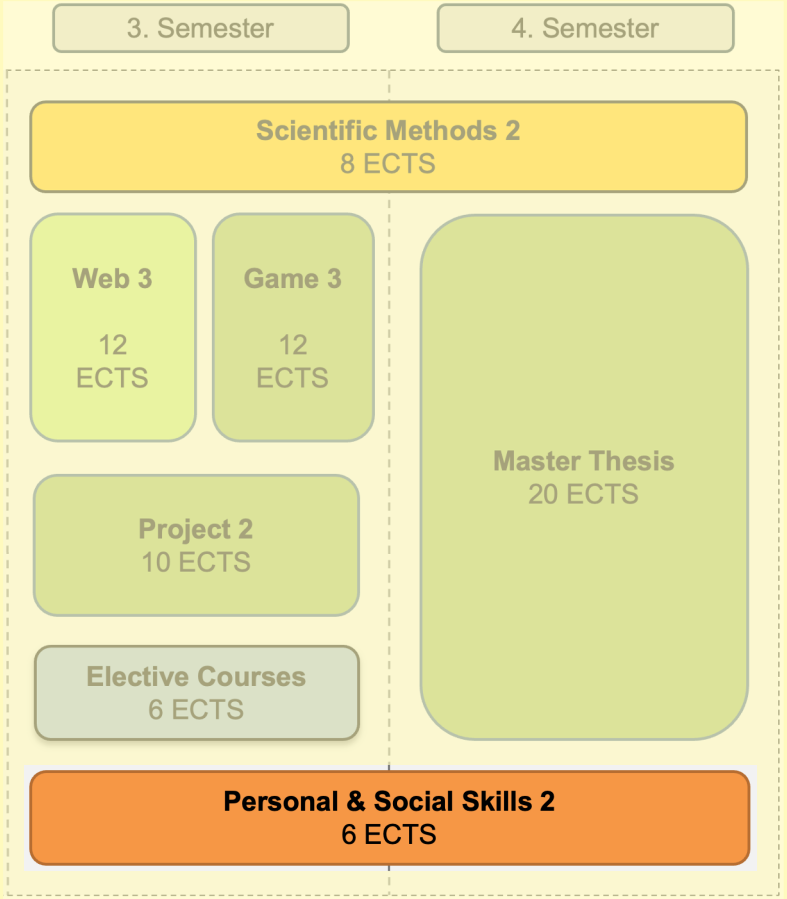
- covers the first steps as an entrepreneur, including developing a business plan for a digital product or service

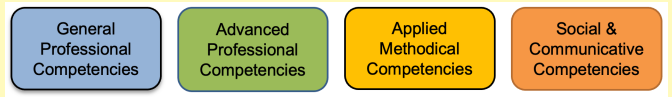
Deep Learning & Explainable AI

- theoretical and practical knowledge of state of the art deep learning and neural networks

Selected Topics in HCI

- latest theories, methods and interaction paradigms in the rapidly evolving field of human-computer interaction





Modul Personal and Social Skills 2

Sustainable Computing [3. Sem]

- integrate sustainability principles into information technology

Project Portfolio & Presentation [4. Sem]

- a professional presentation of the project(s) to the general public at the Creativity Rules Festival

Project Reflection 3 [4. Sem]

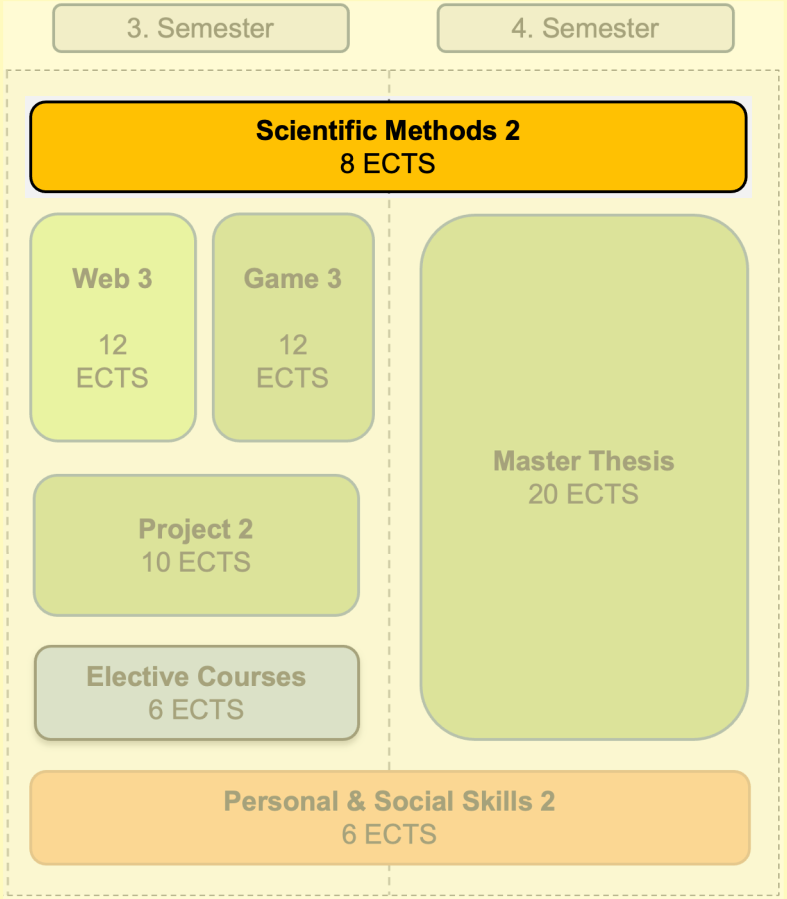
- Adjourning phase

Transfer Project 2 [4. Sem]

- participate in projects in the Creative Technologies Department or a research project

Lecture Series: Emerging Technologies [1.-4. Sem]

- Lecture series that covers trends and topics in tech, culture and media



Modul Scientific Methods 2

Master Thesis Seminar 1 [3. Sem]

- covers thesis process, finding a topic, developing research questions
- can be linked to company/industry or research projects in the CT department

Master Thesis Seminar 2 [4. Sem]

- defend and reflect on the scientific question posed and the scientific methods used in discussion with peers

Modul Master Thesis

Master Thesis

- implementation of a research prototype/experiment
- writeup of a scientific master thesis
- master thesis is related to your major

Master Exam

- presentation and defense of the master thesis
- examination on topics of the curriculum

Industry experts Web

Christian Köberl
Porsche Informatik
Continuous Delivery

Christian Folie
Salzburg AG
Distributed Architectures,
Scalable Web Architectures

Florian Bauer
(Serial) Entrepreneur
Innovation Coaching

Keerthana Krishnan
Yamdu, München
Web Performance Optimisation,
Frontend Engineering

Tsvetan Stoychev
Akamai Technologies Web
Performance Optimisation

Marco Emrich
Codecentric
Software Quality Assurance

Simon Lasselsberger
former CTO Runtastic
Scalable Web Architectures

Industry experts Game

Bastian Born
Ubisoft Blue Byte
Technical Lead

Wolfgang Litzlbauer
Actionwerk, EA Games
CEO, Software Dev.

Niklas Terörde
EA Dice, Sweden
Game Developer

Folker Schamel
Spinor
Game Engine Developer

Martin Filipp
Mi'pu'mi Games, Austria,
Rockstar Vienna
COO, Producing

Josef Wiesner
Broken Rules and Pow
Wow Entertainment
Game Design

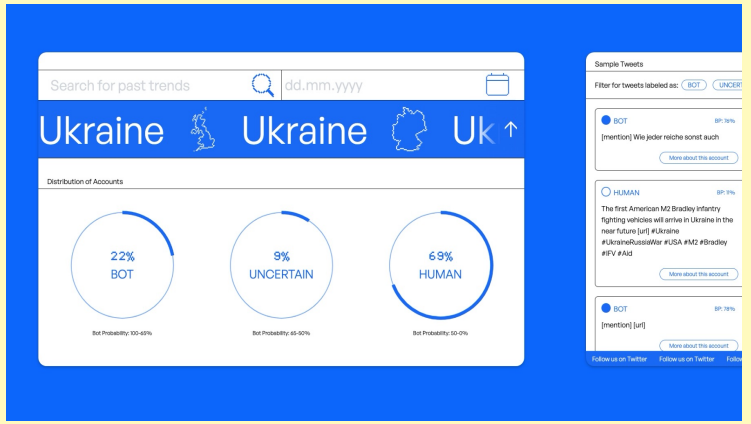
Christina Charlier
Aesir Interactive GmbH
Game Programmer

Master Projects

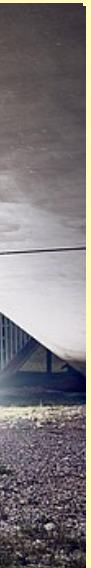
- The **two projects** challenge you to explore innovative solutions and apply the new knowledge and skills you have acquired in your courses
- You will work in **interdisciplinary teams** with other professionals, for example from audio (MMA) and computer animation (RVE), to create a game
- A master project could be the MVP for your start-up or indie studio

This programme enables **ambitious projects**:

- Each project is worth 10 ECTS = 1/3 of the semester
- Studio days allow you to focus fully on your project with no other course commitments
- From Monday to Friday, you will have **one full studio week per term**, working with your team on your projects



Entrepreneurship graduates



Facilities & Infrastructure

- Modern student spaces (meet other FH students)
- CT student coworking space (meet other CT students)
- Project rooms (workspace for project work)
- Audio/Video/Animation labs
- Makerspace (3D printers, laser cutters, soldering stations, etc.)
- ShowRoom with professional motion capture system
- CT audio/video rental (cameras, lighting, projectors, etc.)
- CT hardware rental (VR headsets, AR headsets, etc.)

Onboarding of students

Preparation courses take place just before regular classes start in September and set the stage for your academic success. These courses cover:

- Game Development
- Frontend Development
- Backend Development

Networking during your studies

- External lecturer link to key industries
- Regular meetups with regional creative and digital businesses
- FH Startup Center supports entrepreneurs during and after studies
- FH Job and career exhibition contacta
- GameDev Career Day
- Creativity Rules Festival
- Hackathons, Game-Jams, etc.
- …

Creativity rules

Admission requirements

Bachelor's degree in Computer Science (180 ECTS) or a related field, or:

- proof of 20 ECTS credits in STEM subjects
- proof of 25 ECTS credits in the field of software development
- English level B2

You will need to prepare a portfolio of projects for your admission interview

Dates & Deadlines 2025

For non-EU/EEA nationals and/or applicants with international prior education, apply by **31 March 2025**

Online application closes **30 June 2025**

Admission Interview Dates
4 February / 22 March / 8 April / 20 May / 8 July 2025

You will receive an acceptance letter no later than 2 weeks after the admission date

Tuition fee deposit (education from a third country)

Admission Information

Contact

office.ct@fh-salzburg.ac.at

www.fh-salzburg.ac.at/ct

facebook.com/multimediatechnology

www.linkedin.com/company/fhsalzburg-ct/

@creative.technologies.dept

Ask a Student

askme.mmt@fh-salzburg.ac.at

Creative Technologies