



Creative Computing Module II

Summer Semester 2022

Language of Instruction: English

Last update: 23 March 2021

Please note that the number of course places open to exchange students is limited. If there are too many exchange students wishing to participate in a course, places are allocated according to the first-come-first-served principle.

Please note that the list might be subject to alterations.

Subject Code	Subject	ECTS credits
BCC-2	Applied Artificial Intelligence (AI)	3
BCC-2	Creative Code Lab 2: Connected World	5
BCC-2	Database Systems & Webservices	2
BCC-2	Design for All	2
BCC-2	Introduction to human-centered design	2
BCC-2	Networks, Cloud & Communication Security	3
BCC-2	Responsive Design and Prototyping	3
BCC-2	Selected Legal Topics for Developers and Designers	2
BCC-2	Server-Side Coding	3
BCC-2	User Research	3
BCC-2	Visual Interface Design	2
DSOEK-3	German Language	3
DSOEK-3	Scouting Austrian Culture	3

BCC = Bachelor Creative Computing. For further information, please visit:
<https://www.fhstp.ac.at/en/academic-studies-continuing-education/media-digital-technologies/creative-computing/course-contents>

DSOEK = German Language and Austrian Culture. For further information, please visit
<https://www.fhstp.ac.at/en/international/incoming-students/german-language-classes>

Applied Artificial Intelligence (AI) (3 ECTS credits)

Content:

- Introduction to image processing and computer vision,
- Supervised & unsupervised machine learning
- Clustering
- Classification
- Regression
- Deep learning
- Classic feature crafting
- Exercises (with Python):
 - Cloud-based AI services,
 - Recommender systems,
 - Concept detectors

Creative Code Lab 2: Connected World (5 ECTS credits)

Content:

In addition to the contents of the lectures of the second semester, the students are coached regarding

- the planning of their projects.
- time-efficient presentation in a short video clip.
- creating an entry about the project results and the making-of in their ePortfolio.

Throughout the two blocked weeks, tutors are available to support the students.

Database Systems & Webservices (2 ECTS credits)

Content:

- Database system overview: file storage, HTML5 web storage, SQL, NoSQL, Cloud databases
- Database design for selected systems (e.g. tables, relationships, entities, JSON storage)
- Accessing and manipulating databases through web services
- Database security & safety basics (SQL injection, automated backups, replication)

Design for All (2 ECTS credits)

Content:

- Requirements for problem-free access to information for people with disabilities
- Cultural and social characteristics of different user groups
- Accessibility standards
- Legal framework

- Design and concept for accessible offers
- Content preparation for accessible offers

Introduction to human-centered design (2 ECTS credits)

Content:

The significance, development and use of artefacts in society will be presented related to the Human-Centered design cycle. Social effects of media and technology use will be discussed with current social trends and controversies. The tension between technology and society will be pointed out.

Furthermore, an overview of theories of perception, cognitive and communication psychology, as well as pedagogy, media science and sociology of technology with a focus on interactive media is given.

Finally, there is an introduction to user experience with a focus on the field of interactive media. Finally, we clarify what user experience and usability mean and which standards or guidelines can be used to check them.

Networks, Cloud & Communication Security (3 ECTS credits)

Content:

Introduction to concepts and tools:

- Fundamentals of network technology, protocols & formats (HTTPS, REST, JSON)
- Real-time communication
- Server administration & cloud services (IAAS, PAAS)
- Web security, certificates and encryption

Responsive Design and Prototyping (3 ECTS credits)

Content:

- Introduction to responsive design
- Introduction to Raster Systems and Guidelines
- Navigation concepts in responsive design
- Wireframing and Prototyping Tools and Techniques
- Introduction to various kinds of Lo-Fi to Hi-Fi prototypes
- Software Training

Selected Legal Topics for Developers and Designers (2 ECTS credits)

Content:

Relevant legal topics:

- Copyright & image rights
- Software licenses and open source
- Privacy & data protection (GDPR)
- Media law

Server-Side Coding (3 ECTS credits)

Content:

Introduction to concepts and tools:

- Software development languages & tools for server-side development
- Industry-standard web frameworks with a focus on multi-platform development
- Architecture considerations and advice for creating reliable multi-user apps (e.g., asynchronous execution)
- User authentication and managing logins

User Research (3 ECTS credits)

Content:

The course conveys methods for obtaining the essential user- and environment information required for creating an interactive product.

The analyses covered include competitor analysis, quantitative and qualitative methods of user research, usage analysis, trend and market analysis. Furthermore, the course contains an introduction to simple statistics for the preparation and interpretation of the collected data.

The taught methods for describing the target group within an interactive application include personas and scenarios.

Visual Interface Design (2 ECTS credits)

Content:

- Elements and principles of interface design
- Navigation concepts and orientation
- Visual elements and interface patterns
- Perception of design
- Introduction to Web Typography and Variable Fonts
- Introduction to Visual Hierarchy in Interface Design

- Software Training

German Language (3 ECTS credits)

Content:

Students train their speaking, writing, reading and listening skills in the German language.

The course is offered at three different levels:

- German 1: for learners without previous knowledge of German
- German 2: for learners with some knowledge of German on the first basic user level of CEFR
- German 3: for learners who exceed the first basic user level

Placement tests and consultation for learners of all levels at the beginning of the semester.

Scouting Austrian Culture (3 ECTS credits) – in English

Content:

Workshop sessions on collecting and contributing facts and experiences on Austrian geography, history, arts, music and further topics of interest, including participation in excursions.