

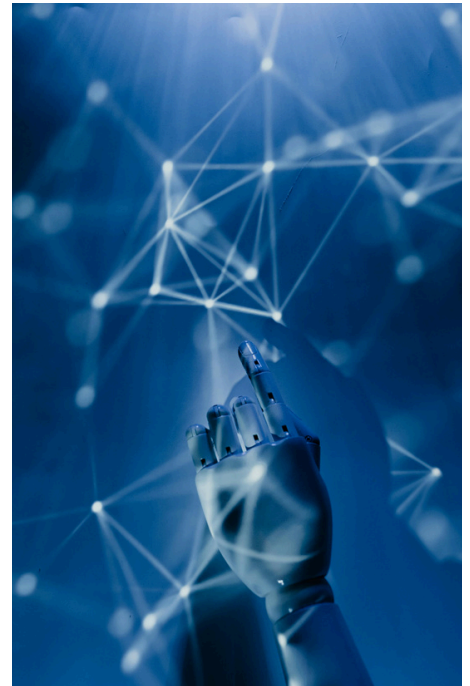
COURSE: IMMERSIVE WEB & 3D TECHNOLOGIES



This course introduces the fundamentals of 3D modeling and real-time 3D on the web, covering light, textures, transformations, and performance aspects. Students learn to design interactive 3D web applications using tools such as Google Modelviewer, Spline, and WebGL, and to evaluate immersive environments. The course also explores the role of interactivity in user experience and provides insights into web-based virtual reality.

Qualification target:

- Gain a basic understanding of 3D modeling (light, rasterization, vectors, transformations, textures, etc.)
- Acquire a basic understanding of real-time 3D (on the web) (performance, limitations, etc.)
- Build a basic understanding of the development of interactive experiences on the web
- Understanding the importance of immersive web experiences and interactivity / immersiveness for the user experience
- Be able to design interactive 3D web applications, in particular with the Google Modelviewer, Spline and WebGL (using Webflow if necessary)
- Be able to create your own 3D modeling (e.g. with Spline)
- Be able to evaluate immersive 3D web environments (performance, etc.)



Contents:

- 3D modeling (light, rasterization, vectors, transformations, textures, etc.)
- Real-time 3D (on the web) (performance, restrictions, etc.)
- Development of interactive experiences on the web
- Understanding the importance of immersive web experiences
- Importance of interactivity / immersiveness for the user experience
- Be able to design interactive 3D web applications, in particular with the Google Modelviewer, Spline and WebGL (using Webflow if necessary)
- Be able to create your own 3D modeling (e.g. with Spline)
- Be able to evaluate immersive 3D web environments (performance, etc.)
- Excursus: Virtual reality, especially web-based VR (e.g. with the Meta Quest 3 / 4)

Certificate degree:

Digital further education at university level – our part-time, system-accredited digital study programme at the Digital Business School of the HfWU. Certificates are issued by the Nürtingen-Geislingen University of Applied Sciences.

1 course, 6 ECTS -> No formal requirements for participation

Organization:

Lecturer: Philipp Roth

Workload: 150 hours

Framework: Lecture, discussions, exercises and case studies

Examination: Student research project (100%)

Course Language: English