Hochschule Kempten
University of Applied Sciences

Computer Science - Game Engineering
– Bachelor of Science –

THE ROLE OF GAME ENGINEERING

These days, the German game industry generates a turnover of approx. 2.0 billion euros per year, which means that it has turned into the most important infotainment segment, surpassing even the movie and music industries. In addition to the games for entertainment purposes, the so-called "serious games", especially designed for a primary purpose other than entertainment also contribute to this growth market. In this area, the field of simulative training is particularly promising. For example, more and more companies have their employees undergo playful training with the help of immersive training simulators. Surgeons practice complicated surgical interventions in interactive simulators in order to minimize mistakes. Also in advertising, computer games are used more and more often in order to acquire customers. In addition to this economic factor, games also have gained cultural importance as a form of art, especially in the youth subculture. However, it is a fact that far too few game developers were trained in the past. According to the "Game Development Salary Report" they rank among the top earners among computer scientists.

JOB PROSPECTS

As a graduate of our course in "Game Engineering" you can work as a programmer in the game industry and apply special methods required for game development. Your course of study at Kempten University takes into consideration aspects of both game design and game economy. Therefore, you will be able to monitor the entire production chain of a game, making the course interesting for potential experts and leaders in the game sector, too. Of course, you may also work in game-related sectors, such as interactive 3D simulations, playful marketing or multimedia applications after your course of study. And since our degree course "Computer Science - Game Engineering" comprises a complete basic training in computer science you may find work also in traditional computer science areas.

PERONAL REQUIREMENTS

In addition to the skills and abilities that make a good computer scientist, such as logical and abstract thinking, meticulousness and flexibility, a certain artistic and creative vein is necessary for the Bachelor's Degree Course "Game Engineering". Good three-dimensional imagination is an asset, too. A passion for and devotion to computer-game development is indispensable.

STRUCTURE OF THE COURSE

The basic studies period covers the first two semesters. Besides technology fundamentals you will acquire sound basic knowledge of computer science, game design and 3D-modelling and animation. Moreover you will learn to master essential mathematical basics and will be trained intensively in programming.

During the advanced studies the core subjects that are indispensable for your future work are taught. The main emphasis in this specialisation area is on subjects specific for game engineering, such as Game Programming and Game Physiology. During the work placement semester (semester 5) you will put your theoretical knowledge into practice in a real-life job environment. Preferably, you should work in the game industry or in related sectors. You may give your studies an individual game-specific profile by means of information management projects and course-related electives. You will complete your studies with a bachelor's thesis in the field of Game Engineering. After successful completion of the course of study you are awarded the academic degree Bachelor of Science (B. Sc.).

The chart below shows an exemplary study outline. The actual subjects offered are set forth in the respective study plan.

Sem. 7	Bachelor's thesis															Elective					Elective					Elective				
Sem. 6	Information Management Project															Control of Virtual Avatars					Elective					Elective				
Sem. 5	Work placement semester																									Complimentary lectures				
Sem. 4	Probability Theory & Numeric Control					Distributed Software Systems					Computer Networks					Software Laboratory/Game/ Numerics					Game Programming					Project Management				
Sem. 3	Discrete Mathematics					Databases					Software Engineering I					Software Engineering II					Operating Systems					Computer Graphics				
Sem. 2	Linear Algebra & Analytic Geometry					Computer Science Theory					Programming II					Algorithms & Data Structures					Game Design					Drawing & Design				
Sem. 1.	Analysis					Introduction in Computer Science					Programming I (for Games)										IT Systems					Modelling and Animation				
CP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

CP = Credit Point; IT = Information Technology

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IMPORTANT LINKS
(Information in English on our website)

www.hs-kempten.de > INTERNATIONAL > click English flag (in the top left-hand corner)

Information for international exchange students
(> INTERNATIONAL > EXCHANGE STUDENTS / INCOMING)

Study programmes – short description in English
(> INTERNATIONAL > DOWNLOAS > Study Programmes

Guests and Visitors at Kempten University
(> INTERNATIONAL > GUESTS AND VISITORS

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PLEASE NOTE that, although this description is written in English, the study course is taught in German