Technology
Arts Sciences
TH Köln

Course Manual CA

Computer Animation

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General information

Long name	Computer Animation
Approving CModule	CA_BaMT, CA_BaTIN
Responsible	Prof. Dr. Stefan Grünvogel Professor Fakultät IME
Valid from	winter semester 2022/23
Level	Bachelor
Semester in the year	winter semester
Duration	Semester
Hours in self-study	60
ECTS	5
Professors	Prof. Dr. Stefan Grünvogel Professor Fakultät IME
Requirements	Basic knowledge of computer graphics Programming knowledge imparted in the scope of Computer Science 1 and Computer Science 2 confident handling of linear algebra as well as analysis of one and more variables by scope of knowledge from mathematics 1 and mathematics 2
Language	German, English if necessary

Literature

Rick Parent, Computer Animation: Algorithms and Techniques, Morgan Kaufmann, 2007,

Dietmar Jackèl et. al., Methoden der Computeranimation, Springer, 2006

Jason Gregory, Game Engine Architecture, AK Peters, 2009

Stefan Grünvogel, Computeramimation, Vorlesungsskript

Final exam

Details	In the context of an oral examination, tasks are used to check whether the problem from the field of computer animation can be analysed and solved using suitable methods. In this context it will also be examined whether the necessary mathematical, algorithmic and theoretical basics can be explained.

Separate final exam	Yes

Minimum standard	Explanation of the most important terms, methods and definitions that were conveyed in the LV. Solving simple theoretical problems in writing using the appropriate notation. Programming of smaller simple code sequences for the generation of computer animation.
Exam Type	EN mündliche Prüfung, strukturierte Befragung

− Lecture / Exercises

Learning goals

Goal type	Description
Knowledge	animation systems - Hierarchies in Scenes - animation system - Time and Game Loop object animation - Movement in space - Time, speed and distance control - interpolation - rotations Characteranimaiton - kinematics - skinning - blend shapes - motion capture - Processing of transaction data Procedural Animation - Physically based animation - particle systems

Expenditure classroom teaching

Type	Attendance (h/Wk.)
Lecture	1
Exercises (whole course)	2
Exercises (shared course)	0
Tutorial (voluntary)	0

Special requirements

none

Accompanying material	Script
Separate exam	Yes

Separate exam

Exam Type	EN Übungsaufgabe mit fachlich / methodisch eingeschränktem Fokus lösen
Details	In order to ensure the necessary preparation of the respective lessons for the Flipped Classroom, conceptual questions must be answered independently on an e-learning platform prior to the course. The submission of a given number of sufficiently answered questions is a necessary prerequisite for participation in the summary examination.
Minimum standard	A given percentage of conceptual tasks are answered independently and in their own words. In particular, the answers have justified being detailed and understandable,

− Practical training

Learning goals

Goal type	Description
Skills	Implementation of the knowledge and skills from the lecture / exercise . Programming of the corresponding points within the framework of a game engine or another software environment.

Expenditure classroom teaching

Type	Attendance (h/Wk.)
Practical training	2
Tutorial (voluntary)	0

Special requirements

none

Accompanying material	script References to other online materials and courses on the task sheets
Separate exam	No