Module title			Abbreviation
Asset Development (Modeling and Animation)			10-GE-AE-252-m01
Module coordinator		**Module offered by**	
holder of the Chair of Computer Science IX		Institute of Computer Science	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
5	numerical grade	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

The course teaches basic concepts and methods of geometric modeling and animation in a digital 3D context. Students learn the mathematical principles for describing curves and surfaces and classify their significance for modeling digital content. They apply various methods for creating 3D assets - including manual modeling, point-based reconstruction and procedural generation. They also acquire knowledge of different animation methods such as keyframe animation, procedural motion and physics-based simulation. During the course, they design their own digital objects by applying and combining modeling and animation in a systematic manner.

Intended learning outcomes

Students should understand the mathematical foundations for asset modeling and animations and be able to work with them - practically and conceptually. This knowledge should not only enable them to independently plan, design and technically realize digital assets, but also to evaluate and further develop new approaches to generating virtual worlds and digital twins.

Courses (type, number of weekly contact hours, language — if other than German)

V (2) + Ü (2)
Module taught in: German or English
Course type: alternatively S (2) instead of V

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)

portfolio (approx. 100 hours)
Language of assessment: German and/or English
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

Teaching cycle: every year, summer semester

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Games Engineering (2025)
Exchange Program Computer Science (2025)