

<b>Module title</b>		<b>Abbreviation</b>
Game Research Lab - Design		10-I=GRDE-182-m01
<b>Module coordinator</b>		<b>Module offered by</b>
holder of the Chair of Computer Science IX		Institute of Computer Science
<b>ECTS</b>	<b>Method of grading</b>	<b>Only after succ. compl. of module(s)</b>
10	numerical grade	--
<b>Duration</b>	<b>Module level</b>	<b>Other prerequisites</b>
1 semester	graduate	--
<b>Contents</b>		
<p>The Game Research Labs are project-oriented, master-level courses. In accordance with the definition of Games Engineering, they concern themselves with the effective provision and the systematic application of principles, methods and tools for the development and application of comprehensive software systems for computer games. There are four different directions of Game Research Labs: Theory, Applications, Design and Architecture. All of them implement a scientific process during which the students develop a project based on preceding works and a novel idea or hypothesis worthwhile exploring. Typical steps in a Game Research Lab include a short literature survey, the development of a concept, its realisation and evaluation. The design of virtual worlds and games is the focus of the "Game Research Lab - Design". It especially considers the design, import and presentation of complex and novel representations of computer graphics, haptics and audio, their (partially) automatic generation, the conceptualisation and implementation of virtual environments and levels, their presentation to the user/player as well as the design of user interfaces and innovative game mechanics.</p>		
<b>Intended learning outcomes</b>		
<p>We recommend previous completion of basic courses in Games Engineering such as Interactive Computer Graphics, Human-Computer Interaction, Asset Development or Game Development (corresponds with GameLab I). The Game Research Labs empower the students to retrace current scientific works in great detail, to improve their research skills and to deepen their expertise with respect to specific challenges in Games Engineering. In terms of contents, the "Game Research Lab - Applications" comprises knowledge and skills in the development life cycle of games, in the interdisciplinary discourse needed for applications in certain domains and in consideration of platform-specific programming requirements. Knowledge and skills regarding the design of virtual worlds and their presentation are the focus of the "Game Research Lab - Design". To this end, the students learn, for example, how to work with a great number of existing software solutions in the field of design, to understand and programmatically work with widely spread and highly specialised data forms, as well as to support the interaction and presentation of contents by means of Computer Science technologies.</p>		
<b>Courses</b> (type, number of weekly contact hours, language — if other than German)		
R (4)		
<b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)		
<p>project report (10 to 15 pages) and presentation of project (15 to 30 minutes) Language of assessment: German and/or English creditable for bonus</p>		
<b>Allocation of places</b>		
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<b>Additional information</b>		
<p>Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): GE. Cf. Section 3 Subsection 3 Sentence 8 FSB (subject-specific provisions).</p>		
<b>Workload</b>		
300 h		
<b>Teaching cycle</b>		
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**Referred to in LPO I** (examination regulations for teaching-degree programmes)

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**Module appears in**

Master's degree (1 major) Computer Science (2018)

Master's degree (1 major) Computer Science (2021)

Master's degree (1 major) Computer Science (2023)