

**Module: Interactive Virtual Worlds**

<b>Level</b>	Bachelor	<b>Short Name</b>	IVW
<b>Responsible Lecturers</b>	Fabio Anthony		
<b>Department, Facility</b>	Electrical Engineering and Computer Science		
<b>Course of Studies</b>	Information Technology and Design, Bachelor		
<b>Compulsory/elective</b>	Compulsory elective	<b>ECTS Credit Points</b>	5
<b>Semester of Studies</b>	(Unspecified)	<b>Semester Hours per Week</b>	4
<b>Length (semesters)</b>	1	<b>Workload (hours)</b>	150
<b>Frequency</b>	(Flexible)	<b>Presence Hours</b>	60
<b>Teaching Language</b>	English	<b>Self-Study Hours</b>	90

The following section is filled only if there is **exactly one** module-concluding exam.

<b>Exam Type</b>	Portfolio Exam	<b>Exam Language</b>	English
<b>Exam Length (minutes)</b>		<b>Exam Grading System</b>	One-third Grades
<b>Learning Outcomes</b>	Students will be able to develop 3D interactive virtual worlds using an advanced integrated development environment.		
<b>Participation Prerequisites</b>			

The previous section is filled only if there is **exactly one** module-concluding exam.

<b>Consideration of Gender and Diversity Issues</b>	<ul style="list-style-type: none"> <li>✓ Use of gender-neutral language (THL standard)</li> <li>✗ Target group specific adjustment of didactic methods</li> <li>✗ Making subject diversity visible (female researchers, cultures etc.)</li> </ul>
<b>Applicability</b>	
<b>Remarks</b>	

## Module Course: Interactive Virtual Worlds (Lecture)

(of Module: Interactive Virtual Worlds)

<b>Course Type</b>	Lecture	<b>Form of Learning</b>	Online supported with presence hours
<b>Mandatory Attendance</b>	yes	<b>ECTS Credit Points</b>	2
<b>Participation Limit</b>		<b>Semester Hours per Week</b>	2
<b>Group Size</b>		<b>Workload (hours)</b>	60
<b>Teaching Language</b>	English	<b>Presence Hours</b>	30
<b>Study Achievements ("Studienleistung", SL)</b>		<b>Self-Study Hours</b>	30
<b>SL Length (minutes)</b>		<b>SL Grading System</b>	

The following section is filled only if there is a course-specific exam.

<b>Exam Type</b>		<b>Exam Language</b>	
<b>Exam Length (minutes)</b>		<b>Exam Grading System</b>	
<b>Learning Outcomes</b>			
<b>Participation Prerequisites</b>			

The previous section is filled only if there is a course-specific exam.

<b>Contents</b>	<p>The course details in practical fashion how an agile information technology design and development workflow is established, with the purposes of producing 3D interactive virtual worlds.</p> <p>Topics include:</p> <ul style="list-style-type: none"> <li>• Setup and configuration of an advanced integrated development environment</li> <li>• Setup and use of version control and project management tools</li> <li>• 3D World Building specifics, including: <ul style="list-style-type: none"> <li>• User Interface creation</li> <li>• Coordinates, Transforms, Units and Project Organization</li> <li>• Mesh Actors, Materials and Lighting</li> <li>• Physics and Particle Systems</li> <li>• Landscapes and Foliage Systems</li> <li>• Cinematic and Audio Systems</li> <li>• Visual Scripting Systems</li> </ul> </li> <li>• Project Packaging for different release platforms</li> </ul>
<b>Literature</b>	<ul style="list-style-type: none"> <li>• Shannon, Tom. (2017). <i>Unreal Engine 4 for Design Visualization</i>.</li> <li>• McCaffrey, Mitch. (2017). <i>Unreal Engine VR Cookbook</i>.</li> <li>• Ulibarri, Stephen Seth. (2020). <i>Unreal Engine C++ the Ultimate Developer's Handbook</i>.</li> </ul>

Seifert, Carsten. (2014). *Spiele entwickeln mit Unity: 3D-Games mit Unity und C# für Desktop, Web & Mobile.*

<b>Remarks</b>	
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## Module Course: Interactive Virtual Worlds (Exercise)

(of Module: Interactive Virtual Worlds)

<b>Course Type</b>	Exercise	<b>Form of Learning</b>	Online supported with presence hours
<b>Mandatory Attendance</b>	no	<b>ECTS Credit Points</b>	3
<b>Participation Limit</b>		<b>Semester Hours per Week</b>	2
<b>Group Size</b>		<b>Workload (hours)</b>	90
<b>Teaching Language</b>	English	<b>Presence Hours</b>	30
<b>Study Achievements ("Studienleistung", SL)</b>		<b>Self-Study Hours</b>	60
<b>SL Length (minutes)</b>		<b>SL Grading System</b>	

The following section is filled only if there is a course-specific exam.

<b>Exam Type</b>		<b>Exam Language</b>	
<b>Exam Length (minutes)</b>		<b>Exam Grading System</b>	
<b>Learning Outcomes</b>			
<b>Participation Prerequisites</b>			

The previous section is filled only if there is a course-specific exam.

<b>Contents</b>	See Lecture
<b>Literature</b>	See Lecture
<b>Remarks</b>	