

Module: Interactive Virtual Worlds

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

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

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

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

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

Module Course: Interactive Virtual Worlds (Lecture)

(of Module: Interactive Virtual Worlds)

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

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

| | | | |
|------------------------------------|--|----------------------------|--|
| Exam Type | | Exam Language | |
| Exam Length (minutes) | | Exam Grading System | |
| Learning Outcomes | | | |
| Participation Prerequisites | | | |

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

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| Contents | <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"> • Setup and configuration of an advanced integrated development environment • Setup and use of version control and project management tools • 3D World Building specifics, including: <ul style="list-style-type: none"> • User Interface creation • Coordinates, Transforms, Units and Project Organization • Mesh Actors, Materials and Lighting • Physics and Particle Systems • Landscapes and Foliage Systems • Cinematic and Audio Systems • Visual Scripting Systems • Project Packaging for different release platforms |
| Literature | <ul style="list-style-type: none"> • Shannon, Tom. (2017). <i>Unreal Engine 4 for Design Visualization</i>. • McCaffrey, Mitch. (2017). <i>Unreal Engine VR Cookbook</i>. • Ulibarri, Stephen Seth. (2020). <i>Unreal Engine C++ the Ultimate Developer's Handbook</i>. |

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

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| Remarks | |
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Module Course: Interactive Virtual Worlds (Exercise)

(of Module: Interactive Virtual Worlds)

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

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

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|------------------------------------|--|----------------------------|--|
| Exam Type | | Exam Language | |
| Exam Length (minutes) | | Exam Grading System | |
| Learning Outcomes | | | |
| Participation Prerequisites | | | |

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

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|-------------------|-------------|
| Contents | See Lecture |
| Literature | See Lecture |
| Remarks | |