Module title
Augmented reality and games with Unity3D

<table>
<thead>
<tr>
<th>Module code</th>
<th>Level</th>
<th>Hours per week</th>
<th>ECTS credits</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>To be announced</td>
<td>Bachelor (B.Sc.)</td>
<td>4</td>
<td>5</td>
<td>2 weeks block course + virtual lectures</td>
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<table>
<thead>
<tr>
<th>Module instructor</th>
<th>Lecture type</th>
<th>Prerequisite(s)</th>
<th>Grading</th>
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<tbody>
<tr>
<td>Mauro Figueiredo, Algarve University</td>
<td>Lectures + Guided Lab Sessions</td>
<td>Intermediate Programming Ability</td>
<td>Single Programming Assignment</td>
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Objectives

- Understand games concepts using the Unity game development platform
- Understand augmented reality concepts
- Code using the Unity platform to create games, augmented reality or interactive applications

Students in the end of the course will master the Unity development platform. It is a fully integrated development engine providing the required functionality to create games and interactive content, while reducing the time, effort, and cost of developing the content. At present time 34% of free mobile games are developed using the Unity platform.

Students will be asked to extend an existing application or to create a game or create an augmented reality app. This will constitute the single assignment for the module.

Knowledge of JavaScript or C# is advised.

Content

- Introduction to Unity
- Scripting
- Scene Management
- Introduction to Games
- Design and implementation of Games
- Graphics
- Animation
- Augmented reality
- Extending an application / Creating a game / Creating an augmented reality application.

Textbook/teaching material (for reference purposes)

- Unity Game Development Succinctly, Jim Perry, Synfusion, 2017
- Mastering Unity Scripting, Alan Thorn, Packt, 2015
- Unity 5.x Cookbook, Matt Smith, Chico Queiroz, Packt, 2015

Note: this is not the official course descriptor according to the “Studien- und Prüfungsordnung” (SPO)