<table>
<thead>
<tr>
<th>Module Code</th>
<th>CS7GV5</th>
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<tbody>
<tr>
<td>Module Name</td>
<td>Real-time Animation</td>
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<tr>
<td>ECTS weighting</td>
<td>5</td>
</tr>
<tr>
<td>Term</td>
<td>HT</td>
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<tr>
<td>Contact Hours</td>
<td>2 lecture hours per week</td>
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<tr>
<td>Module Personnel</td>
<td>Professor Carol O’Sullivan</td>
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### Learning Outcomes
On successful completion of this module, students will be able to:

- GV5LO1 demonstrate a fundamental understanding of real-time animation algorithms and techniques that would be employed in a typical game.
- GV5LO2 develop and explain code that performs different methods of rotation interpolations.
- GV5LO3 develop and explain plug-ins for behavioural animation routines using Boids steering.
- GV5LO4 demonstrate, both orally and in written form, the ability to gather, analyse, and propose a project based on relevant literature in real-time animation and physics.

### Module Learning Aims
The aim of this module is to provide students with a deep understanding of the theory and techniques behind real time animation. We will explore computer animation and advanced issues such as behavioural animation and motion capture and also look at specific fundamental concepts such as interpolation.

### Module Content
Specific topics addressed in this module include:

- Splines and curves
- Key-frame techniques
- Quaternions for rotations / orientations
- Blending and interpolation
- Kinematics
- Motion capture systems
- Motion graphs and character control
- Animation data representations
- Behavioural Animation
- Facial Animation
- Perception in animation

### Recommended Reading List

### Module Pre Requisite
C++, OpenGL or equivalent 3D graphics library

### Assessment Details
Coursework: 100%

Students will undertake three small individual programming coursework assignments as well as one large final project involving the development of a project proposal in real-time animation and physics, for which students will be marked on the proposal and their oral presentation.