<table>
<thead>
<tr>
<th><strong>Module Code</strong></th>
<th>CS7IS5</th>
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<tbody>
<tr>
<td><strong>Module Name</strong></td>
<td>Adaptive Applications</td>
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<tr>
<td><strong>ECTS weighting</strong></td>
<td>5</td>
</tr>
<tr>
<td><strong>Term</strong></td>
<td>HT</td>
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<tr>
<td><strong>Contact Hours</strong></td>
<td>2 lecture hours per week</td>
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**Module Personnel**

Associate Professor Owen Conlan

**Learning Outcomes**

On successful completion of this module a student will be able to:

- **IS5LO1** Compare and contrast different approaches to designing and delivering adaptive applications
- **IS5LO2** Understand users of complex applications and model their behaviours, preferences and tasks
- **IS5LO3** As part of a team, design and develop powerful adaptive applications by identifying an appropriate use case and associated evaluation criteria, surveying the state of the art in existing adaptive applications and identifying their applicability to the use case, designing the models and adaptive intelligence required to fulfil the use case, building a fully functional adaptive application based on the identified use case, evaluating the appropriateness of the implemented system, collaboratively writing a group report detailing the application produced and how the team functioned.
- **IS5LO4** Write a research paper outlining the research carried out during the design, development and evaluation of the adaptive application.

**Module Learning Aims**

The module is designed to explore the theoretical principles and practical challenges in designing and developing Adaptive Applications, including personalised content and service delivery, personalised information retrieval and personalised visualisations. This hands-on module encourages students to work as part of a team in order to research, design and develop cutting edge Adaptive Applications. A key element of these applications will be clearly understanding the user (their preferences, abilities, tasks) and the type of adaptive behaviours that are being employed to support that user. The module focuses on developing knowledge and skills to apply advanced technologies to provide adaptive applications to end users.

The main themes of the module are:

- User modelling, including visual scrutability to support users in engaging with potentially complex adaptive applications
- Domain, content and service modelling to ensure adequate modelled data for the adaptive applications
- Personalisation approaches and Adaptive techniques to deliver personalised experiences across content and services
- Team work to develop complex engineering systems
- Individual research skills, particularly in the production of a research paper.

**Module Content**

Specific topics addressed in this module include:

- User modelling, including
  - Task modelling
  - User preferences
  - User characteristics
  - User behaviour
- Domain modelling
- Content and service modelling
- Personalisation approaches
- Personalised visualisations
- Adaptive techniques
- Case studies in adaptive applications, including
  - Intelligent agents
  - Recommender systems
## Advanced AI techniques
- Semantic model design
- Metadata representations
- Heuristic models

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<tr>
<th>Assessment Details</th>
<th>Coursework: 100%</th>
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<tr>
<td></td>
<td>Continuous assessment is based on 60% group work and 40% individual research paper</td>
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