### Module title
Android Programming with Kotlin

<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>tba</td>
<td>Bachelor (B.Sc.)</td>
<td>4</td>
<td>5</td>
<td>2 weeks block course + virtual lectures</td>
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</tbody>
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<thead>
<tr>
<th>Module instructor</th>
<th>Lecture type</th>
<th>Prerequisite(s)</th>
<th>Grading</th>
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<tbody>
<tr>
<td>Eamonn De Leastar, Waterford Institute of Technology</td>
<td>Lectures + Guided Lab Sessions</td>
<td>Intermediate Programming Ability</td>
<td>Single Programming Assignment</td>
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### Objectives

This course will introduce the principles, practices and tools for the development modern Android applications using the Kotlin programming language.

On completion of the course the students will be able to:

- **Knowledge & Understanding**: Understand the structure and patterns required to implement a robust Android application.
- **Skills & Abilities**: Apply these principles in the context of the practices and idioms of the Kotlin programming language.
- **Judgement & Approach**: Evaluate the Android frameworks, identifying the purpose and role of the major components and employ them in appropriate contexts.

The course will consist of a series of lectures interspersed with guided laboratories. The laboratories will apply the principles introduced in the lectures via the construction of a small number of interesting Android applications. These applications will further develop aspects of the material covered in the lectures.

Students will be asked to develop and Android application in Kotlin, with a spectrum of interesting features, utilising a subset of modern Android components. This will constitute the single assignment for the module.

### Content

- Kotlin Programming
- Android Application Architecture
- Activities, Layouts & Events
- Navigation, Lifecycles & ViewModels
- LiveData, Room & Firebase
- Testing & deployment.

### Textbook/teaching material (for reference purposes)

- Kotlin in Action, Jemerov & Isakova, Manning, 2017
- Kotlin for Android Developers, Leiva, Leanpub, 2018
- Android Programming, the Big Nerd Ranch Guide, 3rd Edition, Big Nerd Ranch Guides, 2018

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