<div class="printBefore">
<h1 class="pageTitle">GEOG40870 Advanced GIS</h1>
<h2>Academic Year 2019/2020</h2>

Ongoing technological advancements are expanding the use and applicability of GIS; spatial data and maps inform policy and decisions, and they are seamlessly shared online or through social media. The skills to efficiently gather, manipulate and interpret geographic information and harness the potential of GIS in this current information-rich and knowledge-based society are essential in, and transferable across, many sectors and research areas.

This module builds upon the skills gained in the 'Introduction to ArcGIS' module and will develop further the students' theoretical and practical knowledge of GIS while enhancing their spatial thinking capabilities. The module focuses on further exploring geoprocessing methods and tools, cartographic enhancement and online data visualisation and sharing. It will apply the suite of ArcGIS Desktop packages, as well as contemporary ArcGIS interfaces such as ArcGIS Pro and ArcGIS Online.

It will cover advanced principles of data acquisition, management and analysis when working with GIS, including advanced editing, geoprocessing and thematic mapping techniques, and 3D visualisation. Automation of ArcGIS workflows, using the application ModelBuilder and creation of online WebApps and Story Maps will also be covered in the module. Students will be introduced to ongoing technological advancements and capacitate them for life-long self-directed learning in GIS.

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<div style="text-align:center;"><p>Curricular information is subject to change</p></div>

What will I learn?

Learning Outcomes:
<p>On successful completion of the module the student will have:

- Theoretical and practical knowledge of advanced GIS applications and data processing;
- Advanced working competence of ArcGIS Desktop, including ModelBuilder and ArcScene;
- Working competence in ArcGIS Pro;
- Ability to automate geospatial analysis tasks;
- Working competence on ArcGIS Online for the creation of webmaps and WebApps;
- Ability to research, collate and manage various formats of online spatial data (including Lidar); and
- Ability for self-directed learning.

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Indicative Module Content:
<p>Advancements in GIS technology and applications.
GIS ethics: What are the implications of ever advancing innovation in GIS?
Time series; Network analysis; AddIns.
Multi-criteria analysis
Advanced layout design: Customized labels; 3D enhancement; Data-driven pages; Map packages.
StoryMap
ArcScene   Working with LIDAR data; 3D visualisation and recording.
ModelBuilder   Automating workflows.
ArcGIS Pro
ArcGIS Online - Webmaps and Web Apps.
Survey 123.
</p>

How will I learn?

Student Effort Hours:

Student Effort Type	Hours
Lectures	12
Practical	12
Specified Learning Activities	60

How will I learn? (continued)

Student Effort Hours:

Student Effort Type	Hours
Autonomous Student Learning	100
Total	**184**

Am I eligible to take this module?

<div class="subHeadCB">Requirements, Exclusions and Recommendations</div>

Learning Requirements:

<p>Basic theoretical and conceptual understanding of Geographic Information Systems principles and applications. Working knowledge of ArcGIS Desktop.</p>

Learning Recommendations:

<p></p>

<div class="subHeadCB">Module Requisites and Incompatibles</div>

Not applicable to this module.

How will I be assessed?

Assessment Strategy

Description	Timing	Open Book Exam	Component Scale	Must Pass Component	% of Final Grade
Essay: Essay of GIS ethics	Unspecified	n/a	Graded	No	10
Assignment: 3D visualisation and recording	Unspecified	n/a	Graded	No	20
Assignment: Mulit-criteria spatial analysis	Unspecified	n/a	Graded	No	15
Project: Story map CV	Unspecified	n/a	Graded	No	40
Assignment: Customising geoprocessing workflows	Unspecified	n/a	Graded	No	15

<div class="row">
<div class="col-sm-6">Carry forward of passed components
Yes</div>
</div>

What happens if I fail?

Remediation Type	Remediation Timing
In-Module Resit	Prior to relevant Programme Exam Board

Assessment feedback

<div class="subHeadCB">Feedback Strategy/Strategies</div>
<p>* Feedback individually to students, post-assessment
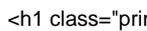* Group/class feedback, post-assessment
* Peer review activities
</p>
<div class="subHeadCB">How will my Feedback be Delivered?</div>
<p>Individual feedback on each assignment will be provided post-completion via Brightspace. This will be complemented with in-class general feedback and peer-review feedback activities (e.g. sharing output maps for review and comment).</p>

Reading List

<div class="pageBreak"><nav class="white-box no-left-arrow zero-top-margin">
<h1 class="printOnly"><img src="https://www.ucd.ie/t4cms/ucdcollegesandschools_logo.png"> UCD Course Search
Advanced GIS (GEOG40870) </h1><h3 class="printOnly">Academic Year 2019/2020</h3><p class="printOnly">The information contained in this document is, to the best of our knowledge, true and accurate at the time of publication, and is solely for informational purposes. University College Dublin accepts no liability for any loss or damage howsoever arising as a result of use or reliance on this information.</p>
  <h4 class="noPrint">Advanced GIS (GEOG40870)</h4>
  <dl>
   <dt>Subject:</dt>
   <dd>Geography</dd>
   <dt>College:</dt>
   <dd>Social Sciences & Law</dd>
   <dt>School:</dt>
   <dd>Geography</dd>
   <dt>Level:</dt>
   <dd>4 (Masters)</dd>
   <dt>Credits:</dt>
   <dd>10.0</dd>

   <dt>Trimester:</dt>
   <dd>Spring</dd>
   <dt>Module Coordinator:</dt>
   <dd>Assoc Professor Ainhoa Gonzalez Del Campo</dd>
   <dt>Mode of Delivery:</dt>
   <dd>Face-to-Face</dd>
<dt>Internship Module:</dt><dd>No</dd>

<dt>How will I be graded?</dt>
 <dd>Letter grades </dd>

  </dl>
<div class="noPrint" style="text-align:center; margin-top:10px;"><button class="menubutton" onclick="window.print()"><i class="fa fa-print fa-fw"> Print Page</button>
(Google Chrome is recommended when printing this page)</div>

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