



Geospatial Engineering MSc Development

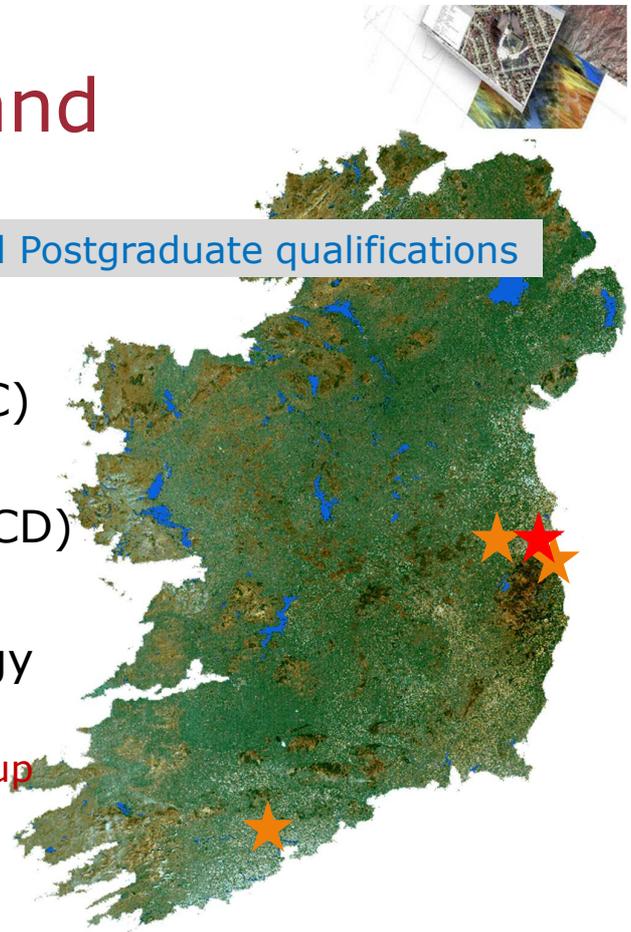
Dr. Audrey Martin FSCSI FRICS
Kevin Mooney
Dr. Eugene McGovern FSCSI FRICS



Ireland

Range of Undergraduate and Postgraduate qualifications

- ★ University College Cork (UCC)
- ★ NUI Maynooth
- ★ University College Dublin (UCD)
- ★ Dublin Institute of Technology (DIT)
 - Spatial Information Sciences Group (SISg)



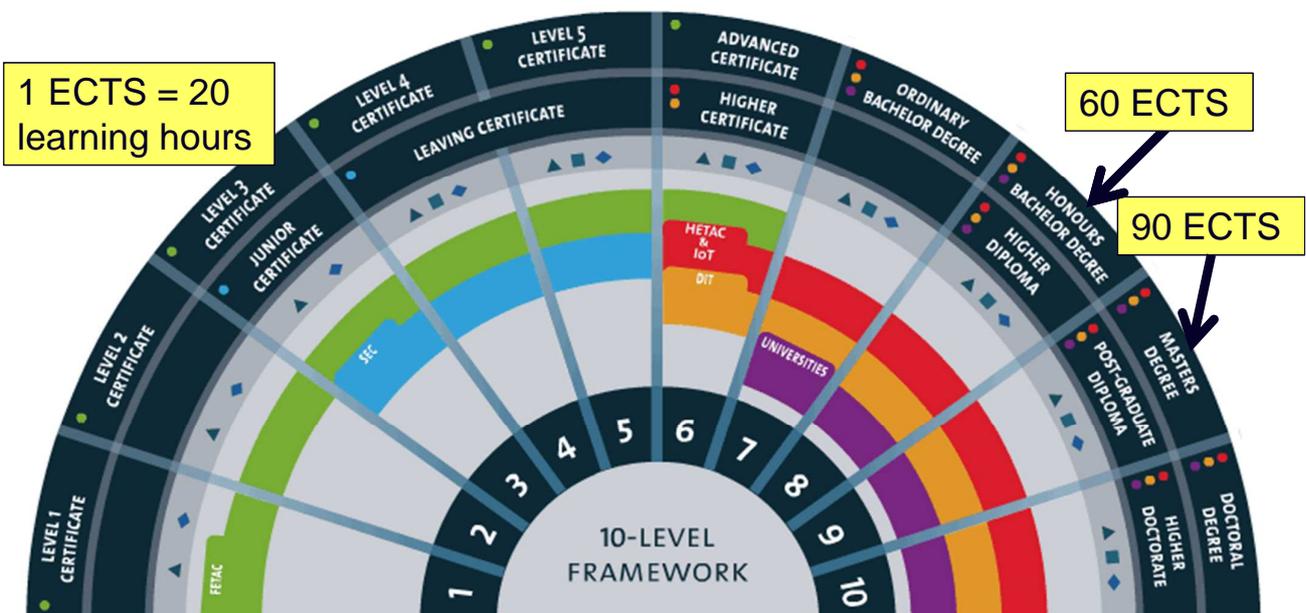
NATIONAL FRAMEWORK OF QUALIFICATIONS

Údarás Náisiúnta
Cáilíochtaí na hÉireann
National Qualifications
Authority of Ireland

WHAT ARE THE FRAMEWORK LEVELS?

WHAT IS AN AWARD-TYPE?

WHAT IS AN AWARDBODY?





- Spatial Information Sciences Industry Requirements:
 - i. Spatial data acquisition (point v cloud data)
 - ii. Processing technology (cloud computing)
- Declining numbers of undergraduate Geomatic students
- Programmes must be flexible and practically oriented to the demands of the workplace and use current technologies.

Spatial Information Sciences Group (SIGS)



Full-and part-time level 8 and level 9 programmes

Discipline	Award	NFQ	Delivery	ECTS
GIS	CPD Cert		24 weeks PT	10
Geomatics	BSc Hons	8	4 yrs FT	240
Spatial Information Management	MSc/ PGD	9	2yrs PT	90/ 60
Geospatial Engineering	MSc	9	1 yr FT/ 2yrs PT/ options	90
GI Science	MSc	9	1 yr FT/ 2yrs PT/ options	90

1 ECTS = 20 learning hours



Geospatial Engineering



Academic Level

Conversion Masters (MSc)

Aim

Produce innovative graduates with high competence, specialised skills and deep knowledge

Learning Outcomes

Integrate a breadth of complex technologies and skills framed around industry problems



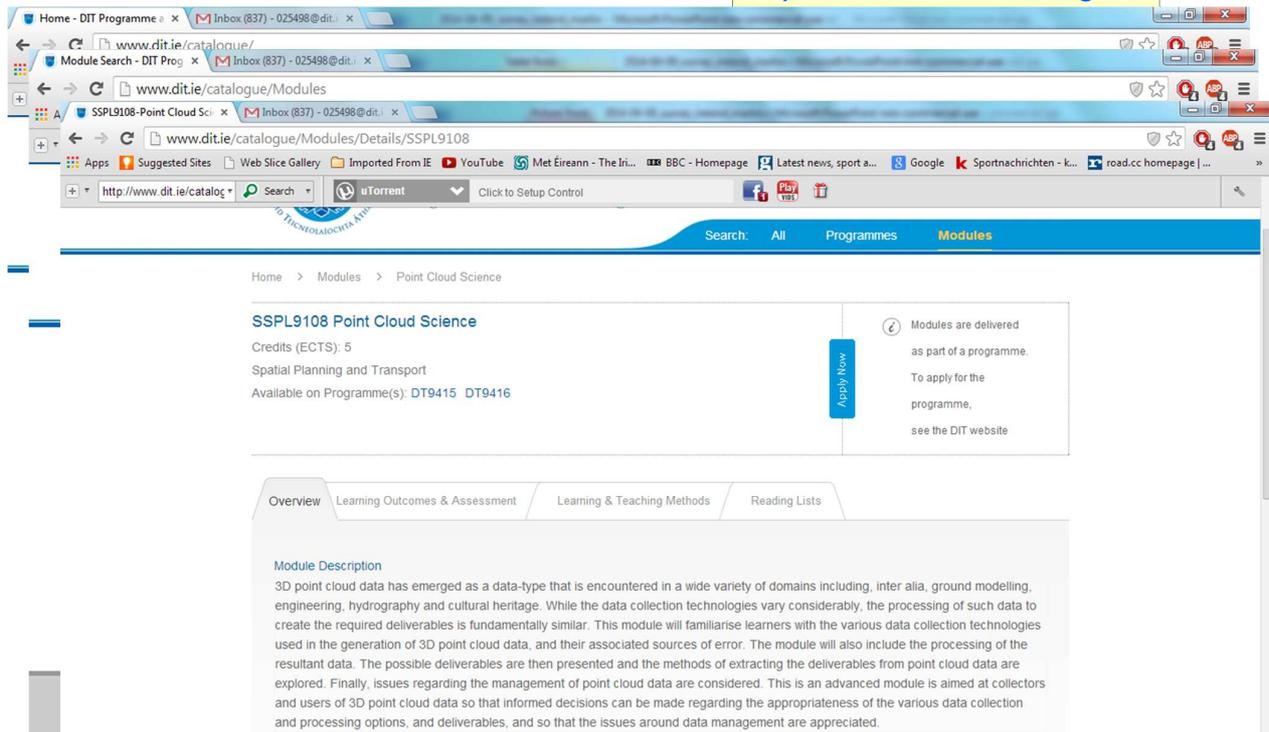
MSc Structure



Phase 1 (30 ECTS)	Phase 2 (30 ECTS)	Phase 3 (30 ECTS)
Project Management	Work Placement	
Coordinate Transformations	Research Skills	
★ Geodetic Surveying	Traditional Point Positioning & Risk management of data	
Geospatial Data Provision	★ Point Cloud Science	3D cloud data theory &
★ Systems and Practise 1	Field-based Point Positioning	Field-based cloud capture & processing
Option 1	Option 2	

2014 Optional Modules (5 ECTS each)

- ★ Digital Elevation Models from Airborne sources
- Visualisation and Delivery of Geospatial Information
- Geographic Information Science I
- ★ Spatial data for 3D Urban Models
- National Landscape and Land Cover models
- ★ Geospatial Engineering for Building Information Modelling



Topcon Positioning Systems Sponsorship

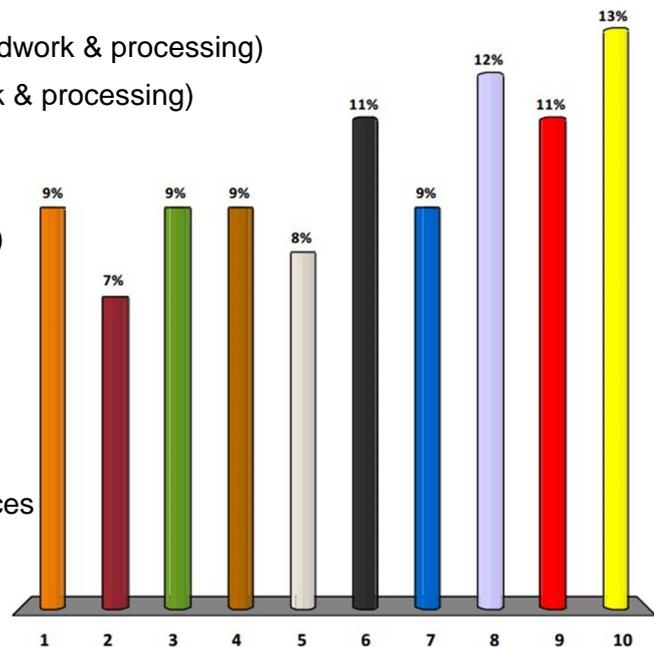


2014 Industry Survey



Rank the following modules in order of importance

1. Systems and Practise 1 (Point Positioning fieldwork & processing)
2. Systems and Practise 2 (Point Cloud fieldwork & processing)
3. Coordinate Transformations
4. Geospatial Reference Systems
5. Geodetic Surveying (Point Positioning Theory)
6. Point Cloud Science (Laser Scanning)
7. Geospatial Data Provision (Remote Sensing & GNSS)
8. Spatial Data for 3D Urban Models
9. Geospatial Engineering for BIM
10. Digital Elevation Models from Airborne Sources

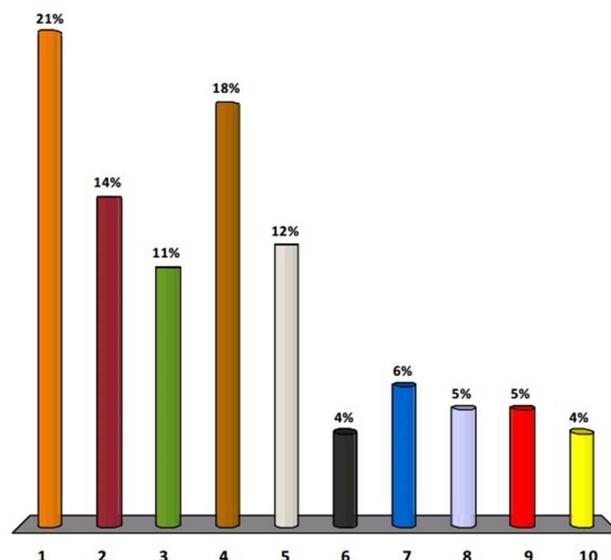


Graduate Attribute Survey



Rank the following graduate attributes in order of importance

1. Disciplinary knowledgeable
2. Work-based learners
3. Excellent communicators
4. Problem solvers
5. Active team players
6. Leaders
7. Well organised
8. Decision makers
9. Actively involved in the profession
10. Engaged in life-long learning





Programme Delivery



Delivery	Full-time	Part-time	Modular
ECTS	30	15	5
Annual	3 * 15 weeks (1 Year)	6 * 15 weeks (2 Years)	Open
Weekly	14 hours	7 hours	2-3 hours

Programme Assessment

Formative 75%	Summative 25%
Project based learning	Written Exams
Problem based learning	Oral Exams
Industrial Simulation	
Presentations: Written, Oral & Visual	



Admission and Costs



Admission Requirement	Minimum Threshold
Academic	BSc (Hons) 2.2
Professional	Equivalent professional membership with interview
Non English speakers	6.0 IELTS

Delivery Mode	Cost EU (International)
Full-time	€5,850 (€12,500)
Part-time	€2,925 per annum
CPD Module	€400 per 5 ECTS module €1,380 Dissertation



- **Student Feedback** (*December 2013 & June 2014*)
 - Recommend the programme to colleagues
 - Modern Geospatial field equipment available
 - Significant benefit of Work Placement module
- **External Examiner Feedback** (*June 2014*)
 - Well designed programme with high quality content
 - Real world projects and assignments
 - Geospatial field equipment available is unparalleled in Ireland
 - Need to provide academic writing support for mature learners
 - Need to adopt a rigours approach to plagiarism



2013/2014

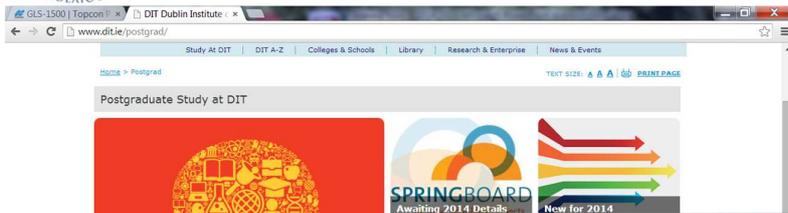


2014/2015

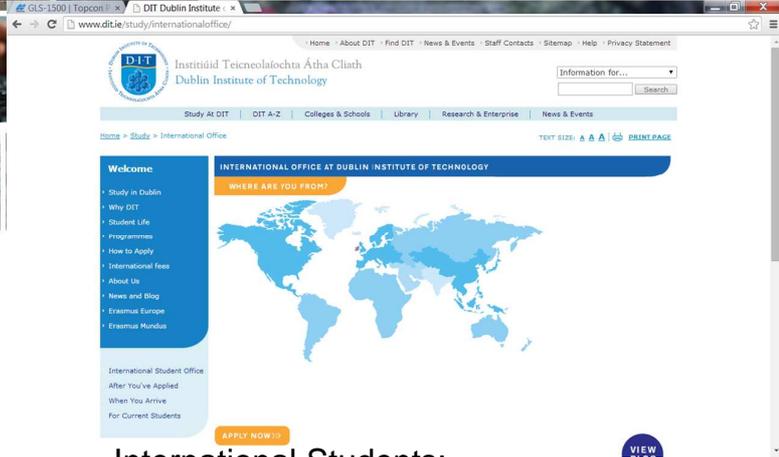




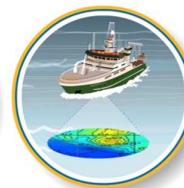
Programme Information



Postgraduate programmes:
<http://www.dit.ie/postgrad/>



International Students:
<http://www.dit.ie/study/internationaloffice/>



Thank You