

## **BSc (Hons) Surveying and Mapping Sciences**

Course Aim and Title	BSc (Hons) Surveying and Mapping Sciences
Additional Versions of this Course	
Intermediate Awards Available	BSc, Cert HE, Dip HE
Teaching Institution(s)	UEL
Alternative Teaching Institutions (for local arrangements see final section of this specification)	
UEL Academic School	Architecture, Computing and Engineering
UCAS Code	H206
Professional Body Accreditation	Accredited by Chartered Institution of Civil Engineering Surveyors (CICES)  Accredited by the Malaysian Land Survey Board
Relevant QAA Benchmark Statements	Construction, Property and Surveying Engineering Geography
Date Specification Last Updated	September 2018

### **Course Aims and Learning Outcomes**

This course is designed to give you the opportunity to:

1. Develop subject knowledge and understanding, subject specific skills and cognitive skills within the spectrum of geomatics. That is in terms of spatial measurement, spatial data - their collection, management and application - particularly with regard to issues of data quality - in a range of disciplines.
2. Appreciate the scientific principles underlying the discipline and an ability to assess the significance of developments in both theory and practice;
3. Develop an appreciation and practical working knowledge of an appropriate range of technologies for the effective, viable and innovative solution of a wide range of spatial problems;
4. Practise the analytical, managerial and professional skills required for entry into professional careers.

What you will learn:

#### **Knowledge**

1. Demonstrate a clear appreciation of the application and limitations of survey and mapping techniques and new developments in surveying practise for large scale surveys, topographic surveys, engineering surveys, hydrographic surveys, Cadastral Surveys and in specialised areas.

2. Discuss and understand the legislative frameworks of safety, health and the environment along with contract and planning, land ownership, land registration and planning issues;
3. Explain and illustrate the role requirements and responsibilities of the professional surveyor in terms of data collection, analysis and presentation.

Thinking skills

4. Demonstrate ability in mathematical, graphical and computer based processing, analysis and presentation of spatial data.

1. Recommend appropriate survey and mapping techniques and procedures to be applied in different applications;
2. Research problems and critically reflect on data produced based on the application of current knowledge and innovative solutions.

Subject-Based Practical skills

3. Demonstrate practical competency in the execution, planning and completion of field survey tasks and in the use of field survey equipment, total stations, levels and GNSS.
4. Demonstrate practical competency in the use of other data collection and processing techniques, including laser scanning, photogrammetric and remote sensing sources and their use in two and three dimensional data collection
5. Solve problems and demonstrate and apply understanding of the limitations of data collection, processing, analysis and presentation techniques.
6. Recommend appropriate surveying techniques, error checking and control procedures which can be used in surveying projects.

Skills for life and work (general skills)

7. Demonstrate a scientific approach to research problems and design procedures for the collection and analysis of data;
8. Apply transferable skills and show an appreciation of lifelong learning and continuing professional development
9. Have the ability to communicate effectively and work within project teams.

## Learning and Teaching

### Knowledge is developed through

1. Lectures where the main subjects are introduced.
2. Directed practical laboratory/field sessions where students are guided in how to use the technology
3. Seminars, where discussions are used to further the ideas introduced in the main lectures
4. Problem Based Learning

Thinking skills are developed through

5. Tutorials, where students are guided by self-directed study to allow for the further discussion of the ideas introduced in the main lectures

6. Practical laboratory and field work where students apply their knowledge learnt by completing practical tasks
7. Dissertation in the final year, where students take a chosen topic which has a scientific/practical base allowing the students to conceptualise their own ideas. • Problem Based Learning – especially in EG6122

Practical skills are developed through

8. Practical laboratory work, both self-directed and lecturer-directed.
9. Field work, both self-directed and lecturer-directed.
10. Problem Based Learning – especially in EG6122
11. The first year field scheme, where student work in groups to solve real word problems

*Skills for life and work (general skills) are developed through*

12. The inclusion of professional ethics and studies in both the second and final year.
13. The use of technology, and the changes in technology introduced in the majority of modules

•	<b>Presentation skills.</b>

## Assessment

Assessment is undertaken in various modes, including coursework, group and individual presentations, and exams. The balance between exams and coursework is approximately 30% exams, 10% presentations and 60% coursework.

In general, the assessment takes the form of: Knowledge is assessed by

1. Examinations
2. Practical work
3. Experiments

Thinking skills are assessed by

4. Essays
5. Reports
6. Presentations

Practical skills are assessed by

7. Laboratory work
8. Field work
9. Laboratory reports

Skills for life and work (general skills) are assessed by

10. Presentations
11. Within all the coursework
12. The practical work both in the laboratories and field work, that are based on real world problems


### Work or Study Placements

The School has strong links with industry and employers often approach us when looking for placement / internship students. We encourage students to consider seeking industrial experience during their academic course, either through work experience during the summer vacations or through the optional sandwich placement between level 5 and level 6. Those students who opt for a year out placement will be enrolled on a 120 credit Industrial Sandwich Placement module EG5100 which will appear in the final transcript as evidence of the 'sandwich' placement year.

An employment liaison officer oversees the administration of the year out placements and assists in helping students secure a placement. We are fortunate in the support of our Industrial Advisory Board (IAB) partners in enabling this important optional element to happen, although this is a competitive process and a placement cannot be guaranteed.

**Degree Apprentices** will be fully employed in the Geospatial and Mapping Science Industry before commencing this course of study. In addition to studying this educational course, 'Geospatial and Mapping Science' Degree apprentices will, need to achieve the work based competencies as documented in the relevant apprenticeship standard:

<https://www.instituteforapprenticeships.org/apprenticeship-standards/geospatial-mapping-and-sciencedegree/>

### Course Structure

All courses are credit-rated to help you to understand the amount and level of study that is needed.

One credit is equal to 10 hours of directed study time (this includes everything you do e.g. lecture, seminar and private study).

Credits are assigned to one of 5 levels:

1. Equivalent in standard to GCE 'A' level and is intended to prepare students for year one of an undergraduate degree course.
2. Equivalent in standard to the first year of a full-time undergraduate degree course.
3. Equivalent in standard to the second year of a full-time undergraduate degree course.
4. Equivalent in standard to the third year of a full-time undergraduate degree course. 7 Equivalent in standard to a Masters degree.

Courses are made up of modules that are each credit weighted.

**The module structure of this course:**

<b>Level</b>	<b>Module Code</b>	<b>Module Title</b>	<b>Credit Weighting</b>	<b>Core/Option</b>	<b>Available by Distance Learning? Y/N</b>
4	EG4019	Mental Wealth; Professional life 1	20	Core	N
4	EG4012	The Built Environment	20	Core	N
4	EG4013	Construction Technology	20	Core	N
4	EG4018	Land and Construction Surveying	20	Core	N
4	EG4010	Analytical skills in Built Environment	20	Core	N
4	EG4017	GIS & Mapping ¥	20	Core	N
5	EG5010	Mental Wealth; Professional life 2	20	Core	N
5	EG5035	Contract Procedures	20	Core	N
5	EG5016	Engineering Surveying ¥	20	Core	N
5	EG5017	Ground Engineering	20	Core	N
5	EG5022	3D Data Modelling and Analysis	20	Core	N
5	EG5020	GNSS & Reference System	20	Core	N
5	EG5021	Employment Internship	120p	Option	N

6	EG6010	Mental Wealth; Professional life 3	20	Core	N
6	EG6011	Capstone Project	40	Core	N
6	EG6015	Land Law and Registration	20	Core	N
6	EG6016	Professional Geospatial Practice	20	Core	N
6	EG6018	Sea Surveying	20	Core	N

¥ = compulsory field trip

### Part time study (including Degree Apprentices)

Part time students (not including apprentices) would normally study 60 credits per academic year

Degree Apprentices would normally study in part time day release mode. They would normally study 60 credits per academic year in years one, two and three, and 90 credits per academic year in years four and five.

'Geospatial and Mapping Science' Degree Apprentices would normally start at level 4.

1. The learning outcomes for approximately 25% of the assignments for each part time study year are able to be achieved via work related examples/projects.
2. The opportunity to achieve the learning outcomes via work based assignments will depend on the occupational profile of the apprentice.
3. Work based assignment learning outcomes will be assessed by module teaching team under UEL's academic framework.

**Please note:** *Optional modules might not run every year, the course team will decide on an annual basis which options will be running, based on student demand and academic factors, in order to create the best learning experience.*

The optional level P placement module EG5100 is required to obtain a sandwich degree, in addition to the other requirements, but does not count towards the degree classification.

**Additional detail about the course module structure:**

A core module for a course is a module which a student must have passed (been awarded credit) in order to achieve the relevant named award. An optional module for a course is a module selected from a range of modules available on the course.

The overall credit-rating of this course is 360 credits. If for some reason you are unable to achieve this credit you may be entitled to an intermediate award, the level of the award will depend on the amount of credit you have accumulated. You can read the University Student Policies and Regulations on the UEL website.

#### Course Specific Regulations

The BSc (Hons) Surveying and Mapping Sciences degree is accredited by the Chartered Institution of Civil Engineering Surveyors

This course can provide the underpinning educational base for the 'Geospatial and Mapping Sciences' degree apprenticeship.

### Typical Duration

The expected duration of this course is 3 years full-time or 6 years part-time.

It is possible to move from full-time to part-time study and vice-versa to accommodate any external factors such as financial constraints or domestic commitments. Many of our students make use of this flexibility and this may impact on the overall duration of their study period. Please discuss this with your course leader if you wish to move from one to the other.

**Degree Apprenticeship mode:** The expected duration for Apprentices is 5 years in part-time day release mode of study, which does not include the Industrial Sandwich Placement.

A student cannot normally continue study on a course after 4 years of study in full time mode unless exceptional circumstances apply and extenuation has been granted. The limit for completion of a course in part time mode is 7 years from first enrolment.

### Further Information

More information about this course is available from:

1. The UEL web site ([www.uel.ac.uk](http://www.uel.ac.uk))
2. The course handbook
3. Module study guides
4. UEL Manual of General Regulations (available on the UEL website)
5. UEL Quality Manual (available on the UEL website)
6. School web pages
7. Chartered Institution of Civil Engineering Surveyors <http://www.cices.org>

All UEL courses are subject to thorough course approval procedures before we allow them to commence. We also constantly monitor, review and enhance our courses by listening to student and employer views and the views of external examiners and advisors.

Additional costs (for UEL on-campus students):  
For the 2018/19 academic year these were typically:

Compulsory field trip (at levels 4 and 5): £250 - £300 per student per field trip

Note that cost could be considerably lower if students book ahead of time and/or share accommodation with friends.

Besides the normal costs of stationery, there are also costs involved in the purchase of specialist construction PPE, drawing equipment and transport costs to two/ three day trips to exhibitions and trade fairs. These costs will be in the region of £150 per year.

### **Alternative Locations of Delivery**

Not applicable