

Surveying and Mapping Sciences

This programme is no longer recruiting. Please refer to the programme specification for BSc (Hons) Civil Engineering Surveying & Mapping Sciences.

Final award	BSc (Hons)
Intermediate awards available	Cert HE, Dip HE,
UCAS code	H244
Details of professional body accreditation	Chartered Institution of Civil Engineering Surveyors
Relevant QAA Benchmark statements	Building / Surveying Geography
Date specification last up-dated	May 2013

Profile

The summary - UCAS programme profile

BANNER BOX:

There is significant demand from industry for graduates from this programme.

ENTRY REQUIREMENTS

- 240 UCAS tariff points
- Including two A2 passes

ABOUT THE PROGRAMME

What is Surveying and Mapping Sciences?

The programme encompasses a diversity of disciplines characterised around the major theme of spatial data measurement

Surveying and Mapping Sciences at UEL

We have over 60 years experience in teaching Surveying and Mapping (Geomatics) and have developed programmes which are current and will give you the opportunity to develop your understanding and skills. Our programmes have long been recognised in Industry as providing graduates with a wide range of practical and theoretical skills. With a large proportion of laboratory and practical work you will reinforce the theories and practices learnt in the classroom with 'hands on' experience. Our programmes offer you the opportunity to study the fundamental knowledge and theories enquired by all Surveyors and apply these to the practical work environment.

Programme structure

3 Year full time. The programme is modular and available in a part-time mode. The programme is taught in combination with the other degrees in Surveying, making it possible to change between pathways in the first year.

Learning environment

The programme benefits from access to purpose built labs, up-to-date software and IT labs and modern surveying equipment. Teaching is delivered through formal lectures, tutorials, problem based learning, practical classes and laboratory sessions. Group work is also encouraged in many modules. There is a field scheme in the first year.

Assessment

Assessment varies from module to module but will include examinations, coursework, project work, laboratory reports, time constrained and open book assignments and tests on competence in practical sessions

Work experience/placement opportunities

The School has strong links with industry and regularly has enquiries from employers seeking staff for full and part-time employment opportunities.

Project work

The dissertation in the final year is an important feature of this programme. Throughout your studies you will undertake a number of small projects as part of the unit assessment. During the final year of the programme you will be required to complete a project in the form of independent research and study of a technical subject. This project will be supervised by a member of staff with an interest in the field and will normally include some laboratory work or the analysis of a specific survey problem. The project constitutes one third of the final year of the programme.

Added value

The programme is accredited by the Chartered Institution of Civil Engineering Surveyors and meets the academic requirements for graduate membership. It benefits from the inclusion of elements which contribute to the core competencies of the professional institution.

IS THIS THE PROGRAMME FOR ME?

If you are interested in...

- Geography
- Measurement Systems
- Cartography
- Surveying
- Photogrammetry
- Computing

If you enjoy...

Design, variety, working both indoors and outdoors, maths, science, physics, technology, IT and a career that can really make a difference to society.

If you want...

A degree with a real practical emphasis geared to meet the needs of employers and the opportunity to study specialisms such as Engineering and Geodetic Surveying, Laser Scanning, Hydrographic Surveying, or Cadastre and Land Management.

Your future career

Might be in Surveying, Civil Engineering, Construction or Archaeology. Graduates have also successfully moved to careers in business, management and finance.

How we support you

The School prides itself on its student support systems. Students are encouraged to consult with their Personal Tutors, Module Leaders and the Programme Leader. We will monitor your progress and provide assistance and advice with academic and personal problems. Alternatively, you can refer to our Student Services support who can offer further, specialised, help and support.

The School facilities include dedicated computer labs and equipment which you are free to use, as long as they are not required for a class. Technical support is readily available supported by technicians and academic staff.

Employer links are maintained through our Industrial Advisory Board and employers are invited to attend the University to talk to students about careers in Surveying. The professional bodies also visit the University regularly and provide details on the qualification process and the advantages available to members.

Bonus factors

We have close links with Surveying and Mapping Companies, many of whom come to us to look for graduates.

Outcomes

Programme aims and learning outcomes

What is this programme designed to achieve?

This programme is designed to give you the opportunity to:

- gain subject knowledge and understanding, subject specific skills and cognitive skills within the spectrum of spatial measurement and measurement for construction and dimension control;
- have an awareness of changes in society, the economy and technologies; their impact on evolving professional practices and in particular their implications for lifelong

learning; work and study within an institutional context of equal opportunities and broadening access for individuals from varying academic and cultural backgrounds;

- have the ability to effectively communicate orally, literally, graphically and numerically using appropriate office automation;

What will you learn?

All learning outcomes are covered in the programme's single honours route and where Maj, J and/or Min is shown against a learning outcome, this confirms that the learning outcome is covered in the Major, Joint and/or Minor routes offered.

Knowledge

- An understanding and practical working knowledge of an appropriate range of technologies for the effective, viable and innovative solution to a wide range of spatial problems (Maj, J and Min)
- An understanding of the scientific principles underlying the discipline and an ability to assess the significance of developments in both theory and practice; (Maj)
- An understanding and practical working knowledge of an appropriate range of technologies applied in both standard and non-standard situations. (Maj, J and Min)

Thinking skills

- Analyse which technology to use to solve which problems, based on the understanding of the background issues of spatial data and spatial measurement; (Maj, J and Min)
- The procedures for the processing of analysis of information, from spatial data issues to measurement solution. (Maj, J)
- To be able to work within a multi-cultural society. (Maj, J and Min)

Subject-Based Practical skills

- An understanding of the scientific principles underlying the discipline and an ability to assess the significance of developments in both theory and practice; . (Maj, J and Min)
- How the changes in technology and technological solutions are linked to data quality and data collection; (Maj, J)
- To gain an appreciation for spatial data - their collection, management and application - particularly with regards to the issues of data quality and responsibility. (Maj, J and Min)

Skills for life and work (general skills)

- The analytical, managerial and professional skills required for entry into professional careers.
- Transferable skills and an appreciation of lifelong learning and continuing professional development
- The ability to effectively communicate. (Maj, J and Min)

Structure

The programme structure

Introduction

All programmes 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:

- 0 - equivalent in standard to GCE 'A' level and is intended to prepare students for year one of an undergraduate degree programme
- 1 - equivalent in standard to the first year of a full-time undergraduate degree programme
- 2 - equivalent in standard to the second year of a full-time undergraduate degree programme
- 3 - equivalent in standard to the third year of a full-time undergraduate degree programme
- M - equivalent in standard to a Masters degree

Credit rating

The overall credit-rating of this programme is 360 credits.

Typical duration

The expected duration of this programme is 3 years when attended in full-time mode or minimum of 5 years and up to maximum of 8 years in part-time day release mode. Part-time block release mode is for applicants with extensive experience in industry and a block-release programme has minimum duration of 3 years.

It is possible to move from a full-time mode of study to a part-time mode of 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.

How the teaching year is divided

The teaching year begins in September and ends in June but some programmes also allow students to join at the start of Semester B, in February. A student, normally registering for 6 modules in one year (3 modules in each Semester) would do so in a full-time attendance mode of study and a student registering for up to 4 modules in one year (2 modules in each Semester) would do so in part-time attendance mode of study. Part-time block release, each block will contain 2 modules. There will be two 4-week blocks per year.

What you will study when

This programme is part of a modular degree scheme. A student registered in a full-time attendance mode will take six 20 credit modules per year. An honours degree student will complete six modules at level one, six at level 2 and six at level 3.

It is possible to bring together modules from one field with modules from another to produce a combined programme. Subjects are offered in a variety of combinations:

- Single - 120 credits at levels one, two and three
- Major - 80 credits at levels one, two and three
- Joint - 60 credits at levels one, two and three
- Minor - 40 credits at levels one, two and three

Modules are defined as:

- Core - Must be taken
- Option - Select from a range of identified modules within the field
- University wide option - Select from a wide range of university wide options

The following are the core and optional requirements for the single and major pathways for this programme

LEVEL	MODULE CODES	TITLE	SKILLS MODULES (Insert Y where appropriate)	CREDITS	STATUS SINGLE	STATUS MAJOR	STATUS JOINT	STATUS MINOR
1	SV1031	Plane Surveying		20	Core	Core	Core	Core
1	SV1032	Quantitative Methods		20	Core	Core	Core	
1	SV1040	Skills for Surveying	Y	20	Core	Core	Core*	
1	SV1034	Mapping		20	Core	Core	Option	Core
1	SV1035	Introduction to GIS		20	Core			
1	CE1211	Geomatics and Construction		20	Option			
1	SV1038	Applications in GIS		20	Option			
2	SV2031	Applied Information Technology		20	Core			
2	SV2036	Survey Mathematics		20	Core	Core	Core	Core

2	SV2033	Legal Framework for Geomatics		20	Core	Core		
2	SV2032	Data Acquisition and 3D Modelling		20	Core			
2	SV2038	Geodetic Surveying		20	Core	Core	Core	Option
2	SV2040	Engineering Measurement		20	Core	Core	Core	Option
3	SV3031	Dissertation	Inc Research Skills (Y)	40	Core	Core	Core	
3	SV3034	Sea Surveying		20	Option			
3	SV3041	Cadastral and Land Management		20	Option			Core
3	SV3050	Surveying Project Design and Implementation		20	Option	Option	Option	Option
3	SV3052	Management and Professional Studies for Geomatics	Y (incl employability skills)	20	Core	Core	*	**

* Students must either take this or the equivalent skills module from their other joint programme.

** Students must take their employability skills module from their other joint programme.

Requirements for gaining an award

In order to gain an **honours** degree you will need to obtain 360 credits including:

- A minimum of 120 credits at level one or higher
- A minimum of 120 credits at level two or higher
- A minimum of 120 credits at level three or higher

In order to gain an **ordinary degree** you will need to obtain a minimum of 300 credits including:

- A minimum of 120 credits at level one or higher
- A minimum of 120 credits at level two or higher
- A minimum of 60 credits at level three or higher

In order to gain a **Diploma of Higher Education** you will need to obtain at least 240 credits including a minimum of 120 credits at level one or higher and 120 credits at level two or higher

In order to gain a **Certificate of Higher Education** you will need to obtain 120 credits at level one or higher.

In order to gain an Associate Certificate you will need to obtain a minimum of 20 credits at level one or higher

Degree Classification

Where a student is eligible for an Honours degree, and has gained a minimum of 240 UEL credits at level 2 or level 3 on the programme, including a minimum of 120 UEL credits at level 3, the award classification is determined by calculating:

$$\frac{\text{The arithmetic mean of the best 100 credits at level 3}}{\times 2/3} + \frac{\text{The arithmetic mean of the next best 100 credits at levels 2 and/or 3}}{\times 1/3}$$

and applying the mark obtained as a percentage, with all decimal points rounded up to the nearest whole number, to the following classification

- 70% - 100% First Class Honours
- 60% - 69% Second Class Honours, First Division
- 50% - 59% Second Class Honours, Second Division
- 40% - 49% Third Class Honours
- 0% - 39% Not passed

Assessment

Teaching, learning and assessment

Teaching and learning

Knowledge is developed through

- Lectures where the main subjects are introduced.
- Directed practical laboratory/field sessions where students are guided in how to use the technology
- Seminars, where discussions are used to further the ideas introduced in the main lectures

Thinking skills are developed through

- Tutorials, where students are guided by self-directed study to allow for the further discussion of the ideas introduced in the main lectures
- Practical laboratory and field work where students apply their knowledge learnt by completing practical tasks

- 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.

Practical skills are developed through

- Practical laboratory work, both self-directed and lecturer-directed.
- Field work, both self-directed and lecturer-directed.
- The first year field scheme, where student work in groups to solve real world problems

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

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

Assessment

Knowledge is assessed by

- Examinations
- Practical work
- Experiments

Thinking skills are assessed by

- Essays
- Reports
- Presentations

Practical skills are assessed by

- Laboratory work
- Field work
- Laboratory reports

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

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

Quality

How we assure the quality of this programme

Before this programme started

Before the programme started, the following was checked:

- there would be enough qualified staff to teach the programme;
- adequate resources would be in place;
- the overall aims and objectives were appropriate;
- the content of the programme met national benchmark requirements;
- the programme met any professional/statutory body requirements;
- the proposal met other internal quality criteria covering a range of issues such as admissions policy, teaching, learning and assessment strategy and student support mechanisms.

This is done through a process of programme approval which involves consulting academic experts including some subject specialists from other institutions.

How we monitor the quality of this programme

The quality of this programme is monitored each year through evaluating:

- external examiner reports (considering quality and standards);
- statistical information (considering issues such as the pass rate);
- student feedback.

Drawing on this and other information, programme teams undertake the annual Review and Enhancement Process which is co-ordinated at School level and includes student participation. The process is monitored by the Quality and Standards Committee.

Once every six years an in-depth review of the whole field is undertaken by a panel that includes at least two external subject specialists. The panel considers documents, looks at student work, speaks to current and former students and speaks to staff before drawing its conclusions. The result is a report highlighting good practice and identifying areas where action is needed.

The role of the programme committee

This programme has a programme committee comprising all relevant teaching staff, student representatives and others who make a contribution towards the effective operation of the programme (e.g. library/technician staff). The committee has responsibilities for the quality of the programme. It provides input into the operation of the Review and Enhancement Process and proposes changes to improve quality. The programme committee plays a critical role in the quality assurance procedures.

The role of external examiners

The standard of this programme is monitored by at least one external examiner. External examiners have two primary responsibilities:

- To ensure the standard of the programme;
- To ensure that justice is done to individual students.

External examiners fulfil these responsibilities in a variety of ways including:

- Approving exam papers/assignments;
- Attending assessment boards;
- Reviewing samples of student work and moderating marks;
- Ensuring that regulations are followed;
- Providing feedback through an annual report that enables us to make improvements for the future.

Listening to the views of students

The following methods for gaining student feedback are used on this programme:

- Module evaluations by questionnaires given to students in each semester
- Student representation on field committees meeting 2 times year
- Final year student debrief session - takes place the morning of the assessment board.

Students are notified of the action taken through:

List the methods that you use e.g.

- circulating the minutes of the field committee
- Information placed on internal web pages
- Being notified in classes where all the year students are present.

Listening to the views of others

The following methods are used for gaining the views of other interested parties:

List the methods that you use e.g.

- Questionnaires to former students when needed
- Industrial liaison group.
- Newsletter to ex students and employers
- Attending trade and professional meetings to both canvas for views of the profession and to inform the profession of what we are doing.

Further Information

Alternative locations for studying this programme

Location	Which elements?	Taught by UEL staff	Taught by local staff	Method of Delivery
-	-	-	-	-

Where you can find further information

Further information about this programme is available from:

- The UEL web site <http://www.uel.ac.uk>
- The programme handbook

- Module study guides
- UEL Manual of General Regulations and Policies <http://www.uel.ac.uk/qa/>
- UEL Quality Manual <http://www.uel.ac.uk/qa/>
- Regulations for the Academic Framework <http://www.uel.ac.uk/academicframework/>
- UEL Guide to Undergraduate Programmes
- Surveying notice board giving details of prospective jobs, professional meeting and conferences