

Mathematics Combined (Minor)

This version of the programme is no longer recruiting. Please refer to the programme specification for the programme with the same name.

Final award	BSc (Hons) (or if combined with a BA(Hons) Major route, the award received will be BA (Hons))
Intermediate awards available	Cert HE, Dip HE
UCAS code	-
Details of professional body accreditation	N/A
Relevant QAA Benchmark statements	Mathematics, statistics and operational research
Date specification last updated	July 2012

Profile

The summary - UCAS programme profile

BANNER BOX:

Enjoying mathematics? Willing to develop strong analytical and problem solving skills? Looking to enhance your employment opportunities in variety of areas? With a degree from the range of programmes at UEL combined with Mathematics, you can!

ENTRY REQUIREMENTS

An applicant should satisfy one of the following:

- A typical offer of 240 UCAS tariff points (including two GCE or VCE A-levels or VCE Double Award) One subject must be Mathematics or Mathematically related subject.
- 50% Merits Year 2 of BTEC National Diploma in a relevant subject area or relevant Access programme
- Mature students will be considered based on their experience and combination of interviews and equivalency tests will be used to determine their suitability for the programme
- Equivalent overseas qualifications

In addition an applicant will have the following:

- GCSE English and Mathematics at grade C or above

Students may be admitted through Accreditation of Experiential Learning (AEL) or Accreditation of Certificated Learning (ACL) processes.

In the case of applicants whose first language is not English, then a minimum IELTS of 6.0 with no skill level below 5.0 (or equivalent) is required. International qualifications will be checked for appropriate matriculation to UK Higher Education undergraduate programmes.

ABOUT THE PROGRAMME

What is Mathematics Combined?

Mathematics is a subject based on strict logic, analytical models and abstractions. Mathematics has immense applicability in many areas including science, technology, engineering, surveying, mechanics, business and commerce. Studying Mathematics is challenging, exciting, enjoyable and can lead to a rewarding career. At UEL, you can combine in your studies Computing, Information Technology, Business, Accounting, Finance or Education with Mathematics. The programme is practically oriented providing students with opportunities to explore mathematics methods and techniques in different areas.

Mathematics Combined at UEL

This programme allows you to combine with your major study a variety of mathematical subjects. Emphasis is placed on the acquisition of practical-based skills, which will provide a solid foundation for a career in your chosen field combined with strong mathematics background. Key features of this combined programme include:

- A flexible credit based programme leading towards an honours degree.
- The freedom to continue working while pursuing your studies.
- Academic support from a subject specialist tutor
- An opportunity for students from a wide range of countries and varied educational contexts to interact and exchange ideas.

Programme structure

Mathematics is offered as a minor route of 120 credits, which may be combined with a range of major routes of 240 credits, to make up the total of 360 credits required for an honours degree.

Learning environment

As well as the usual teaching and learning facilities such as well-equipped laboratories, lecture and seminar rooms and well-resourced library, students have access to a wide range of computing resources. Students are provided with software tools for mathematics applications, programming, database development, computer-aided software engineering, Internet access and Web-based development.

Each module is accompanied by a site in our online student community, UEL Plus, with discussion facilities that will enable students to discuss and resolve issues related to their studies. In addition, the module tutor will use this facility to address any common academic issues, and to contact students where necessary. It is essential therefore that you have easy and regular access to the Internet and reliable email.

Assessment

A variety of assessment methods are used. Some modules are entirely assessed by coursework, although most are assessed by the combination of coursework and examination. Coursework assessment can take a number of different forms, including presentations, demonstrations, research-based assignments and practical exercises, and might be carried out individually or in group. Examinations might be multiple choice tests or more traditional unseen questions.

Work experience/placement opportunities

Project work

Added value

In addition to the IT-related skills and knowledge acquired during your studies, you will develop a wide range of personal and professional skills including communication, presentation, negotiation, team working and time management. These sought-after skills will be useful throughout your working life and will increase your chances of finding a well-paid and interesting job after graduation or continue with further studies.

IS THIS THE PROGRAMME FOR ME?

If you are interested in...

- Mathematics
- Finding out how you can apply mathematics to different areas
- Developing your analytical and reasoning skills

If you enjoy...

- Solving challenging problems
- Logical thinking and reasoning
- Finding solutions to seemingly insoluble problems
- Working and sharing ideas with others to identify and develop these solutions

If you want...

- To combine your interest in Mathematics with other subjects
- The opportunity to develop sought-after and up-to-date skills
- To communicate and work with a wide variety of people to solve a range of problems using mathematical theory and techniques

.....then, the Mathematics Combined programme could be for you

Your future career

Employers greatly value the intellectual ability, rigour and the skills in reasoning and analytical problem solving of mathematics graduates. There is also a great demand in the UK for teachers in mathematics.

You will have the opportunity to combine any subject with mathematics in your studies and acquire invaluable combination of knowledge and skills.

There is a wide range of career opportunities for graduates with mathematics in industry, business and commerce.

How we support you

- Personal tutor support throughout the programme
- Support for development and study skills, preparation for employment and research.
- Specialist support for dyslexia and English as a second language
- Student advice services for an accommodation, finance, career, IT training and learning resources.

Bonus factors

The proximity of London means that UEL is ideally placed for developing links with a wide range of well-established, prestigious and innovative employers. The Knowledge Dock based at the Dockland Campus provides a natural channel between business and higher education, by making the knowledge and expertise of UEL available to local employers.

Outcomes

Programme aims and learning outcomes

What is this programme designed to achieve?

This programme is designed to give you the opportunity to:

- Gain sound knowledge, understanding and skills in problem-solving, data analysis, decision-making and application of mathematics and statistics to different areas.
- Develop analytical skills enabling the pursuit of wide range of career opportunities in industry, business and commerce.
- Learn and work both independently and within groups.
- Be aware of the management, professional, legal, social and ethical issues.
- Develop the necessary skills and knowledge to pursue further study.

What will you learn?

Where (Min) is shown against a learning outcome, this confirms that the learning outcome is covered in the Minor route offered.

Knowledge

- Gain sound knowledge and understanding of a range of mathematical methods and techniques (Min)
- Gain knowledge and understanding of results from areas of calculus, algebra, statistics, data analysis, data mining, optimisation, mathematics applications (Min)
- Understanding of mathematical models and their application (Min)

Thinking Skills

- Understanding of the importance of assumptions and their use (Min)
- Analytical problem solving (Min)
- Evaluation and critical analysis (Min)

Subject-based Practical Skills

- Become proficient in the practical use of Mathematics (Min)
- Use of range of specialised software packages to aid mathematical processes (Min).
- Preparation of reports and presentations (Min)

Skills for Life and Work (general skills)

- Communication Skills (Min)
- Time management (Min)
- Learning and working both independently and in groups (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 5 years in part-time mode. 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 typical student, in full-time attendance mode of study, will register for 120 credits in an academic year. A student in a part-time mode of study may register for up to 80 credits in any academic 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, but you may choose to take fewer than this. To graduate as an honours degree student, you will need to complete modules totalling 120 credits at level one, modules totalling 120 credits at level 2 and modules totalling 120 credits at level 3.

It is possible to bring together modules from one field with modules from another to produce a combined programme. We offer subjects 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 modules across the University

The following are the core and optional requirements for the single, major, joint and minor routes for this programme.

LEVEL	UEL Module Code	TITLE	SKILLS MODULES (Insert Y where appropriate)	CREDITS	STATUS SINGLE	STATUS MAJOR	STATUS JOINT	STATUS MINOR
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1	SD1331	Mathematics Fundamentals	20	-	-	-	Core
1	SD1332	Mathematics in Practice	20	-	-	-	Core
2	SD2331	Statistics in Action	20	-	-	-	Core
2	SD2332	Mathematics Applications	20	-	-	-	Core
3	SD3331	Data Analysis & Data Mining	20	-	-	-	Core
3	SD3332	Mathematical Optimisation	20	-	-	-	Core

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:

The arithmetic mean of the best 100 credits at level 3 $\times 2/3$ + 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

- Participation in lectures, tutorials and workshops
- Directed and general reading
- Primary and secondary research, e.g. using internet or Learning Resource Centre

Thinking skills are developed through

- Successful completion of set assessment tasks
- Problem Solving
- Self-appraisal and self-evaluation
- Critical evaluation of concepts, assumptions, arguments and data

Practical skills are developed through

- Use of general IT applications such as word processors and spreadsheets
- Use of specialised IT applications

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

- Working in groups to complete work set, such as presentations
- Managing time to complete assessments by deadlines

Assessment

Knowledge is assessed by

- Examinations and multiple choice tests
- Reports and presentations

Thinking skills are assessed by

- All assessment tasks set, particularly those requiring critical evaluation
- Self-appraisal of performance
- Use of appropriate problem solving skills

Practical skills are assessed by

- Assessment tasks requiring use of general and specialised IT applications
- Use of equipment in practicals and presentations

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

- Evidence of group and team working
- Ability to work to time constraints

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 involving the collection of data via questionnaires
- Informal discussions / meetings between students and teaching staff, year tutor and programme leaders
- Student representation on programme committees (meeting each semester)

Students are notified of the action taken through:

- Circulating the minutes of the programme committees
- Providing details on the programme notice board

Listening to the views of others

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

- Industrial liaison committee
- Liaison with schools and colleges whose students apply for places on our programmes

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 (<http://www.uel.ac.uk/qa/manual/index.htm>)
- UEL Manual of General Regulations <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
- School of Computing, Information Technology and Engineering web pages (<http://www.uel.ac.uk/cite/index.htm>)
- UEL catalogue for the Undergraduate Degree Scheme
- [Current External examiners](#)
- External examiner reports (available from UEL virtual learning environment (UELPlus or Moodle))