Economics and Mathematics

Undergraduate study 2014
The discipline of economics has become increasingly quantitative, with high-level mathematics and statistics skills essential for postgraduate study and for graduate jobs, particularly in finance. This programme takes core components of economics and blends these with modules which cover those aspects of mathematics that are most relevant for economists.

Economics and Mathematics at Surrey

Both economics and mathematics are highly regarded disciplines that underpin contemporary life and are fascinating subjects in their own right. Skills learned through the study and application of economics and mathematics are highly sought-after in today’s challenging economic environment in order to solve complex problems and contribute to the successful running of a variety of businesses.

Professional Training and placements

Our Professional Training placement year gives you the chance to spend a year as a salaried employee, gaining invaluable work and life experience while putting your economics, mathematics, statistics and operational research knowledge into practice for a large corporation, City institution or government department.

Why Surrey?

★ The University of Surrey is ranked 2nd in the country for Economics by the Guardian University Guide 2014
★ The programme combines two core disciplines, both of which have a strong history in teaching and research at Surrey
★ The University of Surrey boasts an outstanding employment record and offers a well-established Professional Training placement year, with a range of paid opportunities
★ The programme will provide graduates with the quantitative skills they need to succeed in industry or further study
★ The University boasts a national and international reputation for research excellence

In response to the increasingly quantitative nature of economics, we have developed a programme that combines a solid economics training with high-level mathematical and statistical skills. This programme would be particularly valuable for those who wish to pursue technical graduate jobs (in finance, for example) or for those who can see themselves continuing into postgraduate study.

Dr Jo Blanden
Deputy Head of Economics

Graduate prospects

Recent employers for students graduating from economics and mathematics degree programmes include:

» Bank of England
» JP Morgan
» Nomura
» State Street Bank
» Oxford Economics
» Lloyds TSB
» IBM
» Walt Disney Co.
» Deloitte & Touche
» Intel
» AXA Actuarial
» Royal Sun Alliance
» GlaxoSmithKline
» NHS
» Department of Transport
» HM Customs and Excise

Next steps...

1 Visit surrey.ac.uk for more details on our courses
2 Book your place on an Open Day – meet our academics and explore the campus!
Go to surrey.ac.uk/discoveropendays

Typical entry requirements

AAB – A-level grades
We do not include General Studies or Critical Thinking in our offers.

Required subjects
A-level Mathematics at Grade A.
GCSE English Language at grade C or above and GCSE Mathematics at grade A or above (or equivalent).

Other suitable qualifications
International Baccalaureate
35 points
BTEC (QCF Level 3) Extended Diploma
DDD
Other qualifications will be considered on an individual basis.

English language requirements:
6.5 IELTS minimum overall
6.0 IELTS minimum in each sub-skill

Admissions enquiries
T: +44 (0)1483 682 222
E: admissions@surrey.ac.uk
Programme overview

The programme consists of compulsory and optional modules which you study to earn credits towards your final degree.

At Level 1 all modules are compulsory. The modules will introduce you to core concepts in economics and provide grounding in the main areas of mathematics that are used in economic analysis.

At Level 2 you will study some further compulsory options and also choose from a focused range of options that will enhance the knowledge gained at Level 1. Your knowledge of macro and microeconomics will be extended, and econometrics will be introduced. In the second semester you will begin to specialise in the areas of mathematics and economics that interest you most.

At Level 3 you will select from a range of modules. These will build on expertise gained at Levels 1 and 2 and also offer the opportunity to widen your portfolio to specialised areas such as Law and Economics, Finance or Mathematics Education.

You will also be encouraged to take a research-based module where you will work on a topic of your choice under close supervision from academics.

Programme structure

Level 1
Economics modules include:
- Introductory Economics
- Principles of Microeconomics
- Principles of Macroeconomics

Mathematics modules include:
- Calculus
- Algebra
- Analysis 1
- Probability & Statistics
- Linear Algebra & Vector Calculus

Level 2
Economics modules include:
- Intermediate Microeconomics 1
- Intermediate Macroeconomics 1
- Introductory Econometrics
- Intermediate Microeconomics 2
- Intermediate Macroeconomics 2
- Intermediate Econometrics

Mathematics modules include:
- Ordinary Differential Equations
- Mathematical Statistics
- Operations Research & Optimisation
- Numerical & Computational Methods

Professional Training placement
- Optional Professional Training placement year

Level 3
Economics modules include:
- Topics in Microeconomics
- Derivatives Markets
- Economics of International Business Competition
- Topics in Macroeconomics
- Corporate Finance
- Global Strategy
- Project
- Energy Economics
- Labour Economics
- Time Series Econometrics
- Industrial Organisation
- International Trade
- Games, Markets & Information
- Public Economics
- Economic Forecasting
- Topics in Applied Econometrics
- International Finance
- Law and Economics
- Natural Resource & Environmental Economics
- Money and Banking

Mathematics modules include:
- Functions of a Complex Variable
- Statistical Methods with Financial Applications
- Mathematical Economics
- Mathematical Ecology & Epidemiology
- Manifolds & Topology
- Experimental Design
- Mathematics Education
- Bayesian Statistics
- Mathematics of Weather
- BSc Project
- Literature Review
- Literature Review II

It’s not just a place to study for your degree; it’s also a place where you develop as a person.

Louise Sims
BSc Mathematics

surrey.ac.uk
Professional Training
Our Professional Training placement year gives you the chance to spend a year as a salaried employee, gaining invaluable work and life experience while putting your economics, mathematics, statistics and operational research knowledge into practice for a large corporation, City institution or government department.

A workplace supervisor is appointed, and you are visited at least twice by one of our tutors. Your work is assessed throughout the placement and you will also complete a 3,000-word report.

We have excellent links with an extensive portfolio of companies and organisations. Recent employers for students studying economics and mathematics degree programmes include the Bank of England, JP Morgan, Nomura, State Street Bank, Oxford Economics, Lloyds TSB, IBM, Walt Disney Co, Deloitte & Touche, Intel, AXA Actuarial, Royal Sun Alliance, GlaxoSmithKline, the NHS, the Department of Transport and HM Customs and Excise.

Teaching
Teaching on the programme is by lectures, tutorials and in the University’s computing laboratories. Sessions are timetabled for approximately 15 hours each week. Modules are designed to put new knowledge into practice, and there will be a helpful overlap between the techniques learned in the mathematics modules and their applications to economics.

For each hour of teaching, you are expected to spend two to three hours in private study. There are also modules where you are required to work in groups.

The degree programme has provided me with both quantitative and qualitative skills and has prepared me for building a career.

Gaia Stigliani
BSc Economics

Assessment
The final degree classification is based on your performance in the written examinations at Levels 2 and 3 of the programme, in coursework and in a final-year project (if selected). Assessments taken at Level 1 do not count towards your final degree classification. Satisfactory completion of all Level 1 assessments is necessary for entry into Level 2. Performance at Levels 2 and 3 contributes 35 per cent and 65 per cent respectively to your final degree award. Coursework is typically worth a minimum of 30 per cent of marks, and examinations 70 per cent.

Career opportunities
Graduates from our programmes are highly successful in securing quality jobs, with a vast range of opportunities available to graduates in economics and mathematics programmes. The ‘problem-solving’ nature of the subjects, the topical and applied focus of our programmes and the experience gained on Professional Training placements all greatly appeal to employers. Our graduates go on to work in the financial sector (including banking, accountancy and investment analysis), the corporate sector (including management training) and the public sector.

As well as being designed to meet the needs of future employers, our degree programmes also give you a solid foundation from which to pursue further study or research.

Mathematics at Surrey was my first choice for a number of reasons, particularly the Professional Training placement year and Surrey’s high employment rate. I visited the University on Open Days – the staff were really friendly and informative, and I felt that I would fit in well.

I have found the programme to be both interesting and challenging; there is such a variety of different mathematics modules and I find the lecturers really helpful and willing to spend extra time to explain any difficulties. I feel that my studies have also changed my way of thinking to a more logical approach, and I am not put off by hard problems!

Last year, I was Secretary of the Maths Society where I helped plan and organise a range of events such as Maths career talks, the Maths Ball and pub quizzes. I have been amazed at how friendly and outgoing the other students are, and we all get along really well.

When I graduate, I would like to join the Met Office as a topic that interests me, and it is also a third-year module at Surrey. I would definitely recommend Surrey to anyone thinking of applying for mathematics, as I feel there is a fantastic community here. It’s not just a place to study for your degree, it’s also a place where you develop as a person.

Student profile:
Louise Sims
BSc Mathematics

Studying Economics at the University of Surrey has been a wonderfully challenging experience for me as an international student.

The course links economics theory to the issues affecting people’s lives – indeed, the complex equations that we study provide the basis for understanding many everyday situations.

I very much enjoyed the variety of modules on offer, but the course is not only about theory; I had the great opportunity to work for a London-based firm in my Professional Training year, and this proved to be an invaluable life-learning experience.

Overall, the degree programme has provided me with both quantitative and qualitative skills and has prepared me for building a career. Both the placement and my final-year module choices have helped me understand which fields I would like to specialise in and where I see myself working in the near future.

My time at the University of Surrey has been very pleasant. I would like to thank the staff in the School of Economics who have been so helpful and encouraging throughout.

Student profile:
Gaia Stigliani
BSc Economics

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Every effort has been made to ensure the accuracy of the information contained in this brochure at the time of going to press. The University reserves the right, however, to introduce changes to the information given including the addition, withdrawal or restructuring of degree programmes. The University is reviewing the structure of undergraduate modules which may result in some amendments to module titles and content.