BISHOP GROSSETESTE UNIVERSITY

Mathematics

BSc (Hons)

Why study at BGU?

Study university mathematics through interactive workshops

Small group teaching offers supportive opportunities for collaboration and discussion

Develop your understanding of connections within mathematics and principles underpinning school mathematics by studying at a higher level

Build your confidence in communicating mathematical arguments on paper and in person

Hello

CONTENTS

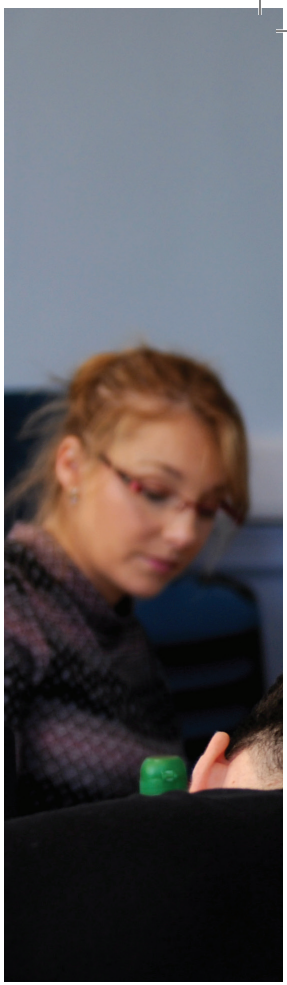
MATHEMATICS AT BGU	4
MODULES	6
WHAT WE OFFER	10
YOUR FUTURE	12
WHY BGU?	14
WHAT HAPPENS NEXT?	18
WHERE ARE WE?	19

Mathematics at BGU

Mathematics is vital in modern society, underpinning our understanding of the sciences, engineering, technology, finance and many other aspects of our everyday lives. Mathematics graduates are in short supply and we aim to provide you with the tools you need to make a real difference in the world and to those around you.

Mathematics at BGU will not only develop your mathematical and problem-solving skills; it will also allow you to share your enthusiasm to inspire others. With the support of dedicated and professional staff, you will study numerous aspects of both pure and applied mathematics and, in doing so, gain a good overall appreciation for the subject. We'll help you to develop a detailed knowledge and deep conceptual understanding of a range of mathematical topics including complex numbers, matrices, algebraic techniques, algorithmic methods, probability and calculus. You'll also learn how to apply your work to practical situations, using appropriate mathematical tools and technology to aid with real-life problem-solving.

You can be sure you'll receive all the support you need. We have experienced and dedicated staff who are passionate about mathematics and will work extremely hard to transmit that enthusiasm to you. This course is ideal if you take satisfaction from solving problems and would love to pass on your enthusiasm to others.



For full details of all of our courses, including combinations, module details, entry requirements and much more, visit **bishopg.ac.uk/courses**

“I like the lecturers for maths, we get on well and they always help when we get stuck on our work – which happens quite a lot! I feel really supported at BGU.”

James
Education Studies and Mathematics

KEY FACTS

AWARD: BSc (Hons) Joint Honours

DURATION: 3 years full-time

START DATE: September

TYPICAL OFFER: 96 – 112 UCAS tariff points with Mathematics at grade D (32 points)

INSTITUTION CODE: B38

> "We get assessed in a variety of ways. In my first year we had a split between assignments and exams and this year it's been one assignment and two exams!"

James
Education Studies and Maths

Mathematics modules

At BGU you can study Mathematics as a **joint** honours degree, giving you an in-depth knowledge of the subject. Depending on your year of entry, options and any potential course combinations, you may study some or all of the following modules in Mathematics at BGU.

For full details of all of our courses, including combinations, module details, entry requirements and much more, visit **bishopg.ac.uk/courses**

Year 1

New Horizons

This module will give you a strong foundation for further study in mathematics. You will consider properties of familiar number systems and then learn about complex numbers by exploring their algebraic and geometric properties. You will also learn about matrices and use them to solve systems of equations and describe geometric transformations. Through investigating more abstract aspects of matrix algebra you will encounter ideas that will be helpful in a range of applications later in the course.

Enhancing Algebra with ICT

This module focuses on developing your knowledge and understanding of algebra and graphs through various applications of ICT. You will build on previous work in trigonometry and complex numbers and learn about functions of complex variables. You will also study infinite sequences and series and learn about various tests for convergence. Using software to investigate functions will help you to develop algebraic skills and guide you towards a deeper understanding through visualisation.

Year 2

Calculus with Geometric Applications

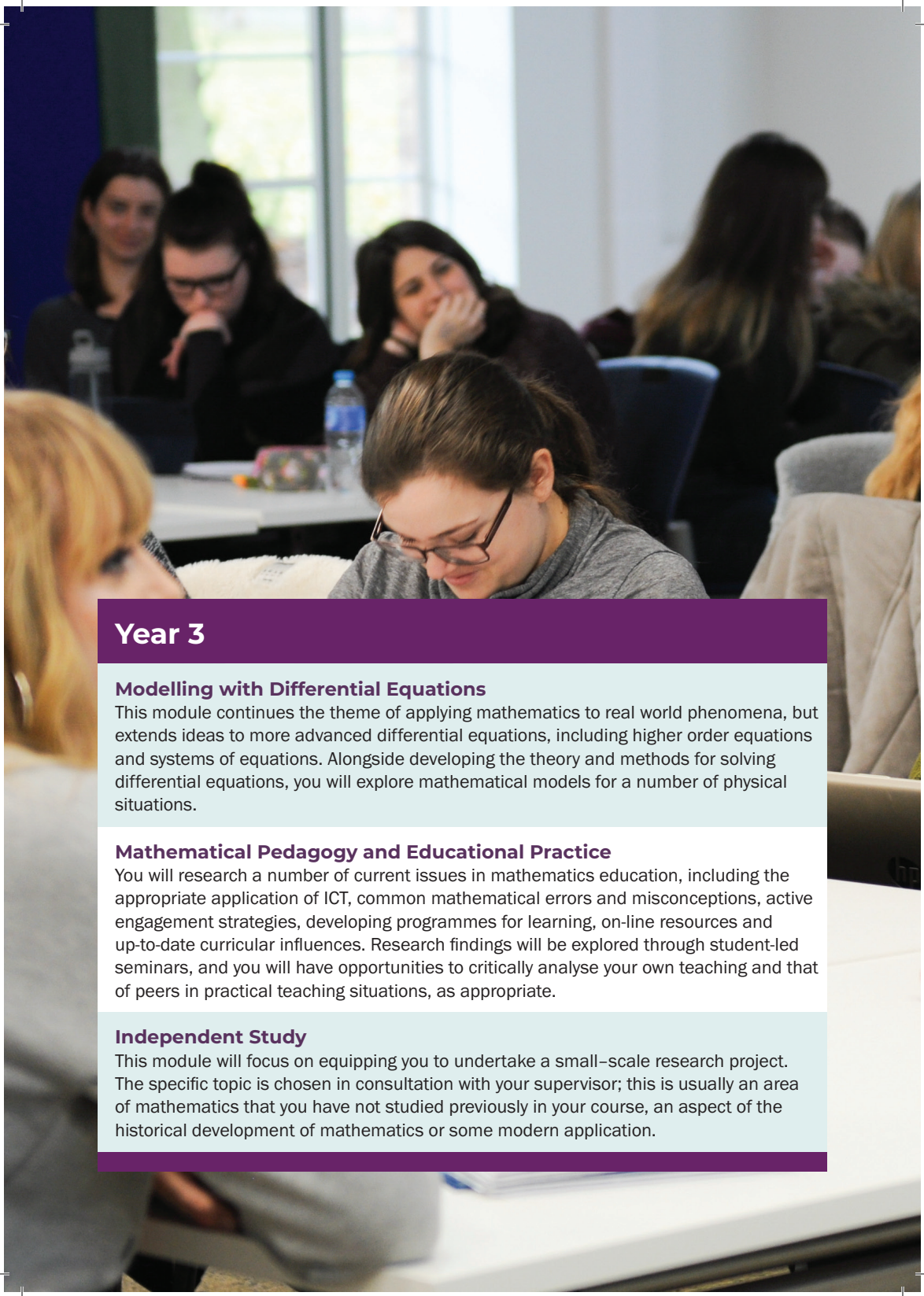
This module seeks to extend your knowledge and understanding of differential calculus into two and three-dimensional space. The basic notions of rate-of-change, derivative and integral are revisited algebraically from first principles. Various key results are then extended to apply in two and three dimensions to provide you with a visual awareness of how these concepts apply to the physical world.

Measuring and Interpreting the World

Core lectures and the seminar/workshop sessions will examine different aspects of quantitative enquiry, including, for example: the meaning of statistical data, raw data extraction and manipulation, correlation and deviation, inference and interpretation and graphic representation. You will consider the design, relevance, application and value of particular quantitative and statistical methods in relation to applied, global issue study contexts.

Modelling and Methods

General concepts and techniques of mathematical modelling are introduced. These enable you to construct appropriate empirical models and to make predictions about real world phenomena. Fundamental laws of conditional probability are applied to appropriate probabilistic modelling situations, including Bayesian processes and Markov chains.



Year 3

Modelling with Differential Equations

This module continues the theme of applying mathematics to real world phenomena, but extends ideas to more advanced differential equations, including higher order equations and systems of equations. Alongside developing the theory and methods for solving differential equations, you will explore mathematical models for a number of physical situations.

Mathematical Pedagogy and Educational Practice

You will research a number of current issues in mathematics education, including the appropriate application of ICT, common mathematical errors and misconceptions, active engagement strategies, developing programmes for learning, on-line resources and up-to-date curricular influences. Research findings will be explored through student-led seminars, and you will have opportunities to critically analyse your own teaching and that of peers in practical teaching situations, as appropriate.

Independent Study

This module will focus on equipping you to undertake a small–scale research project. The specific topic is chosen in consultation with your supervisor; this is usually an area of mathematics that you have not studied previously in your course, an aspect of the historical development of mathematics or some modern application.

What we offer

Delivery

There is no one-size-fits-all method of teaching at BGU – we shape our methods to suit each subject and each group, combining the best aspects of traditional university teaching with innovative techniques to promote student participation and interactivity.

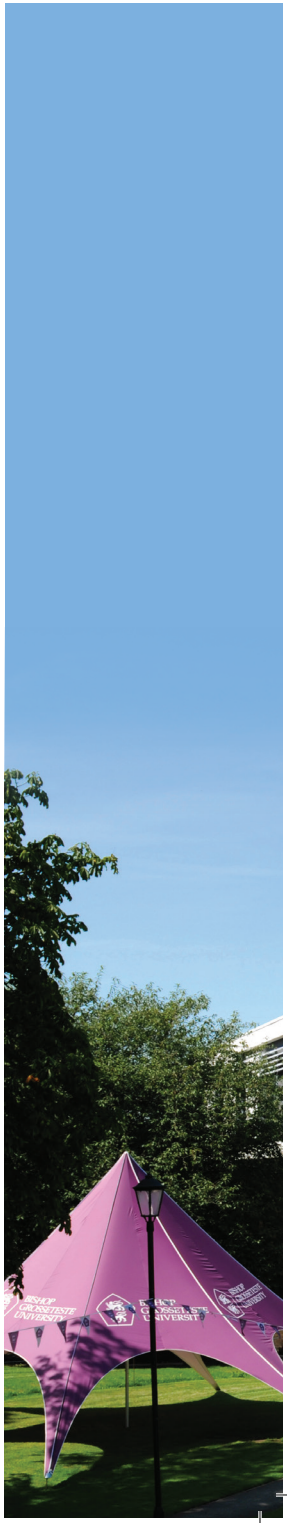
You will be taught in a variety of ways, from lectures, tutorials and seminars, to practical workshops, coursework and work-based placements. Small group seminars and workshops will provide you with an opportunity to review issues raised in lectures, and you will be expected to carry out independent study.

Placements are a key part of degree study at BGU. They provide an enriching learning experience for you to apply the skills and knowledge you will gain from your course and, in doing so, give valuable real-world experience to boost your career.

Assessment

We recognise that individuals come from a wide range of backgrounds and experiences, so we use a variety of assessment strategies on our courses.

Assessment in Mathematics comes in a variety of forms depending on the nature of the particular module. This will enable you to build on your experience of assessment at school or college and develop further strengths in analysing and communicating mathematical arguments. Theoretical aspects are usually assessed by coursework or examination, while the more practical modules are assessed by portfolio or presentation. Taught sessions mainly involve interactive-style seminars and workshops, during which you will often work with other students. This style of working offers informal assessment opportunities and will enable you to gauge your own progress and access help if required.



Support
Studying at BGU is a student centred experience. Staff and students work together in a friendly and supportive atmosphere as part of an intimate campus community. You will know every member of staff personally and feel confident approaching them for help and advice, and staff members will recognise you, not just by sight, but as an individual with unique talents and interests. We will be there to support you, personally and academically, from induction to graduation.

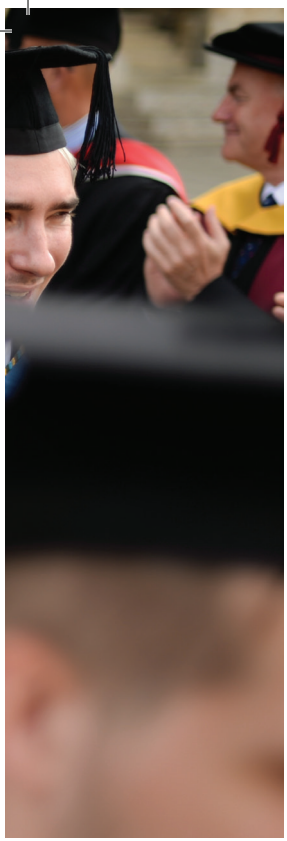
“I felt the university had a calming feeling, it almost felt like home which I loved and knew I would settle right in.”

Cameron
Primary Education with QTS

Your future

Our students have excellent rates of employability when they graduate from BGU, which is great news for you as it means that you can study for a degree knowing that your future is in safe hands. Our employability rates are extremely important to us here at BGU, which is why we offer placement opportunities as an integral part of our courses.

Graduates of this course are highly marketable individuals; mathematicians are in high demand! Most of our students apply to join our primary or secondary PGCE courses here at BGU, however, you could choose another career pathway such Business and Finance, Science and Engineering, Research and Educational Management. Possible future careers for Mathematics graduates may include Engineering, Statistics, Lecturing or Research and development.



Take a look at what qualities and skills you'll develop as a BGU student **bishopg.ac.uk/graduate-attributes**

I want to go into teaching when I graduate. I'm not sure what level yet but I guess ideally I'd be a maths teacher at secondary school. I'm looking forward to doing a placement at a secondary school to see how that goes and help me make my decision."

James
Education Studies and Mathematics

Why BGU?

Here at BGU we've been providing first-class education to students for over 150 years. We're based in the heart of historic Lincoln, a beautiful and extremely student-friendly city.

Navigating around Lincoln on foot is simple, from the cobbled streets uphill to the modern city centre and waterfront downhill.

We're located uphill on an attractive, leafy campus just a few minutes' walk from Lincoln's medieval Cathedral, Castle and Bailgate area.

With plenty of live entertainment, cultural attractions and nightlife hotspots, there's plenty to keep you entertained, uphill and downhill.

Visit **bishopg.ac.uk/lincoln** to find out what's on offer in Lincoln.

BGU was always my first choice when considering universities Everything about it is beautiful, from the leafy green trees to red brick buildings – and everything on the inside is just amazing."

Sian
English Literature

As a single-site campus, just about everything you need is close by, whether it be your tutors, your friends, your lectures or the places in which you like to relax.

Our students are some of the happiest in the UK, which is incredibly important to us. We really care about our students and aim to support them all of the way through their studies, from application to graduation.

People often say that there's something special about BGU, that the people really care. There's a warm and friendly feel to life here, and we do everything possible to look after our students however we can.

Studying as part of a close-knit community, you'll get to know staff personally and feel confident in being able to approach them for help and

Explore what we have to offer on our campus at **bishopg.ac.uk/campus**

“I came here on an Open Day and really loved it. My first impression at the Open Day was that I really liked it because it was smaller – you go to some universities and they are really massive, scary big city campuses, but here I felt really comfortable.”

Hayley
Education Studies

advice. Staff will recognise you - not just by sight but as an individual with unique talents, interests and needs. We’ll be there to support you, academically and personally, from the day you start until long after you leave.

Life after BGU is extremely important and we offer many different methods of support for your future career. This, alongside our talented graduates, is one of the reasons that we consistently achieve impressive employability figures.

This is great news for you as you’ll be able to study at BGU knowing that your education is in safe hands!

There’s no better way to really get a feel for what BGU has to offer than by coming to visit us. To book your place now visit **bishopg.ac.uk/opendays**

The family feel is exactly why people should study at BGU. BGU becomes your home regardless of your age or background. In fact, I felt such a connection with the University on my first visit that I went to five Open Days before I started my BA. I wanted to be part of BGU straight away and I know it will stay with me forever."

Kate
Drama in the Community
& MA in Education

What happens next?

Open Days
So you've found a course you're interested in - what next? We feel very strongly that coming along to visit us on an Open Day is the very best way to find out everything about BGU.

A BGU Open Day is designed with you in mind, to give you a taste of what it's like to live, study and work here. We try to make everything as easy as possible for you, so you can relax and enjoy the day. You'll have the chance to explore the campus and surrounding area, speak to members of academic staff about the courses you're interested in, look around our accommodation, and get any questions you may have answered.

Book your place on our next Open Day now - visit **www.bishopg.ac.uk/opendays**
If you think you'd like to apply, need more information or just want to speak to somebody about your options, contact our Enquiries team by calling **01522 583658** or emailing **enquiries@bishopg.ac.uk**

Ready to apply? Brilliant. We can't wait to receive your application! For the majority of our courses you will apply through UCAS – visit **www.bishopg.ac.uk** for all the information you will need. And don't worry – if you need help with anything, from UCAS scores to personal statements, we're here to help. Our dedicated team are ready to answer your queries and questions.

The contents of this booklet are correct at the time of going to print (January 2020).
For full and up-to-date information on all of our courses, visit **bishopg.ac.uk**

Where are we?

Airports close to BGU

- Humberside
- Doncaster
- Nottingham East Midlands

Where	Road	Rail
Sheffield	55 miles	1hr 20m
Nottingham	39 miles	55m
Leeds	77 miles	2hrs
York	69 miles	1hr 45m
London	144 miles	2hrs

BISHOP GROSSETESTE UNIVERSITY
LONGDALES ROAD
LINCOLN
UNITED KINGDOM
LN1 3DY
www.bishopg.ac.uk
Telephone **(01522) 583658**
enquiries@bishopg.ac.uk

“I’d say the best thing about BGU for me is the course. I was never good at exams and I hated school all the way through, but now I’ve come to university I’ve been much happier and I’ve done better than I ever thought possible.”

Georgina
Theology

@BGULincoln