



THE UNIVERSITY
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Postgraduate Virtual **Open Days**

Introduction to the
Operational Research
MSc programmes



Dr Akshay Gupte

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Welcome to Edinburgh

- Historic and cultured city of breath-taking beauty and world-class attractions
- Population of 500,000, around one tenth are students
- Year-round destination and festival city
- UNESCO World Heritage Site



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School of Mathematics

- We are located in the James Clerk Maxwell Building at the King's Buildings campus in south Edinburgh.
- This is about 2.5km from main campus.
- About 35 min walk, 20 min bus, 10 min cycle.

- Around 140 academic research and teaching staff and over 150 PhD students.
- Around 1000 undergraduate students.
- Around 250 MSc students each year, of which around 70 study on an OR MSc programme.



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OR MSc: Student cohort

- Super cosmopolitan cohort
- This year our students are from:
 - Azerbaijan
 - Canada
 - China
 - France
 - Greece
 - India
 - Indonesia
 - Iran
 - Ireland
 - Kenya
 - Madagascar
 - Philippines
 - Singapore
 - Slovakia
 - South Korea
 - Sudan
 - Tanzania
 - Turkey
 - United Kingdom
 - United States of America



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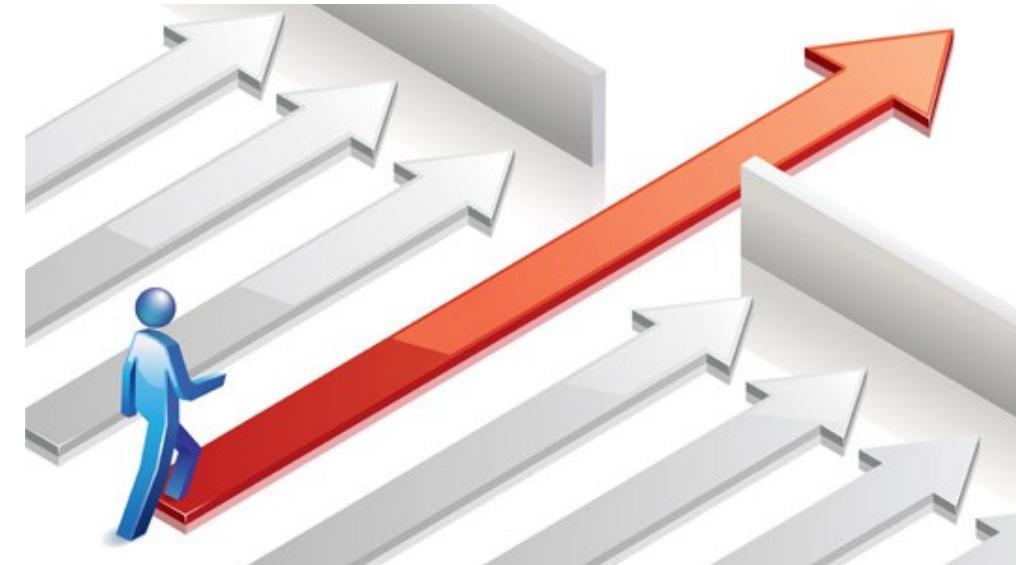
The Operational Research MSc programmes

- Operational Research (OR)
- OR with Risk
- OR with Data Science
- OR with Computational Optimization

What else is OR?

OR is also known as Operations Research

- OR contains Management Science, Decisions Sciences, Operations Management, Business Analytics



Programme structure

- Semester 1
 - Compulsory technical courses in OR, Optimization and modelling
 - Optional courses in computing and statistics (OR/ORwR/ORwCO)
 - Optional courses in computing and informatics/statistics/ML (ORwDS)
- Semester 2
 - Theme-specific optional courses
 - Significant overlap in theme requirements
 - OR/ORwR/ORwCO students can take an ML course
 - ORwDS students can take more informatics courses
- Dissertation
 - External or academic
 - Varied external projects: industry/government

Handwritten mathematical notes on a blackboard:

- $\text{QO} \sqrt{a^2 + b^2} = x^2 + y^2$
- $= ab + 4c$
- $c(x, y)$
- $A^2 T^3, \frac{24 + x}{y} + \frac{a^2 + b^2}{c}$
- $x = 925 + 1$
- $\text{men} = 384. + n \cdot 0.5$
- $x = 9.25$
- $\sum N_{30} \cdot x - \frac{1}{2}$
- $x = 2.5$
- $010112 \quad r=4$
- 010002
- 11002
- $\beta =$



Sample optional courses

- Biostatistics
- Credit Scoring
- Generalised Regression Models
- Machine Learning in Python
- Optimization Methods in Finance
- Statistical Methodology
- Statistical Programming
- Topics in Applied Operational Research



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Sample timetable (Semester 1)

	09:00-10:00	10:00-11:00	11:00-12:00	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00	16:00-17:00	17:00-18:00
Monday		Methodology, Modelling and Consulting Skills lecture				Fundamentals of Operational Research lecture			Statistical Programming lecture
Tuesday	Statistical Programming workshop	Statistical Methodology lecture			Fundamentals of Operational Research workshop (every 2 nd week)				
Wednesday			Stochastic Modelling lecture			Fundamentals of Optimization workshop (every 2 nd week)			Statistical Programming workshop
Thursday			Fundamentals of Optimization lecture			Statistical Programming lecture	Methodology, Modelling and Consulting Skills lecture		
Friday		Statistical Methodology lecture	Stochastic Modelling workshop (every 2 nd week)		Statistical Methodology workshop (every 2 nd week)	Methodology, Modelling and Consulting Skills workshop			

Employability

- The skill set of an OR MSc graduate is very attractive to employers
 - Some are looking for OR skills specifically
 - Others recognise OR skills as valuable for non-OR positions
- There is a shortage of people with OR skills in the UK
- Contacts
 - Presentations/workshops by OR employers
 - Many staff have industrial contacts
 - Dissertation projects can lead to job offers
 - Former OR students are everywhere!



PhD opportunities

- About 15% of our graduates go on to PhD studies
- Half the Optimization and OR PhD Students are OR MSc graduates



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Support during your studies

- Student support
 - Student Advisers
 - Academic Cohort Leads
 - Advice on study technique
 - Employability/careers guidance
 - General pastoral support
- MSc community
 - MScHub dedicated study space
 - MScBase study support from tutors
 - MathSoc



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How to Apply

- Apply using the [University's Degree Finder](#)
- No application fee
- You will need to provide: personal statement, details of relevant knowledge/training skills, degree certificates and academic transcripts, evidence you meet English language requirements, one reference
- If documents are not in English, certified translations must be provided

Round	Application deadline	Decisions made or applications rolled to the next deadline
1	15 December	1 March
2	31 March	31 May
3	31 May	31 July



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Scholarship opportunities

- [School of Mathematics Masters Scholarships](#) – 25% or 50% tuition fee discount
 - Various countries eligible
- [British Council GREAT Scholarships](#) - £10,000
 - Ghana, Mexico, Thailand
- [European Merit Scholarship](#) - £10,000
 - France, Germany, Spain
- [India Merit Scholarship](#) - £5,000



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Now over to our
alumni...

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Sara Brdnik

- From: Slovenia
- Programme: MSc Operational Research with Data Science
- Year of graduation: 2024
- Current Role: Process Engineer at Procter & Gamble



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Sara Brdnik PE, BMI 2.0



At University:
Operational Research
Intro to R/Python/Machine Learning
Game theory
Risk and Logistics
Simulation



Career

2018: UoF (MA Economics)
- Competitive debate (coach Morocco, HK, Cornell Uni)
- 180 Degrees Consulting (for social enterprise/charity)
2020: Intern @ MathSpire (Ed-Tech at Cambridge Uni)
2023: Operations Manager @ SCG Consulting (Telecom)
2023: UoF (MSc Operational Research with Data Science)
Master's thesis @ Edinburgh Airport (Queue Optimization)





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Q&A

Type your questions into the chat area

Next steps...

- Programme-specific info: <https://postgraduate.degrees.ed.ac.uk/>
- Chat to our Students: <https://edin.ac/student-chat-pg>
- Any other questions (including, Fees & Admissions) email:
futurestudents@ed.ac.uk



Read our students' blogs at
blogs.ed.ac.uk/studentstories



Contact details for follow-up questions

- We apologise if we did not get through all of your questions in the time allotted for this session. If you have further questions that have not been answered, please email: futurestudents@ed.ac.uk



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Thank you

Further questions?

futurestudents@ed.ac.uk

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