Jesus College, Oxford

Subject Notes:
MATHEMATICS AND STATISTICS

Academic Staff

The teaching provision at Jesus College is generous in relation to the number of Mathematics students. The college has tutors in all the main branches of Mathematics, who are committed to mathematical research as well as to teaching, and who together cover a wide range of subjects:

Fellows

Professor Andrew Dancer’s research is in differential geometry, especially the study of Einstein spaces. He is responsible for the teaching of pure mathematics including algebra, analysis, geometry and topology.

Dr James Oliver’s research is predominantly in fluid dynamics and its applications to free and moving boundary problems in industry, engineering and biology. He teaches Physical Applied Mathematics.

Professor Robin Evans teaches probability and statistics for the College. His research interests include statistical causality, graphical models and algebraic statistics.

About the Course

The Oxford Mathematics courses have for many years included options in Statistics. In response to strong demand for statistical knowledge, there is now a joint degree course in the two disciplines. Statistics is a subject that studies numbers which are in some sense descriptive. As an academic study, it concerns the underlying, largely mathematical, theory relating the characteristics of a population to the statistics drawn from a sample of its members. Statistics, like Mathematics, is an intellectual discipline in its own right, and also an essential tool in many other fields of study.

The course has essentially the same structure as the Mathematics course (see the Mathematics subject notes for details), but makes available more statistically related topics.

The ‘Studying Mathematics at Oxford’ brochure contains information about the course content and can be found at: https://www.maths.ox.ac.uk/system/files/attachments/introbook17.pdf

For the first four terms the two courses are identical, up to and including the compulsory core of the second year of the Mathematics course. Mathematics and Statistics students follow core second-year courses in probability and statistics, and the remainder of the second year allows for some choice of topics in preparation for the greater selectivity of the third and fourth years. All third and fourth year topics available in the Mathematics course are also available to Mathematics and Statistics students, and the fourth year, which provides an opportunity for more in-depth study, includes a substantial statistics project. You can wait until your third year before deciding whether to complete a BA that year or proceed to the MMath in a fourth year.

Admissions

We strongly recommend that candidates study Mathematics and Further Mathematics to A2 level if it is possible for them to do so. We will accept a candidate taking only one Mathematics full A2 level if we think that he or she is a good enough mathematician to cope satisfactorily with the heavy workload in the first year; such a candidate would need to do quite a bit of extra reading before coming up to Oxford in order to be prepared for the course. We have no preference as regards other subjects taken
with Mathematics and Further Mathematics. Sciences are the most common, and a Physics A2/AS level might provide some helpful background; but it is by no means essential to have a science A2 or AS level. Candidates for the degree of Mathematics and Statistics must be of the same standard in Mathematics as those admitted to read single subject Mathematics. No formal qualifications such as GCSE or A-level Statistics are required.

Candidates are selected on the basis of academic record (e.g. GCSEs) and potential, as shown by their UCAS reference, submitted written work, performance in the written test, and in interviews if shortlisted.

**Written tests:** All candidates must take the Mathematics Admissions Test (MAT) at school on Thursday 2 November 2017. This will take place in schools or at approved test centres for non-UK candidates. The registration for the MAT is through the Admissions Testing Service and the deadline for this is 15 October 2017.

More information about how to register for the MAT can be found at: [www.matoxford.org.uk](http://www.matoxford.org.uk)

If you are interviewed at Jesus you can expect two or three separate interviews with different tutors. The interviews will involve some general questions, but most of the time will be spent discussing mathematical topics.

In a total College entry of about 100 undergraduates, 8 are offered places in a typical year to read Mathematics and the related Joint Schools courses. The standard offers for students taking three (or more) A2 levels are:

- OR A*A*A including A* in A2 Mathematics **PLUS** A in AS Further Mathematics
- OR A*A*A including A* in A2 Mathematics (if Further Mathematics is not taken)

We are also able to make conditional offers on the basis of results from a combination of A2 and AS levels, Scottish Highers or the International Baccalaureate. We do not use examination results as a 'weeding-out' process; if we make you a conditional offer, it is because we are confident that you are able to attain the standard required.

**Deferred Entry:** Applications for deferred entry to Jesus College are possible, but generally not encouraged unless it is planned to spend at least part of the year out doing something with a high level of mathematical content. You must apply for deferred entry at the time of application to Oxford: you cannot change your mind after an offer has been made. Please refer to departmental web sites for subject-specific advice. You should be aware that applicants who are offered places for deferred entry will generally be among the strongest of the cohort for their subject. We would not usually offer more than one or two deferred places per subject in order not to disadvantage the following year’s candidates. In some cases, an applicant for deferred entry may be offered a place for non-deferred entry instead. If you require any further advice, please contact: admissions.officer@jesus.ox.ac.uk.

**Postgraduate Studies and Careers**

The Mathematical Institute at Oxford enjoys a high reputation, both nationally and internationally, for the excellence of its teaching and research, and is among the largest in the country. Mathematical research at Oxford covers a very wide range in both pure and applied mathematics. It attracts generous research funding and draws students and visiting faculty from all parts of the world. The following postgraduate degrees are offered:

- DPhil or MSc by Research in Maths
- MSc Mathematics and the Foundations of Computer Science
The Department of Statistics has teaching and research strengths in a wide range of modern and exciting areas of statistical science. The following postgraduate degrees are offered:

- DPhil or MSc by Research in Statistics
- MSc Applied Statistics
- Diploma Applied Statistics

The Mathematics and Statistics joint degree provides excellent training for a wide variety of careers in which advanced statistical techniques are applied, for example in financial analysis, the epidemiology of infectious diseases, genetics, and business analytics. The growth of 'big data' in internet based businesses has led to a proliferation of exciting career paths in data science.

Maths graduates are a large source of recruitment for careers in statistics and the closely related field of operational research, and are also much in demand in the insurance and financial services professions, especially those whose studies have included a substantial component of statistics and applied probability. For example, recent statistics show that 15% of Oxford Mathematics graduates join the finance sector.

**Preliminary Reading and Further Information**

Further information about Mathematics & Statistics at Oxford can be found on the department websites:

- [www.maths.ox.ac.uk](http://www.maths.ox.ac.uk)
- [www.stats.ox.ac.uk](http://www.stats.ox.ac.uk)

Information about Admissions is available at: [http://www.ox.ac.uk/admissions/undergraduate/courses-listing/mathematics-and-statistics](http://www.ox.ac.uk/admissions/undergraduate/courses-listing/mathematics-and-statistics)

**Contact details**

If you have any questions about our entrance requirements, or about applying to study at Jesus College, please contact the Admissions Officer:

Tel: 01865 279721  
Email: admissions.officer@jesus.ox.ac.uk  
Web: [www.jesus.ox.ac.uk/study-here](http://www.jesus.ox.ac.uk/study-here)

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