

# Jesus College, Oxford

## Subject Notes COMPUTER SCIENCE



### **Academic Staff**

#### *Tutorial Fellows*

**Professor Standa Živný** is a Fellow and an Associate Professor of Theoretical Computer Science. His research is in algorithms and complexity theory. He teaches theoretical computer science courses.

#### *Non-Tutorial Fellows*

**Dr Oiwi Parker Jones** is a Hugh Prize Fellow and a Postdoctoral Researcher.

**Professor Sir Nigel Shadbolt** is Principal of Jesus College and a Professorial Research Fellow.

**Professor Sam Staton** is a Hugh Prize Fellow and an Associate Professor.

#### *Lecturers*

**Mr Swaraj Dash** is a doctoral student in the Department of Computer Science.

**Mr Matthew Katzman** is a doctoral student in the Department of Computer Science.

**Dr Reino Niskanen** is a research associate in the Department of Computer Science.

### **About the Course**

#### *About the Undergraduate Course*

Computer Science is about understanding computer systems and networks at a deep level. Computers and the programs they run are among the most complex products ever created; designing and using them effectively presents immense challenges. Facing these challenges is the aim of Computer Science as a practical discipline, and this leads to some fundamental questions:

- How can we capture in a precise way what we want a computer system to do?
- Can we mathematically prove that a computer system does what we want it to?
- How can computers help us to model and investigate complex systems like the Earth's climate, financial systems or our own bodies?
- What are the limits to computing? Will quantum computers extend those limits?

The theories that are now emerging to answer these kinds of questions can be immediately applied to design new computers, programs, networks and systems that are transforming science, business, culture and all other aspects of life.

Computer Science can be studied for three years (BA) or four years (Master of Computer Science). The fourth year allows the study of advanced topics and an in-depth research project. Everyone applies for the four-year course. Exit points are not decided until the third year.

The course concentrates on creating links between theory and practice. It covers a wide variety of software and hardware technologies and their applications. We are looking for students with a real flair for mathematics, which you will develop into skills that can be used both for reasoning rigorously about the behaviour of programs and computer systems, and for applications such as scientific computing. You will also gain practical problem-solving and program design skills; the majority of subjects within the course are linked with practical work in our well-equipped laboratory.

Teaching in Computer Science, as in most other subjects, has two main components: University lectures and classes, and college tutorials. The lectures and classes are provided and held in the Department of Computer Science. The tutorials are held in college and cover all first-year courses and roughly half of the second-year courses. More details on the structure of the degree can be found here:

<http://www.cs.ox.ac.uk/admissions/undergraduate/courses/index.html>

### *Computer Science at Jesus College*

The teaching provision at Jesus College is generous in relation to the number of Computer Science students. While many Oxford colleges have only one tutor in Computer Science, Jesus College has several tutors, who are committed to research in computer science as well as to teaching, and who together will cover a wide range of subjects. There is a vibrant community of Fellows in Computer Science at Jesus, which includes, in addition to the two tutors, Professor Sir Nigel Shadbolt (Principal and Professorial Research Fellow), Professor Sam Staton (Hugh Prize Fellow and Associate Professor), and Dr Oiwi Parker Jones (Hugh Prize Fellow and Postdoctoral Researcher).

### *Joint Schools*

The following undergraduate courses are available at Jesus College:

- Computer Science and Philosophy
- Mathematics and Computer Science

## **Admissions**

In a total College entry of about 100 undergraduates, 2 places are offered in a typical year to read Computer Science, 2 places are offered to read Computer Science and Philosophy, and 2 places are offered to read Mathematics and Computer Science.

**Academic requirements:** Offers made to candidates will be conditional upon A-level results (normally A\*AA, including at least an A in Mathematics, with the A\* in Mathematics, Further Mathematics or Computing/Computer Science. Those taking Further Mathematics A-level or AS-level are expected to achieve at least Grade A). We expect you to have taken and passed any practical component in your chosen science subjects.

**Written test:** All candidates must take the **Mathematics Admissions Test (MAT)** in school on **4 November 2020**. The MAT is administered by the Admissions Testing Service, and the registration deadline is **15 October 2020**. Further details about the MAT can be found here: <https://www.ox.ac.uk/admissions/undergraduate/applying-to-oxford/tests/mat>

**Written work:** No submitted written work is required for this course.

**Interviews:** Interviews are held in mid-December. If you are interviewed at Jesus you can typically expect two separate interviews with different tutors. The interviews will involve some general questions, but most of the time will be spent discussing logical and mathematical topics.

**Deferred Entry:** Applications for deferred entry to Jesus College are accepted. 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 deferred place 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 the Admissions Officer via [admissions.officer@jesus.ox.ac.uk](mailto:admissions.officer@jesus.ox.ac.uk)

## **Postgraduate Studies and Careers**

The Department of Computer Science 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.

Research at Oxford covers a very wide range in both theoretical and applied Computer Science. It attracts generous research funding and draws students and visiting faculty from all parts of the world.

The following degrees are available at postgraduate level:

- DPhil in Computer Science
- MSc in Computer Science
- MSc in Mathematics and Foundations of Computer Science
- MSc Software and Systems Security
- MSc Software Engineering

Common roles for graduates include computer programmer, software designer and engineer, financial analyst and scientific researcher.

## **Further Information**

Further information about Computer Science at Oxford can be found on the Department website: <http://www.cs.ox.ac.uk/admissions/undergraduate/index.html>

Information about Admissions is available at: <https://www.ox.ac.uk/admissions/undergraduate/courses-listing/computer-science?wssl=1>

## **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](mailto: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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