

ST EDMUND HALL

COMPUTER SCIENCE

Dear Incoming Student,

Congratulations on achieving a place at St Edmund Hall to study Computer Science or Mathematics & Computer Science. The aim of this letter is to welcome you, to give you some idea of what to expect when you arrive, and to give some pointers to what you can do between now and the start of the course to prepare for studying at St Edmund Hall. *Note for Maths & Computer Science: this letter contains similar information to the letter from Mathematics but please look out for CS specific information.*

Useful information is available from the Computer Science Department website http://www.cs.ox.ac.uk , with a good starting point being the course information for Prelims (first year) students at http://www.cs.ox.ac.uk/teaching/bacompsci/PreliminaryExaminations/ or http://www.cs.ox.ac.uk/teaching/mcs/PreliminaryExaminations/.
You may also find the page on bridging the gap between school and university mathematics http://www.maths.ox.ac.uk/study-here/undergraduate-study/bridging-gap helpful.

The key components of the computer science course are lectures (as at every university) and tutorials; it is tutorials that make studying at Oxford special. In the lectures you will be told most of what you need to know. But, at the high pace of Oxford lectures, you will not understand everything the first time. Also, we are not just trying to teach you facts, but how to *do* computer science and mathematics. And as with anything, to learn computer science you must hear/read about how to do it, then actually try doing it yourself, and then get feedback from an expert about what you are doing right/wrong. The feedback part comes in tutorials: meetings with usually two, but sometimes 1 or 3 students and a tutor.

In lectures, you will be given problem sheets to do for the tutorials. In St Edmund Hall we always ask you to attempt these before the tutorial, and hand the work in. This is so that the tutor can look through what you have done, to see what you already understand and what you do not, and so use the time in tutorials effectively.

There is nothing particular you need to do to prepare for the tutorial system: just arrive with the right expectations! It is a system almost unique to Oxford, and many good students would have loved to have your place here, so we expect you to take full advantage of it. That means really trying your best on the work set in advance. At the same time, you should remember that the work is not marked, and there is no need to try to impress the tutor. In order to help you we need to see what you can do and what you don't

understand. So, a good general rule is to try your best on every question, and if you can get nowhere, to at least write down something (for example, what you attempted before getting stuck).

A lengthy but very useful account of the teaching system in Oxford is available at http://www.maths.ox.ac.uk/system/files/attachments/study_public_0.pdf .

The first term

The content of the courses is outlined in the Prelims synopses at http://www.cs.ox.ac.uk/teaching/bacompsci/PreliminaryExaminations/ or http://www.cs.ox.ac.uk/teaching/mcs/PreliminaryExaminations/.
During the first term there will be lectures in Computer Science on Functional Programming, Discrete Mathematics and Linear Algebra; and in Mathematics: Introduction to University Mathematics, Linear Algebra I, Analysis I: Sequences and Series, and Probability. You will have an average of around 10 lectures and 2.5 hours of tutorials each week; roughly speaking for each course either a 1 hour tutorial each fortnight, or 1/2 an hour each week. In the first term you will be taught computer science options by me (Joe Pitt-Francis) and Dr Yicheng Gao. Meanwhile the maths options are taught by college fellows in mathematics: Prof. Oliver Riordan, Prof. Luc Nguyen and/or Dr Tom Crawford.

Students' experience of the first term varies, but almost everyone finds some or all of the material difficult. There is a wide variation in what you have covered at school, so for some of you much of the material will be entirely new and the pace will be very fast. If you find this, don't worry! We have offered you a place because we think you can cope with the course; if you covered a bit less at school then it will be difficult at first, but not impossible. Also, the material quickly moves beyond what anyone has covered at school, so after a little while all students are in the same boat. (For those of you who were particularly well prepared at school—if the very start of the course seems easy, don't relax! It will soon be hard enough.)

Before you arrive

No preliminary reading is required but the Computer Science department has prepared some suggested reading: http://www.cs.ox.ac.uk/admissions/undergraduate/why_oxford/background_reading.html. This list is quite wide-ranging, and is there to give you some general ideas of interesting things to look at.

It is a very good idea to begin reading in advance on areas that are largely new to you. The core first-year course most likely to fall in this category is *Functional Programming.* A suggested book for this is: *Programming in Haskell*, by Graham Hutton, Cambridge University Press, 2007. But an alternative that you can read online for free is http://learnyouahaskell.com/. This is an excellent resource that is especially approachable by beginners. There are more Haskell resources on the website http://haskell.org/.

When you are here

The College Library should have copies of the essential books for the main courses. Note that the library's Computer Science collection is being refreshed so, if you think there is a need for more copies of particular books, please *tell me and the librarian*. There is also a college grant available to every student each year for academic purposes (a total of up to £300 per year of which up to £100 may be spent on books).

Finally, although the course is difficult, a very high fraction of the students we select do succeed, so please be reassured that you will be able to cope. Once here, you will be put in touch with students who started a year ago—they will be a good source of advice in addition to your tutors.

Best wishes,

Joe Pitt-Francis
Computer Science Tutor, St Edmund Hall