



August 2025

Dear Chemist

Many congratulations on gaining an undergraduate place at Somerville College and we look forward to seeing you here in October. We are sending you some information and a small amount of work to do before you arrive.

You will be following a first year course in which you will do three Chemistry papers and a Maths paper. Some biology and physics are also included in the syllabus. Chemists take papers in Inorganic Chemistry, Organic Chemistry (with some biology questions included), Physical Chemistry (with some physics included) and Mathematics. You are likely to find your A-level (or equivalent) notes (and text books if you have them) in all subjects useful here, particularly at the beginning of the course, so do remember to bring them with you.

CHEMISTRY: You should prepare for the course by working through the animated “Pre-University Chemistry Course” available at:

<https://vrchemistry.chem.ox.ac.uk/foundation.html>

One of the major topics covered in the 1st year will be the molecular orbital view of bonding, which is simplified in the hybrid orbital view of bonding used by organic chemists. If you have not met hybridization and hybrid orbitals before then make sure you are familiar with this concept before you arrive in October. In order to get to grips with organic reactions mechanisms (curly arrows), you should work through the attached document “How to use curly arrows” many times. Additionally, please read through the attached “Physical Chemistry Introductory Work” that deals with units, errors, etc. This will be very important for all aspects of chemistry but particularly for physical chemistry.

PHYSICS: While a significant number of the undergraduates reading chemistry have not done Physics A-level, some post GCSE physics is part of the background to physical chemistry and it may be assumed in the lectures. A-level physics (or equivalent) will, naturally, be helpful for the physics element of the course. The physics lectures will not assume you have taken the subject beyond GCSE level, but some topics will be dealt with quite fast and you will be grateful in your first term if you have already made yourself familiar with some of the ideas you need. If your maths included mechanics, you will find that revising it will help with the physics. If you have a book you like, you will find it useful here. **If you have not done A-level Physics, this is the most useful reading you can do** before you arrive.

BIOLOGY: Although some chemists have done Biology A level (or equivalent), this is not assumed in the lecture course. If you have not done any biology after GCSE and are keen to see what the course may involve, then read the biochemistry section of an A level biology text book. The main problem is not knowing what the new words and terms mean.

When you come to Oxford we will give you a book list but we do not suggest that you buy any books before you arrive. The most useful reading you can do before you come up is to consolidate your A-level by reading the parts of an A level textbook which were not covered in your syllabus. You will probably prefer to use the book you used at school, but any A-level book would be suitable. There



are various topics covered in some but not all A-level boards and you will find it useful to have read the parts of the text which are less familiar to you. Most public libraries have suitable A-level books.

We look forward to seeing you in October.

All the best.

Jonathan Burton

Michael Hayward

Dean Sheppard