



July 2018

Reading List and Mathematics Exercise: Materials Science

For the first year of the Materials Science degree course you will study for four papers. Three of these will be in Materials Science and one will be on Mathematics. Mathematics forms an important toolbox for Science, and this is particularly true for Materials, and therefore the Mathematics course forms an important part of the first year to ensure that you acquire the skills to cope with the rest of the course.

People arrive at the start of the course with differing levels of experience in Mathematics, for example some have Further Maths to A2 level, whereas some do not. We find that the statistics show that Maths experience prior to coming up to Oxford does not greatly influence final degree results. However, it is useful for us to know what skills people have before the start of the first year. Enclosed is a set of mathematics questions that you should work on before you come up to Oxford.

NOTE that you are not necessarily expected to be able to answer all the questions, especially if you have not done Further Maths at A-level.

If you cannot answer a question simply go on to the next. You should attempt these questions about 3-4 weeks before you arrive in Oxford. Try not to spend more than a day on the problems - you might be able to do them all in 3 hours. In addition to enabling us to make an assessment of your maths they should be useful revision for you. When you have completed as much as you can of the problem set please bring the solutions with you when you come to Oxford and leave them in our pigeon-hole at the Porters Lodge as soon as you arrive in Freshers week.

The maths exercise is the most important task for the summer, but before coming up to Oxford you should also reacquaint yourself with your school notes in all your science subjects. There is no mandatory textbook reading, but the following books may help set the context for the course.

“The New Science of Strong Materials or Why You Don’t Fall Through the Floor”, J.E. Gordon, Princeton University Press, Revised Edition (2008) ISBN-13: 978 0691125480

“Stuff Matters: The Strange Stories of the Marvellous Materials that Shape Our Man-made World”, M. Miodownik, Penguin (2014) ISBN-13: 978-0241955185

Further ideas for reading can be found at <http://www.materials.ox.ac.uk/admissions/undergraduate/booklist.html>. We will meet shortly after you arrive in Oxford, and I look forward to getting to know you then. In the meantime if you have any academic-related questions then feel free to email us at peter.nellist@materials.ox.ac.uk or david.armstrong@materials.ox.ac.uk

Enjoy the rest of the summer!

Pete Nellist, David Armstrong, Tutor’s for Materials