

S807 Molecules in Medicine and S827 Concept to clinic

Preparing for S807/S827

Students on the Masters' programme come from a wide variety of backgrounds and may take a range of modules within the programme. S807 and S827 are different from some of the other modules in that it requires rather more specific background knowledge.

What follows is an attempt to give some indication of the level of knowledge required and the basic IT skills that we expect students to have before starting these modules.

Scientific background

You may take these modules if you have an honours degree in science, preferably in the areas of chemistry, biology or medicine. For all students there will always be some areas with which you are familiar and others which require you to do some background reading. For example, a typical chemistry graduate will be familiar with the chemistry concepts but will need to learn many of the medical terms used; a biology graduate will on the other hand, find some of the chemistry unfamiliar, as will a physics graduate.

So long as you are familiar with some basic science there should be no barrier to your enjoyment and achievement. Those whose only science background is in a subject such as psychology or nursing may find that these modules more of a struggle as they contain too much 'hard science' or mathematics for them. In both modules the 'hard science' is taught on a need to know basis, i.e., you need to understand this scientific concept to understand how a drug works or has been developed.

We suggest that all students starting S807 and S827 should be familiar with most of the following list of scientific concepts. This list is not exclusive – it is simply there so that students who are unsure of whether they have the right background can check on their knowledge.

Scientific notation

Do you understand what 5×10^{-4} or 0.05% means?

Physical quantities and the SI system of units

Physical quantities written as a numerical value with the appropriate unit.

Basic units of metre, kilogram and second, litre

Prefixes such as nano (n), micro (μ), milli (m), kilo (k)

Do you recognise the meaning of ml^{-1} , mol/m^3 ?

Is it correct to say $1 \text{ cm} = 10^{-2} \text{ m}$?

Mathematical skills

Can you interpret information from a graph?

Confident with content of the maths skills identified here,

<http://www.open.ac.uk/skillsforstudy/documents/maths-skills.pdf>

Basic knowledge of atomic and molecular structures

What do the atomic and mass numbers of an atom represent?

Do you know how many atoms are in water molecules?

Can you recognize the chemical structure of alcohol (ethanol)?

You may want to test your knowledge for very basic chemistry. Try to answer questions 7 and 8 (Elements and Compounds), 15, 16, 25 and 26 (Chemical Reactions), 32 and 33 (General Chemistry) and all questions in the section of Organic Chemistry in the link below:

<https://students.open.ac.uk/openmark/s205.ayrf/>

You may also find it helpful to look at the material on OpenLearn which covers protein shape and function <http://openlearn.open.ac.uk/mod/oucontent/view.php?id=398488§ion=1.6.1> (which is written at Level 1) or <http://openlearn.open.ac.uk/mod/oucontent/view.php?id=398712§ion=1.4> (written at Level 2).

Information Technology (IT) Skills

This module relies heavily on the use of IT. It is used to deliver core reading materials, communicate with students, for searching for information, and for producing and submitting assignments. Several IT skills are taught within the module, however students should have some basic level of competence before starting. We suggest that you should be able to do most of the following:

Retrieve, open and save files in Microsoft Word and Excel (or their equivalents in StarOffice).

Organise file storage using Windows Explorer.

Transfer files from memory stick to hard drive, email to hard drive etc.

Have a basic competence in Word or other word-processing package; simple formatting (e.g. bold, italic, font size and style, alignment), inserting of page numbers, headers and footers etc.

Be able to insert images into a Word document both from the clipboard or directly from a file saved on the hard drive.

Use a search engine in your browser.

What do to next

If you satisfy the entry requirements for the module and are happy that you understand most of the topics mentioned here, then you should have little problem studying S807 or S827.

If you feel that you need to brush up on a few of these topics, please contact the MSc Office for further advice and some background teaching material.

If you find yourself unfamiliar with most of the above, then we suggest that S807/S827 are probably not appropriate modules for you to do at the moment. You may wish to consider studying S205 *The Molecular World* or SK185 *Molecules and Health*.