Welcome to Science in the College of Science and Engineering at the University of Glasgow

Guide for New Students
Session 2022-23
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1. Welcome from the Chief Adviser of Studies for Science

I am delighted to welcome you as an undergraduate to Science in the University of Glasgow and hope you will find your time with us rewarding, productive and enjoyable. We are justly proud of our excellent record in both teaching and research across all science disciplines.

The range of degree programmes open to you is wide in terms of the subjects you can study, and varied in respect of the awards to which they can lead - BSc (Bachelor of Science), BSc Honours or MSci (Master in Science) degrees.

This introductory guide explains these different degree options, advises you on how to plan your first year (level 1) curriculum, and explains the College progression rules to advance through your studies.

An advantage of our entry system is that it gives remarkable flexibility in your degree programme, and you will be contacted over the summer to arrange a meeting with an experienced Senior Adviser of Studies who will discuss the best combination of courses for you, based on your qualifications, your interests and your career aims.

The ideal combination of level 1 subjects will allow you to keep a range of possible degree options open until the end of level 2 (second year) – by which stage you will be much better prepared to make informed decisions about your degree and your career intentions.

So it is particularly important that you discuss your subject choices in advance with an experienced Senior Adviser of Studies, although you are encouraged to browse the options available to you, and enrol provisionally, using ‘My Requirements’ in ‘MyCampus’ (our student record system). You will be sent details on how to access this system.

Supporting our students is our primary goal and to achieve this we have a unique advising system. For the duration of your studies you will be assigned a permanent Adviser of Studies, prior to Orientation/Freshers’ Week, who will normally be in the subject area you wish to specialise in. You should arrange your first meeting with your Adviser of Studies before the end of September. This allows us to check that you are settling in well at University, and are happy with the course choices that you have made.

You will have regular meetings with your Adviser of Studies thereafter to chart your progress and to give you any help you may require, not only with your academic studies but also with finding your way around the support services and other aspects of university life. Working alongside your Adviser of Studies is a Senior of Adviser of Studies in each School, and myself as the Chief Adviser Science for the College of Science and Engineering. As a team we have over 180 dedicated Advisers who are here to support our students.

University is not just about academic study, important as that is – you are strongly encouraged to take full advantage of the enormous range of recreational opportunities, and student clubs and societies, which are available to you as a member of the University of Glasgow community. You may, for example, be interested in travelling and broadening your experience, and should therefore consider the opportunities provided by our Study Abroad or International Exchange programmes.

These opportunities, and others, are valuable parts of the university experience. They are not just hugely important for your personal development, but are also highly valued by employers. The University of Glasgow puts considerable effort into developing and documenting these crucial ‘Graduate Attributes’ – you can find out more about these at: http://www.gla.ac.uk/students/attributes/

The important thing to remember is that a degree in science from this University will equip you well for the future whatever you do on completion of your studies.

I hope you enjoy your time at the University of Glasgow, as I am sure you will, and would encourage you to use the advisory service whenever you need it. I look forward to your arrival and wish you every success with your studies.

Good luck!

Dr Peter Sneddon
Chief Adviser of Studies for Science, College of Science and Engineering
2. Session dates for academic session 2022-23

Details of the session dates can be found on the Senate Office website at [http://www.gla.ac.uk/services/senateoffice/sessiondates](http://www.gla.ac.uk/services/senateoffice/sessiondates)

3. Degree structure within science

A full year of study normally consists of courses amounting to 120 credits. In first year, subjects normally consist of

- One 40 credit course running through Semesters 1 and 2
- Two 20 credit courses, one running in each Semester
- Two 20 credit courses, each running through Semesters 1 and 2

In level 1, full-time students must normally enrol for 80 credits of Science courses.

Within Science, we offer the following degrees:

- MSci
- BSc Honours
- BSc in a Designated Subject

The **BSc Honours** degree is a four-year degree. Entry to honours courses comes at the start of third year and admission is dependent on achievement in all courses and particularly the chosen subject area over years one and two. Honours degrees are awarded on the basis of results achieved over the third and fourth years and are classified as first, upper or lower second or third class. Honours degrees can be awarded in a single subject or in an approved combination of two subjects.

The **MSci** degree offers an opportunity for more advanced and intensive study in particular subjects, or approved combinations, over a five-year programme. Some MSci courses involve a year spent on work placement or in a European university working on a research project after the third year. The placement is assessed and contributes to the final award. Entry to an MSci, like entry to BSc Honours, comes at the start of third year and the degree is classified like the BSc Honours degree. Admission is competitive and open only to the most able students.

**Advanced level entry to some degree programmes** is available for highly qualified applicants who meet the Advanced Higher and A level admission grades specified in the prospectus and allow the BSc Honours degree to be completed in 3 years and the MSci in 4 years.

The **BSc Designated** degree requires in-depth study of a subject to third year. A designated degree can be awarded in a single subject or in an approved combination of two subjects. This degree can be awarded with merit or distinction, depending on your grades.

For further information on all of the above please contact science-chief-adviser@glasgow.ac.uk. After you begin your studies you can discuss in detail the most appropriate route for you with your own Adviser, whom you will meet early in the first semester and then regularly thereafter.

4. Planning your first year curriculum

Some students come to university with precise intentions. Others will be less certain and will wish to keep a number of options open. This is perfectly possible with our flexible system of entry to Science. Whatever your situation you should discuss your course choices in advance with a Senior Adviser. We will attempt to contact you over the summer to organise such a discussion; alternatively you should contact science-chief-adviser@glasgow.ac.uk.

In most cases a first year curriculum is the possible foundation of more than one honours programme, and usually a choice of honours programmes will remain open until the end of second year. If planned well, you will have the choice between two subject areas in which you could specialise at honours level.

The programme to which you were admitted through UCAS will show in ‘MyCampus’. This is merely a method of identifying appropriate subjects for you to study in first year. It means that the compulsory courses will be shown and you may have to choose the remaining 40 or, perhaps, 80 credits. (In a few
cases you will have no choice!) It is important that you use ‘My Requirements’ in MyCampus as this will guide you through both your compulsory courses, and the wide range of optional courses that you can select (provided it is possible to timetable these).

Normally the first year curriculum for science students consists of three level-1 subjects. All level-1 courses are worth 20 or 40 credits and your curriculum should normally add up to 120 credits. These three subjects can all be Science subjects but it is possible to include one non-science subject out of general interest. Please note that you must study a minimum of 80 credits in Science subjects in level 1.

Some courses do not lead to a degree and therefore only one such course should be included in a first year curriculum.

Most students will be content to study three Science subjects. If you would like to study a subject in another area, details of courses are available in MyCampus (you will be guided by ‘My Requirements’).

Here are a few notes of general guidance:

i. Normally you must include 40 credits of your intending honours subject in your starting curriculum. The sole exception to this rule is statistics; the prerequisite for studying Statistics 2 is mathematics at level 1. Statistics 1Y/1Z are strongly recommended along with mathematics if you are intending honours.

ii. At least one subject will be prescribed by your intended honours degree but in some cases two, or exceptionally three, subjects are necessities. For example, mathematics must be taken by students studying degrees in astronomy, electronic & software engineering, physics or statistics. Mathematics is also strong recommended for students studying computing science and software engineering.

iii. Science Fundamentals 1X/1Y are intended primarily for those who have not achieved a previous qualification in chemistry at Higher, A-level or equivalent. It may also be appropriate for those with a grade C in Higher or D at A-level, particularly at the second attempt.

iv. If you think that you might want to take part in the Turing exchange programme (in your second or third year), then you may take an appropriate language course from the Arts list. Even if the teaching occurs in English, knowing some basics of the language of the country you wish to go may turn really useful and help you with making friends and embrace the culture.

v. In most cases two subjects will almost select themselves, but the choice of the third subject may prove difficult. If you have no clear idea what it should be, then here are some common-sense rules.
   a. It may not be sensible to attempt to study a subject which you do not like, or which you know yourself to be very weak in, just because it is familiar and seems suitable for the rest of your curriculum.
   b. If a subject new to you seems attractive and is one that you might wish to study, please consult the online course catalogue in ‘MyCampus’ for further information (using ‘Browse Catalogue’).

On completion of a course, a grade is awarded with A1 being the highest and H the lowest. Most courses have an element of assessed coursework that may be based on tutorials, laboratory reports, essays, class tests and even class exams. Poor performance in exams in December or April/May (i.e. grades E, F, G or H) may be recovered by taking the resit exams in August. The important thing to understand is that there are not normally reassessment opportunities for coursework eg laboratory assessments. Please see the course information provided by each School for details. Although you may be allowed a second attempt at a degree exam, in coursework the mark achieved at the first attempt normally stands. Failure to achieve a reasonable result on the first occasion can lead to a poor overall grade that cannot be greatly improved by taking a resit examination. No matter how well you actually do in the resit exam, even if MyCampus shows A1 as the grade, the grade points awarded will be no higher than 9 per credit (equivalent to a grade D3).
5. A typical first year science timetable

In first year, your 40 credit subjects will typically require attendance for roughly five to seven hours per week. Attendance will be made up of lectures, laboratories and, maybe, workshops or tutorials. Your personal timetable will be available to you in 'MyCampus' once you select courses.

<table>
<thead>
<tr>
<th>Lectures</th>
<th>Each subject usually has between 3 and 5 one-hour lectures per week.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratories</td>
<td>You can expect to attend one 3-hour practical class every week for most subjects.</td>
</tr>
<tr>
<td>Workshops</td>
<td>As an alternative (or in addition) to laboratories, some subjects require attendance at workshops, usually one hour.</td>
</tr>
<tr>
<td>Tutorials</td>
<td>In some subjects there will normally be one 1-hour tutorial per week. Tutorials provide an opportunity for you to meet in smaller groups (up to ten or twelve) with a member of staff.</td>
</tr>
</tbody>
</table>

This means that you will have specific commitments for approximately 20 hours every week. In order to keep up with your work it is extremely important that you attend all of your lectures, laboratories and tutorials. **The remaining time is NOT entirely free. You should aim to spend a further 15 to 20 hours or so in private study – six hours per subject.** When you are not in a scheduled class, you are likely to be undertaking private study to go over lecture notes, read the course textbook, or to prepare assignments which will be handed in and will often contribute to your final grade for the particular course. Coursework can account for as much as 50% of the final assessment in some subjects. Treat your studies as you would paid employment and aim to ‘work’ a 35-40 hour week.

Lecture and lab hours for all level-1 science subjects are included in the details of class selection. When you select courses in ‘MyCampus’ you will then select lectures and laboratories. Try to select all your lectures in the morning and labs in the afternoon – or vice versa.

Within Science, we make every effort to accommodate your choice of subjects within the timetable. For this reason, and because of the large number of students in some courses, lectures and laboratories may be repeated throughout the day and week to ensure that you are able to attend all essential elements of your three subjects. Not all chemistry students will have a 1000 lecture, for example, since it is repeated at 1500.

In addition to timetabled classes on campus, in some subjects (archaeology, earth science and geography) there may be occasional field trips at weekends.

Please note that some lectures take place at 1700. We regard the normal working day as 0900 to 1800. If you have special requirements that prevent your attendance after 1700, you should ensure you choose class times that give you the flexibility you require. Lectures start at 5 minutes after the hour and stop at 5 minutes to the hour. If you have consecutive lectures, this allows you 10 minutes to get to your next lecture that may be in a different building.
6. Assessing your progress

In assessing course performance, students are awarded grades, which carry a specified number of grade points as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Grade Descriptor</th>
<th>Grade points (per credit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Excellent</td>
<td>22</td>
</tr>
<tr>
<td>A2</td>
<td>Excellent</td>
<td>21</td>
</tr>
<tr>
<td>A3</td>
<td>Excellent</td>
<td>20</td>
</tr>
<tr>
<td>A4</td>
<td>Excellent</td>
<td>19</td>
</tr>
<tr>
<td>A5</td>
<td>Excellent</td>
<td>18</td>
</tr>
<tr>
<td>B1</td>
<td>Very Good</td>
<td>17</td>
</tr>
<tr>
<td>B2</td>
<td>Very Good</td>
<td>16</td>
</tr>
<tr>
<td>B3</td>
<td>Very Good</td>
<td>15</td>
</tr>
<tr>
<td>C1</td>
<td>Good</td>
<td>14</td>
</tr>
<tr>
<td>C2</td>
<td>Good</td>
<td>13</td>
</tr>
<tr>
<td>C3</td>
<td>Good</td>
<td>12</td>
</tr>
<tr>
<td>D1</td>
<td>Satisfactory</td>
<td>11</td>
</tr>
<tr>
<td>D2</td>
<td>Satisfactory</td>
<td>10</td>
</tr>
<tr>
<td>D3</td>
<td>Satisfactory</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade</th>
<th>Grade Descriptor</th>
<th>Grade points (per credit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1</td>
<td>Weak</td>
<td>8</td>
</tr>
<tr>
<td>E2</td>
<td>Weak</td>
<td>7</td>
</tr>
<tr>
<td>E3</td>
<td>Weak</td>
<td>6</td>
</tr>
<tr>
<td>F1</td>
<td>Poor</td>
<td>5</td>
</tr>
<tr>
<td>F2</td>
<td>Poor</td>
<td>4</td>
</tr>
<tr>
<td>F3</td>
<td>Poor</td>
<td>3</td>
</tr>
<tr>
<td>G1</td>
<td>Very Poor</td>
<td>2</td>
</tr>
<tr>
<td>G2</td>
<td>Very Poor</td>
<td>1</td>
</tr>
<tr>
<td>H</td>
<td>Credit Awarded</td>
<td>0</td>
</tr>
<tr>
<td>CR</td>
<td>Credit Refused</td>
<td>0</td>
</tr>
<tr>
<td>CW</td>
<td>Credit Withheld</td>
<td>0</td>
</tr>
<tr>
<td>07</td>
<td>Result deferred</td>
<td>0</td>
</tr>
</tbody>
</table>

In assessing progress towards your degree, both the number of credits gained from each course completed and the grade points accumulated will be taken into account. Your Grade Point Average (GPA) and the number of your credits at grade D3 or better are critical in determining your achievement.

The GPA is calculated by multiplying the number of credits gained from each course (usually 20 or 40 in first year) by the grade points awarded for that course, totalling the results and dividing this by your total number of credits.

Thus a student who has taken the following courses and gained the grades specified:

- Physics 1 (40 credits) B3 (15 grade points) 40 x 15 = 600 grade points
- Mathematics 1C (20 credits) C2 (13 grade points) 20 x 13 = 260 grade points
- Mathematics 1G (20 credits) B1 (17 grade points) 20 x 17 = 340 grade points
- Chemistry (40 credits) B2 (16 grade points) 40 x 16 = 640 grade points

Total = 1840 grade points

will have a GPA of 15.33 on 120 credits, calculated as follows: \[ \frac{1840}{120} = 15.33 \].

We do not have a pass/fail system. The grade required to allow you to take the next year of a course varies from B to D depending on the course.

You will only be allowed to continue studying from first to second year and onwards if you have met the appropriate course requirements for each subject AND met the general College of Science and Engineering requirements.

Each School will publish their course requirements, that is what assessments you have to complete and what standard is required before students are allowed to progress to the next stage of study.
Entry to Honours

For admission to a BSc honours programme at the end of second year, you are required to have 240 credits at a GPA of 9. At least 200 of these credits must be at grade D3. You must have at least 60 credits in level-2 subjects and of these at least 40 credits (but more usually 60) of level-2 courses in the intending honours subject at a minimum grade of C3 (see course handbooks for specific course requirements).

Please note that some subjects may require a minimum grade of B3 for entry. This is at the discretion of the Head of School.

Entry to MSci

Admission to an MSci requires 240 credits with a GPA of 12. At least 60 of the credits must be at level-2 at grade B3.

If you have more than 240 credits, then the best 240 are used.

Entry to a Designated Degree

If you opt for a 3-year degree, you should achieve 240 credits with a GPA of at least 10 by the end of second year. This corresponds to an average of grade D2 in all courses throughout first and second year.

Minimum College Progress Requirements

You must meet the following minimum College requirements to be allowed to progress in your studies. Please note that this does not necessarily mean that you will be allowed to advance to the next level, merely that you will be allowed to return as a student with the aim to complete/progress in your studies. Failure to meet these minimum standards will result in a student being referred to the Science Progress Committee. The minimum requirements to progress in your studies are:

<table>
<thead>
<tr>
<th>After 1 year</th>
<th>80 credits with a GPA of at least 8 over the best 80 credits, and with at least 60 credits at D3 or better.</th>
</tr>
</thead>
</table>
| After 2 years | 160 credits with a GPA of at least 8 over the best 160 credits, and with at least 120 credits at D3 or better; must have fulfilled level 1 requirements that allow entry to level 2 Science courses totalling 60 credits.  
You must have obtained a minimum of 80 credits during session two.  
Within these there must be:  
§ a GPA of at least 8 across the best 80 credits within session two,  
And  
§ you must have achieved D3 or better in at least 60 credits within session two. |
| After 3 years | 240 credits with a GPA of at least 9 over the best 240 credits, and with at least 160 credits at D3 or better; at least 60 credits must be at level 2 or above. |
| After 4 years | Must be qualified for entry to BSc in a Designated Subject or BSc Honours Programme. |

(Note: Achieving only this minimal standard will not guarantee progression to the next stage of your degree programme. Some programmes may require a minimum grade in order to be admitted to their Honours programme.)

Your Adviser of Studies will guide you on all of these matters.)
7. Booklist for level 1 entrants

**Archaeology**


Selected titles in the Making of Scotland series, Birlinn, Edinburgh.


**Astronomy**


**Chemistry**


Burrows et al., Chemistry^3, 3rd ed., OUP, 2017. (The 4th ed. will be available once it comes out later this year.)


**Computing Science**

CS1P, CS1Q, CS1F, CS1S

How to think like a Computer Scientist

by Peter Wentworth, Jeffrey Elkner, Allen B. Downey, and Chris Meyers

Online at [http://openbookproject.net/thinkcs/python/english3e/](http://openbookproject.net/thinkcs/python/english3e/).

Computer Science Illuminated by Nell Dale and John Lewis

**Earth Science**

1X / 1Y

Understanding Earth (7th Edition); Grotzinger, J, Jordan, T H, Press, F and Siever, R (2014) published by Freeman ISBN: 978-1464138744 (earlier versions are acceptable) (available online through the University library)

or


**Electronic Engineering**

1X  
Electrical Engineering: Principles and Applications (currently 7th edition, 4th and 5th editions also in library); Hambley, Allan R. published by Prentice Hall.


All above strongly recommended as background reading but not an essential purchase.

Microelectronic Circuits (currently 8th Edition); Sedra AS, Smith KS published by OUP Inc


All above recommended as background reading but not an essential purchase.

1Y  
Electrical Engineering: Principles and Applications (currently 7th edition, 4th and 5th editions also in library); Hambley, Allan R. published by Prentice Hall.

Bebop to the Boolean Boogie (3rd Edition); Maxfield C, (2009) published by Newnes

All above strongly recommended as background reading but not an essential purchase.


All above recommended as background reading but not an essential purchase.

**Exploring the Cosmos**

1X/1Y  
The Cosmic Perspective; Bennett, Donahue, Schneider and Voit (5th Edition) published by Pearson Addison Wesley

**Geography**


Daniels, Peter, Bradshaw, Michael, Shaw, Dennis, Sidaway, James, and Hall, Tim, eds. (2016) An Introduction to Human Geography. (5th Edition) Pearson. Available online through the University library

These publications will also be useful throughout your studies in Geography:


Mathematics

1

A concise introduction to pure mathematics (4th Edition), Martin Liebeck, Chapman Hall/CRC Mathematics, 978-1498722926. Students must have access to a copy of this book which is essential for the course.

The following publications are linked to WebAssign®, an online instructional system that is used throughout the course. At the first meeting of the class, details will be given about bundles that are available with special price reductions. These publications will also be useful for Level-2 Mathematics.


How to Study for a Mathematics Degree, Lara Alcock (978-0199661329)

1C


1G


Physics


Psychology

8. Support and advice
We obviously hope that your experience of university life will be positive and rewarding. There may, though, be occasions when the reality is not as you had anticipated. If you find yourself in this position, please do not make hasty decisions without consulting us first. Sometimes the simplest solutions can be offered to apparently insurmountable difficulties once you have explored the situation with someone who has the experience and knowledge to offer advice.

We would always like an opportunity to discuss your concerns. In addition to consulting your adviser, you can find out about the many other student support services available to you at www.gla.ac.uk/students/.

Adviser Meetings
Please do not overlook requests to make an appointment with your Adviser of Studies. You will be asked to meet with your Adviser of Studies before 30 September. Advisers are very experienced in the art of identifying problems before students are even aware of their existence and are adept at finding possible solutions. Meetings take place at least twice per year and may take only 10-15 minutes but they are an essential part of university life. Please give your Adviser an opportunity to get to know you so that you can make use of this valuable source of help should the need arise.

Common worries affecting students might include:

- **Wrong choice of course**
  If you feel you have made the wrong choice of subjects, do not withdraw without discussing options with your adviser; either your own Adviser, or the Chief Adviser. You may be judging matters too early without being fully aware of how your courses develop. Or you may indeed have identified an alternative, more attractive degree. In some cases, it is easier to transfer after even partial completion of your existing curriculum than to give up entirely and achieve nothing from your first year of undergraduate study.

- **Study Habits**
  If you are experiencing difficulty with study habits, you may find it helpful to consult one of our advisers in the Student Learning Service: www.gla.ac.uk/sls/.

- **Finance**
  Managing on a student loan is never easy and many students have to consider carefully how to balance their budget. If you find yourself with serious financial problems, please consult your adviser who may be able to direct you towards possible sources of help in the university such as the HEI hardship fund or the University’s hardship fund. Details of these are available from the Fraser Building: www.gla.ac.uk/students/.

- **Part-time employment**
  Quite reasonably, students often choose to work part-time to supplement their income. There is a recommended maximum of 12 hours work per week for students during the academic year and recent surveys have shown that working excessive hours adversely affects student health and academic performance.

- **Accommodation**
Please be aware of the details of any contract you are asked to sign for accommodation. You may be committed to a year-long lease and, if your arrangements involve sharing with other students, as signatory to the contract, you may find yourself liable for continued payments on behalf of a flatmate who has found alternative accommodation. University residences are normally let for a full academic year and the lease is normally legally binding for the full period.