



University of Glasgow | School of Physics & Astronomy



Science Skills (PHYS1011)

Course Information Guide 2023-24

This level 1 course is intended for science students. It is cross-curricular in nature, using topics within Astronomy, Chemistry, Earth Sciences, Geography and Physics to develop students' scientific problem-solving skills and graduate attributes.

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1 Welcome statement from Head of School

As the Head of School of Physics and Astronomy, I would like to welcome you to your new class. The School prides itself in providing an excellent and supportive learning and teaching environment that is fully integrated with our research; you will have the opportunity to interact with world-leading researchers working at the cutting edge of a wide range of fields of physics and astronomy, who are tackling some of the biggest contemporary challenges in science and technology.

Having said that, this year is going to be “interesting” to say the least, due to the uncertainties caused by the coronavirus pandemic. We will all be in learning mode this year. Staff will be undertaking a great deal of work in preparing teaching materials to be used in a blended learning approach that is flexible enough to work in different scenarios. We are confident that the current challenges present us with opportunities to re-evaluate and improve how we learn and teach, and for this you will play a critical role. I ask that you not only bear with us in these extraordinary circumstances, but engage with us through any of the available communication channels in letting us know what works and what does not.

One thing that will not change is the School’s firm commitment to supporting equally the careers and development of all its students and staff, as exemplified by our receipt of an Athena Swan Silver award. We value the diversity of our student body and recognise that this diversity improves the quality of our work by bringing a wide range of skills and viewpoints. We therefore expect that all staff and students will work productively and professionally together in an atmosphere of mutual respect.

To support this, all our staff and graduate students undertake equality and diversity training, our lab guides include a code of conduct for students, supplementing the University codeⁱ, and we support the University's Dignity at Work and Study policyⁱⁱ. You can be assured that any instances of bullying, harassment, or offensive language or behaviour will be both taken seriously by the School and treated with sensitivity. Points of support for students are your adviser of studies, your Class Head and Lab Head, and in addition the School has two appointed Equality and Diversity offices, to whom students may speak in confidence.

I wish you success with your current and future studies.

Best wishes



Professor David Ireland
Head of School

i <https://www.gla.ac.uk/myglasgow/senateoffice/studentcodes/studentconductstaff/>

ii <https://www.gla.ac.uk/myglasgow/humanresources/equalitydiversity/dignityworkstudyover/>

2 General Information and Introduction

The Science Skills course consists of one lecture and one workshop per week in Semester 2. The lectures are on Mondays 1200-1300, and the workshops are on Tuesdays 1000-1200 and Thursdays 1400-1600. All students attend the Monday lectures, and then one of the two workshops each week. Venues are detailed on Moodle and through your MyCampus timetable.

The course begins on the first Monday of Semester 2.

2.1 Communication

All information about the class will be communicated via the Science Skills class Moodle site linked from <https://moodle.gla.ac.uk/course/view.php?id=40785>. **You will automatically be registered for access to the Science Skills Moodle site.** The login ID and password are those you use to access all University computers, including your student email account. You must regularly check the Moodle site for new information.

2.2 Contacts

Class Head/Lecturer: Dr Eric Yao

Room 232a, Kelvin Building Tel 0141 330 6190

email: eric.yao@glasgow.ac.uk

Lecturer: Dr Beth Paschke

Rm A4-35 Level A4, Joseph Black Building Tel 0141 330 6057

email: Beth.Paschke@glasgow.ac.uk

If you have general questions about your course or your degree, please contact your own Adviser of Studies.

2.3 Pre- and co-requisites

There are no pre-requisites for this course, nor any co-requisites.

3 Course Description

Science Skills is a 20-credit level 1 elective for students on BSc or MSci plans in the College of Science and Engineering. The course is multi-disciplinary, using a combination of lectures, workshops and on-line learning to allow students to develop the skills associated with being a scientist in the 21st century. The course will use topics from the subjects of Astronomy, Chemistry, Earth Sciences, Geography and Physics, but is designed in such a way as to be suitable for students in all science subjects.

Science Skills focusses on the teaching of skills, rather than new theoretical knowledge, directly tackling the teaching of graduate attributes. Working with other students in groups is an essential element of this course.

3.1 Intended Learning Outcomes

At the end of this course, you should be competent in doing the following:

- (1) Working effectively in teams and solve problems collaboratively.
- (2) Carry out order of magnitude estimation and approximation calculations.
- (3) Determine the errors on calculations.
- (4) Demonstrate an ability to manipulate algebraic expressions.
- (5) Perform dimensional analysis to identify unknown variables.
- (6) Identify key components within a problem to enable its solution.
- (7) Be able to correctly interpret three-dimensional models.
- (8) Demonstrate how to collect and process scientific data.
- (9) Demonstrate how to extract and evaluate information from wider sources, e.g. literature and the internet.
- (10) Identify appropriate roles for team members and allocate tasks according to strengths and interests
- (11) To develop, and promote recognition of, Graduate Attributes.
- (12) Analyse and process data using Excel.

3.2 Content delivery and content

The Science Skills course is delivered through a combination of lectures, workshops and self-instruction.

3.3 Assessment

There are two components to the assessment of the Science Skills course. 50% of your course grade comes from a group project, with the remaining 50% coming from a degree examination paper (90 minutes) that students sit in April/May.

3.4 Course Materials

There is no textbook for this course. All resources will be provided at the lectures, workshops or electronically via the Moodle site.

Please note that lecture recordings, if available, and ALL course materials provided are for your own personal use and can only be used in relation to your studies. Any unauthorised distribution of course materials, including uploading them onto unauthorised web sites and social media sites, such as YouTube or Course Hero, will be considered in breach of the code of conduct and will be subject to disciplinary action.

3.5 Minimum requirements to avoid CR

To receive credit for this course, students must:

- Participate in the group project work and sit the degree examination.
- Attend a minimum of 75% of all workshops.

3.6 How to get the best from your studies

Students should attend all lectures, workshops and tutorials to get the best out of the course. You should also play an active role in the group project.

3.7 Other topics at the same level

This course fits in well to the curricula of students on Science BSc or MSci degrees.

4 Information for Exchange students

This course is available to any exchange students in the College of Science and Engineering.

5 Attendance and Adverse Circumstances

Students are expected to attend all lectures and workshops sessions. Attendance will be monitored at these. These attendance records will form part of the performance assessment. Attendance at the degree examination is also compulsory.

If you miss an examination or an assessment deadline, or if you believe your assessment performance has been affected by adverse circumstances, you should submit a **Good Cause Claim**, and this must be via MyCampus.

Submission of a Good Cause Claim is the mechanism that allows your circumstances to be considered by the Board of Examiners. Please note all Good Cause Claims must be submitted within **one week** of the date of the affected assessment.

Students should note that the University's Code of Assessment allows grades to be awarded only on the basis of demonstrated work. So, if you feel that some piece of assessed work has been affected by adverse circumstances, and if staff agree, then the only course of action available is for the grade for that piece of work to be set aside (in the case of continuously assessed work and Class Tests) or to allow a resit (in the case of Degree Exams) – marks cannot be adjusted.

To submit a Good Cause Claim on MyCampus:

1. Go to the 'Student Centre' and select *My Good Cause* from the Academics menu.
2. Select the relevant course(s).
3. Complete the report in MyCampus (there is provision for particularly sensitive information to be provided separately, outwith the system, but a claim report must still be entered into MyCampus).
4. Add supporting evidence by uploading documents. (Scanners are available on level 3 of the University Library.) It is the responsibility of the student to keep all original documentation and submit it to the Class Head on request.

If you encounter any difficulties with this process please contact the Class Head immediately to let him or her know you have a problem with your Good Cause Claim.

What will happen to your Good Cause Claim

The Course Administrator and/or Class Head will ensure that your claim is considered and this will be in accordance with the section of the Code of Assessment that covers incomplete assessment and good cause (paragraphs 16.45 to 16.53). The outcome of your claim will be posted into the Approval Information section on your Good Cause Claim in MyCampus. If it is accepted that your assessment was affected by good cause, the work in question will be set aside and you will (as far as is practicable) be given another opportunity to take the assessment with the affected attempt discounted.

For absences that are significant but for which a good cause claim is not being filed, students must complete a **MyCampus absence report**. A significant absence is defined to be:

- an absence of **more than seven consecutive days** during working periods
- an absence of **any duration** if it prevents a student from for example fulfilling any minimum requirement for the award of credit (e.g. missing attendance at one day of a two-day laboratory, but where the work was nonetheless submitted and therefore not involving a Good Cause claim).

All potentially significant absences should be reported as soon as is practical, by completing part 1 of the MyCampus absence report. Part 2 of the MyCampus absence report should be completed on return to university. The normal submission deadline for the completed absence report is 7 days after return to university. Documentary evidence is required when reporting any significant absence.

See also the Senate Office Absence Policy:

<http://www.gla.ac.uk/services/senateoffice/policies/studentsupport/absencepolicy/>

If you do not attend the degree examination, and do not have good cause, supported by appropriate evidence, you will receive a grade of Credit Withheld (CW) for the course. In such cases, students will be allowed to take the resit examination, but their grade points will be capped at the level of D3. If you do not attend the resit examination, this will become Credit Refused (CR). If you do not meet the minimum award criteria set out in 3.5 you will not be allowed to take the degree examination and will receive a CR grade.

It is your responsibility to ensure that absences are accounted for in accordance with the student absence policy.

6 Getting help and advice

If you need help about any aspect of the Science Skills course, please **ASK**. If you have queries about a particular course it is best to first approach the lecturer concerned. You will find the Janitors in all University schools helpful in finding the person you want.

Information such as examination arrangements, changes to the timetable and other administrative details will be posted on the class Moodle site. It is your responsibility to look at this site regularly.

6.1 Staff-student committee

This meets once. You will have the chance to elect a class representative soon after the beginning of Semester 2. Please keep them informed of any matters concerning the Science Skills course that you would like to have discussed at Staff-Student committee meetings. If, however, you have any comments, queries or suggestions on any aspect of the course, please do not hesitate to contact the Class Head at any time.

6.2 Support for those with disabilities

Apart from the support provided via the Disability Service located at 65 Southpark Avenue, within the School of Physics & Astronomy, Prof. Ik Siong Heng (Rm252C Level 2, Kelvin Building) is available to advise students with disabilities on matters relating to their participation in their coursework.

6.3 Information on Student Learning Development

The Student Learning Development (SLD) offers study skills advice, guidance and support to all students. If you would like to make your learning techniques more effective, you can attend workshops that take place regularly in the McMillan Reading Room or contact the

relevant Effective Learning Adviser (ELA). Popular topics for discussion include improving essay writing, revision techniques, exam techniques and note-making.

You can find more information about the SLD at <https://www.gla.ac.uk/myglasgow/sld/>.

Alternatively contact your ELA at studentlearning@gla.ac.uk using your student email address.

6.4 Maths & stats advice

SLD has specific provision for Student Mathematical Support for all Level 1 students and to other undergraduates studying first year level mathematics and/or statistics. To make a one-to-one appointment with the Maths Adviser, email jenny.august@glasgow.ac.uk using your student email address.

Further information from this link:

<https://www.gla.ac.uk/myglasgow/sld/mathsandstats/math/>

6.5 Complaints procedure

Obviously, we hope that your time at university goes as smoothly as possible, but if you do have cause to raise a complaint about anything, the university has a clear policy for handling these.

The University has introduced a new Complaints Procedure for 2013-14. If you have a complaint please raise it with a member of staff in the area concerned. We aim to provide a response to the complaint within five working days. This is Stage 1.

If you are not satisfied with the response provided at Stage 1 you may take the complaint to Stage 2 of the procedure. Similarly, if your complaint is complex, you may choose to go straight to Stage 2. At this stage the University will undertake a detailed investigation of the complaint, aiming to provide a final response within 20 working days.

You can raise a Stage 2 complaint in the following ways:

- by e-mail: complaints@glasgow.ac.uk; by phone: 0141 330 2506
- by post: The Senate Office, The University of Glasgow, Glasgow, G12 8QQ
- in person: The Senate Office, Gilbert Scott Building, The University of Glasgow.

Complaints do not have to be made in writing but you are encouraged to submit the completed Complaint Form (available from "Make a complaint" in the the UoG Helpdesk through your MyCampus account at <https://glasgow.saasiteu.com/Modules/SelfService/#serviceCatalog/>) whether it is at Stage 1 or Stage 2. This will help to clarify the nature of the complaint and the remedy that you are seeking.

Remember that the SRC Advice Centre is available to provide advice and assistance if you are considering making a complaint. (Tel: 0141 339 8541; e-mail: advice@src.gla.ac.uk)

7 Timetable:

Science Skills Timetable 2023-2024

Week	Monday date	Lecturer	Topic
1	08/01/2024	Dr Yao	Introduction + Working in a team
2	15/01/2024	Dr Yao	Finding things out (Researching a new topic)
3	22/01/2024	Dr Paschke	Data handling
4	29/01/2024	Dr Paschke	Identifying key components within a question
5	05/02/2024	Dr Yao	Problem solving as a team
6	12/02/2024	Dr Yao	Manipulating Equations & Working with Excel
7	19/02/2024	Dr Yao	Manipulating Equations & Errors
8	26/02/2024	Dr Yao	Orders of Magnitude
9	04/03/2024	Dr Yao	Dimensional analysis and units
10	11/03/2024	Dr Yao & Paschke	Project presentation
11	18/03/2024	Dr Paschke	Living in a 3-D world

Session	Time	Venue
Lecture	Mon 12:00 -13:00	Adam Smith: 718
Workshop 1	Tues 10:00 - 12:00	St Andrews: 234
Workshop 2	Thurs 14:00 - 16:00	St Andrews: 234

8 Science Skills feedback timeline

The School of Physics & Astronomy – under whose administration the Science Skills course falls – has established a new policy for providing feedback to students. The full details can be found in the document “School of Physics & Astronomy Feedback Policy” on the Science Skills Moodle site. This document provides a summary of how this policy will be applied to the Science Skills course assessments.

Group Project

Timing of feedback:

- Students can expect feedback on their group project presentation and report within 15 working days of the submission.

Form of feedback:

- Individual project grades along with feedback on the different components will be available on Moodle.

Degree Examination

Timing of feedback:

- Within 15 working days of the final examination board meeting, usually late June/early July.

Form of feedback:

- Students will receive a breakdown of their marks for each question they attempt in the examination paper(s), together with their total for the paper.
- Detailed solutions to the examination paper will be published through Moodle.
- The distribution of grades for the exam paper, for the class as a whole, will be published through Moodle.
- The distribution of grades for the complete course, for the class as a whole, will be published through Moodle.

Resit Examination

If a student requires to take the resit examination paper in August, they can arrange a meeting with the class head, or nominated deputy. At this meeting, students will receive detailed feedback on their performance in the initial examinations. This meeting must be requested within 15 working days of the publication of the course grades in MyCampus. Only students requiring resits will be allowed to arrange such meetings, which will typically last 20 minutes.

Eric Yao

Class Head
