

Department of Earth Sciences  
University of Cambridge



# PART IB EARTH SCIENCES A COURSE GUIDE 2020-21

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# 1. Course Content and Themes

The IB Earth Sciences A course examines the creation of the sedimentary record by geological, chemical, biological, and climate processes. It also provides Earth Scientists with tools for interpreting this record to reconstruct Earth's history. The course covers the description and diagnosis of sedimentary rocks in terms of their primary components and their deformation. The relevant processes fall into two groups:

- processes ultimately driven by the external energy source of the sun. These are the Earth surface processes of the atmosphere, hydrosphere and biosphere. They are covered in the course sections on atmospheric and ocean circulation, sedimentology, marine chemistry, and palaeontology.
- processes mainly driven by the internal energy source of the Earth's heat, that is those of the lithosphere, asthenosphere, and deeper. The IB Earth Sciences B course deals with igneous and metamorphic processes. The Earth Sciences A course covers tectonic and structural processes, particularly as they affect the formation and deformation of sedimentary rocks and basins.

The course largely follows a source-to-sink perspective. We begin with sections on structural geology and tectonics with a focus on the uplift of highlands and formation of basins, which provide accommodation space for deposition of the sedimentary record. We examine how sedimentary particles of lithic and biogenic compositions are produced, deposited in the ocean and eventually lithified to become the rock record. Along the way, we focus on the physical circulation of the ocean and dissolved chemistry of seawater, as well as its link to biological processes. We end the year looking at the fossil evidence of invertebrate and vertebrate life which is contained within this record and provides a tool to reconstruct large-scale climate and biological evolution.

Whereas, the IA Earth Sciences course took a holistic view of the Earth, the IB Earth Sciences A course is necessarily more reductionist, tackling the fundamentals of each topic. This approach gives you the rigorous grounding that you need to continue to Part II Earth Sciences.

You will notice some differences in presentation and style of the IB courses as compared with IA Earth Sciences. These differences reflect the transition from closely guided work in IA to the more independent learning required of you in Part II. The course will increasingly highlight scientific debates, yet to be resolved, rather than attempt to give a simplified, if neat, explanation. You will need to read around the course more to understand these debates. Some reading of primary literature in journals will be necessary when you research your mapping project.

## 2. What does the Earth Sciences A course look like this year?

**Communications** will take place through the [ESA Moodle page](#), and associated announcements. Please check regularly and carefully. There may be changes to practical arrangements at short notice; and/or important notices regarding assessments.

**Lectures** will cover the essential parts of the course. For 2020-21 lectures will take place in the Physiology lecture theatre at 9.30am on Mondays, Wednesday and Fridays. We will endeavour to deliver face-to-face so long as (a) it remains safe to do so as the infection rates develop, according to government and University guidance (b) the lecturer wishes to, and (c) a significant portion of the students choose to attend. These face-to-face lectures should not be seen as mandatory, and no information will be presented which otherwise is not accessible online. Lectures will also be recorded and available online and posted to Moodle the same day as the scheduled lecture. This year, you will benefit from having a laptop and/or a tablet device with which to engage with the course. Handouts can be accessed on Moodle. Lecture handouts and slides will be available on Moodle 24 hours in advance of the lecture. A detailed description of how the face-to-face lectures will run is later in this guide, in Section 5; it is essential that you read this carefully.

**Practicals, or demonstrations**, play an important role in the course and we will endeavour to maintain our normal practical schedules as much as possible in 2020-2021, with the appropriate social distancing, behaviour and practices to keep ourselves safe. A detailed description of how the practical sessions will run is later in this guide, in Section 5; it is essential that you read this carefully. In the practical sessions you will develop your **practical** skills and learn how to tackle real geological maps. A key element of the practical teaching is the interaction with the demonstrators, who will give you guidance on the problems in hand. Answers to the practicals will be made available on Moodle at the end of each practical session.

**Field trips** at Easter (to Dorset), and in the early summer (to Skye, Scotland) in 2021, may or may not go ahead, depending on what the pandemic allows. We will keep you updated and provide information on these later in the year. Field trips are important in augmenting the lecture and practical material; and in developing the field skills (including observation, measurement, note-taking and mapping) that you will need for your independent field projects later next year.

**Supervisions** You should have weekly supervisions arranged by your Director of Studies at college. If you find that you are missing supervisions, are lacking communication from supervisors, or are facing any problems relating to supervisions, please contact your Director of Studies and also the course coordinator Alex Piotrowski ([amp58@cam.ac.uk](mailto:amp58@cam.ac.uk)).

**Reading** beyond the lectures will be essential if you are to develop a full understanding of the material that is being covered in the course. Your College library should have all the standard textbooks from your reading lists. If not, ask the library to order them through your Director of Studies or supervisor.

### 3. Geological Mapwork

- Initial instruction will be given in lecture 2, mainly with reference to a short booklet that supplements the one handed out in Part IA Earth Sciences.
- There will be a component of map and cross-section work in practicals 1-8, then at intervals in the rest of the year's course. You will need a few coloured pencils, a ruler and a protractor for mapwork, as well as pencils and pens. It is useful to bring these routinely to IB Earth Sciences A practicals.
- For additional practice, you will be given a booklet of eight map exercises, to be attempted in your own time. We suggest that you finish four exercises in each of the first two terms. Your supervisor may encourage you to do these maps as supervision work.
- Note that mapwork forms the basis of the shorter of the two practical exam papers.

## 4. Course Documentation

The Lecture lists for Part IB, plus timetables can be found on the [Moodle](#). You can also set up your own personal timetable based on your subject and practical choices, using the online University [Timetable](#).

Reading lists will be available on Moodle, and lecture notes and other course documentation will be added to Moodle throughout the year. Please speak to Helen Averill or Mitha Madhu if you are having any problems with access, although everyone should have access to the course pages from the beginning of Michaelmas Term.

## 5. Arrangements for In-person and Online Lectures and Practicals

**Do not attend any lectures, practicals, or supervision in person if you show any symptoms of COVID-19 or have been instructed to self-isolate. If you develop symptoms while attending a face-to-face lectures, practicals, or supervision session, please leave it immediately.**

### Lectures:

- Lectures will be available both face-to-face and online. The same material will be covered in both, and in most cases the online lecture will be a recording of the face-to-face lecture.
- we will endeavour to deliver face-to-face lectures so long as (a) it remains safe to do so as the infection rates change, according to government and University guidance (b) the lecturer is able or wishes to, and (c) a significant portion of the students choose to attend. These face-to-face lectures should not be seen as mandatory, and no information will be presented which otherwise is not accessible in the online lecture.
- the lecture will be recorded by lecture capture or perhaps pre-recorded, and will be posted to Moodle the same day as the scheduled lecture.
- if advice on social distancing or gathering in groups changes according to government and University guidance, then we may cancel face-to-face lectures and instead the lectures will be pre-recorded and posted to Moodle on or before the scheduled time of the lecture.
- Lecture handouts and slides will be available on Moodle 24 hours in advance of the lecture.
- Lecture handouts will be available online and may be printed by students in college, or viewed on the students' own tablets or laptops in the laboratory.

### Lecture Theatre Logistics:

- The face-to-face lectures will be held in the Physiology Lecture Theatre on Mondays, Wednesdays and Fridays at 9:30am – 11am. The actual lecture will last one hour, as usual, but we are scheduling extra time for arrival, departure, cleaning, and other logistical reasons. We are also asking the lecturer to introduce the practical at the end of the face-to-face and recorded lecture.
- The Physiology Lecture Theatre has a room capacity of 43 people: 20 in the central area, 7 on each of the wings, 9 on the balcony. Seats will be marked as either usable or not usable.
- You must wear a face mask at all times and stay 2m distant from each other while enter, sitting, and leaving the lecture.

- Please assemble outside of the lecture theatre doorway in the Physiology courtyard at least 5 minutes before the lecture. Please keep social distance.
- You will be ushered into the lecture theatre and directed to your seat, which will be filled from the front of the room to the back of the room.
- Please sign in at: <https://trace.esc.cam.ac.uk/site/central/building/downing/rooms>  
This will be accessible to you if your Cambridge University G-Suite Google Account is set up (<https://help.uis.cam.ac.uk/service/collaboration/g-suite/g-suite-registration>).
- You will be instructed to sanitize the surfaces at the start and end of the lecture.
- Latecomers will not be admitted.
- When you leave the Lecture, please leave the building. We are trying to limit footfall throughout the buildings and exposure between different year groups, so do not loiter in the lecture theatre or building, or cross into other areas or teaching laboratories in the building.

### **Practicals:**

- There will be three ESA Practical sessions per lecture. Practical times are: Mon, Wed, Fri 11:15 am to 1 pm and 2 to 4 pm; and Tue, Thu, Sat 10 am to 12 pm. Only 14 students maximum will be able to attend a practical session. Students will need to sign up to 3 sessions per week and stick to them all term. A practical sign-up sheet is on Moodle.
- An additional slot will be added if more than 42 students take ESA.
- Practical will also be accessible online on Moodle for students who are isolating or cannot attend the in person session.
- Students need to sign up at start of year for the practical sessions using the Google Doc spreadsheet which is accessible via Moodle:

**<https://www.vle.cam.ac.uk/course/view.php?id=79021>**

or this link, which goes to the same Google Doc:

**<https://docs.google.com/spreadsheets/d/16Fp7gJROII8q9Xi7Zi2B1XOh1RfD6HxRI3L7fccI2Dw/edit#gid=1426757935>**

- Please sign up for three sessions per week, one in each of: Slot 1 (red columns) one from 2 (blue columns) and one from 3 (yellow columns). Being sure to sign in for the same Desk Number. Low Desk Numbers are closer to the front of the room, screen and projector.

- Students must not swap to another session or desk without permission. Please contact Alex Piotrowski ([amp58@cam.ac.uk](mailto:amp58@cam.ac.uk)) or Helen Averill ([hpd20@cam.ac.uk](mailto:hpd20@cam.ac.uk)) if you need to change practical sessions or desks.
- Because of the cancellation of the Practical Exam associated with this course, there will be assessed practicals, approximately one per lecturer within the course structure. These will be designed to be done either in person or fully online. We do not intend that these assessed practicals should take very long; no more than a few hours of working time per assessment. Where sketches and drawings are included, these can be hand drawn and scanned/photographed and inserted into the pdf.
- We recommend students keep a laboratory notebook this year for practical answers, supervision notes and sketches.

### In Person Practical Logistics:

- We will endeavour to run in-person practicals as much as possible this year. Important: whether a practical is held in-person or online may change at short notice. Please pay close attention to the ESA Moodle page, where announcements will be made.
- Please arrive for the Practical at the Sedgwick Museum entrance to the Earth Sciences department. Only use the north staircase, which rises from the Common Room to the Library, to enter and leave the practical session.
- *Protocols to minimise the spread of Covid-19 in the laboratory.* Students must wear face masks at all times and stay 2m distant from each other while entering, attending, and leaving the practical. Please social distance while traversing the centre of the room, using the floor markings. Enter the lab one-by-one, observing social distancing. Allow the person in front of you to find their place before finding yours. On exit, please leave singly, observing social distancing.
- The Practical lab has two doors and allow for a one-way system, entry through door near the Library, exit through door nearest the IA Lab.
- Upon arrival in the practical, sign in via the Earth Science Department website:
- Please sign in at: <https://trace.esc.cam.ac.uk/site/central/building/downing/rooms>
- this will be accessible to you if your Cambridge University G-Suite Google Account is set up (<https://help.uis.cam.ac.uk/service/collaboration/g-suite/g-suite-registration>).
- Hand gel stations will be located near the doors and a bottle of hand gel will be at each work area.
- You must sanitize your workspace, table, chair, and all other surfaces upon arrival and departure from the practical session.

- Please only use the toilet at the base of the north stairwell, near the Earth Science Department Reception.
- Students will work at the outer benches, facing wall or windows. Windows and doors remain open during session to enhance air flow.
- If you have a question, please raise your hand. The Lecturer or Demonstrator will use the screen and projector connected to a laptop, and either an electronic whiteboard (calculations) or visualizer (specimens), to answer your question.
- You may be given a booklet by the Lecturer containing printouts of practical material at the start of the section of practicals, which you should bring to all practical sessions. This booklet will also be available online on Moodle.
- Most practicals will be calculation based, and we encourage you to bring and use a laptop or tablet to work through the practical. If the practical uses maps, they will be covered in plastic sheeting, for easy wipe down with disinfectant. If the practical is a specimen-based practical, we will place specimens in individual workspaces before the practical begins. Where there are not enough specimen, they will be placed on a samples table; students will have to collect them and return as required. Please use hand sanitiser between handling samples and also if microscopes or other equipment is used.
- When you leave the Practical, please leave the building via the North Staircase only. We are trying to limit footfall throughout the building and exposure between different year groups, so do not loiter in the building or cross into other areas or teaching laboratories in the building.
- We ask that you respect others' space and follow guidelines for ensuring everyone's safety. Failure to comply with these protocols may result in being asked to leave.

## Online practicals:

All practicals will have an online version, accessible on Moodle for download at the scheduled practical time. Some practicals will be intended to run only online this year; and some may need to be shifted to being online-only if it becomes unsafe to run in-person practicals. Students unable to attend practicals in person may use the online version instead. Each lecturer will make their own arrangements about whether an online teaching session or Q&A will be available for each practical; these announcements will be posted on Moodle.

## Supervisions

You should have weekly supervisions arranged by your DoS at college. If you find that you are missing supervisions, are lacking communication from supervisors, or are facing any problems relating to supervisions, please contact your DoS and also the course coordinator Alex Piotrowski (amp58@cam.ac.uk).

## Mapping Project

Those who go on to take Part II Earth Sciences will normally do a mapping project next summer. Due to the uncertainty related to the Covid-19 pandemic, it is too early to say whether this will go ahead as normal, or how it will be modified. However, we will adapt the field courses and mapping project such that we provide the best field education possible under the COVID-related restrictions as they develop. More information will be available later in Michaelmas term.

## 6. Examinations

- There are two theory papers, each of three hours duration, which count towards 60% of the exam. Each paper is divided into two sections of five questions. You have to do two questions from each section.
- The sections approximately comprise: -
  - 1A Structures, Sedimentary Basins
  - 1B Tectonics and Geodynamics, Ocean Circulation and Chemistry
  - 2A Stratigraphy and Siliclastic Sediments, Chemical and Biogenic Sediments
  - 2B Evolutionary Palaeobiology, micropalaeontology, Vertebrate Evolution
- Note that past papers prior to 2015 are called *Geological Sciences A* and that the content of these sections was different in past papers from 2007 and earlier.
- There are two practical papers. Paper 1 (3 hours) has four questions covering the rest of the course. Paper 2 (1½ hours) examines geological mapwork and structural geometry. All practical questions are compulsory. The practical exam counts for about 40% of the total marks.
- The exam marking is done by a panel of three examiners, not necessarily staff who have taught the course in that year. Given the 60/40 ratio of theory to practical marks, each theory paper is scored out of 30% of the total marks, practical paper 1 is scored out of 26.7% and practical paper 2 out of 13.3%. No marks are awarded for missed questions. The raw total mark out of 100% is used to rank candidates by order-of-merit. The raw marks are then scaled ('norm-referenced') such that approximately 60% of candidates get a mark of 60 or above. The minimum marks for a pass, third, 2.2, 2.1 and first are 40, 50, 60 and 70 respectively. In a small subject cohort like IB Earth Sciences, there is some flexibility in these percentages and therefore in where examiners choose class borderlines. The examiners carefully scrutinise the marks of candidates close to borderlines, to ensure that you are awarded the subject class deserved by your exam performance.
- You are then given a *subject rank percentile* (SRP) according to your ranking in IB Earth Sciences A. If  $r$  is your ranking (1 = top) and  $c$  is the class size, then your SRP is  $100 \times (c+1-r)/c$ . So, if the class size is 50, then the person ranked top gets an SRP of 100, the second person 98, and so on down to the bottom person who gets 2. The SRP is used below in assigning your overall NST class.
- The first estimate of your overall NST class is the median of your three subject classes. There is a table of all possible outcomes on the [NST course website](#). A second measure is the arithmetic mean of your SRPs; candidates with an average percentile rank of  $\geq 80\%$  will be given a first, those between 80% and 40% a 2.1 and those between 40% and 20% a 2.2. Where the two methods produce different outcomes, you are placed in the higher of the two resulting classes.
- Your College Director of Studies receives a breakdown of your marks into a theory and practical score for each subject.

## 7. Marking Criteria

*Mark scheme for theory examinations*

<b>%</b>	<b>Class</b>	<b>Criteria</b>
90-100	1	Brilliant answer. Exceptional understanding of subject and relevant literature. Outstanding critical analysis, full of insight Excellent organized, expressed and illustrated
80-89		Excellent understanding of subject. Answer goes well beyond lectures. Effective critical analysis and grasp of relevant literature Well organized, expressed and illustrated.
70-79		Very good understanding of course material. Sound evidence of outside reading. Some critical analysis. Well organized, expressed and illustrated.
60-69	2.1	Sound to good understanding of course material. Limited use of extra-course material. May contain minor factual errors or omissions. Well organized, coherent and adequately illustrated.
50-59	2.2	Based entirely on course material. Lacks some detail in content. Contains significant factual errors or omissions. Some deficiencies in organization, style or illustration.
40-49	3	Based imperfectly on course material. Contains numerous factual errors or omissions Answer has merit but lacks a sound structure. Concepts poorly expressed and illustrated..
30-39	Fail	Inadequate content, some maybe irrelevant. Poorly organized, expressed and illustrated
20-29		An attempt at the question, but lacking most relevant content.
10-19		An answer with only isolated glimpses of relevant content.
0-9		A nearly worthless or irrelevant answer.
<i>Expectations of appropriate 'critical analysis' and 'relevant literature' will vary from year to year of the Tripos</i>		

*Mark scheme for assessed practicals*

<b>Mark</b>	<b>Criteria</b>
3	Very good or excellent answers. Demonstrates detailed knowledge of material. Where calculations are necessary they are mostly correct, displaying appropriate workings. Where descriptions, sketches and interpretations are required, these are detailed, mostly correct and well organised.
2	Sound answers. Demonstrates knowledge of material but may miss some detail. Where calculations are necessary, some are correct but there may be some errors. Where descriptions, sketches and interpretations are required, these are broadly correct but lacking in detail with some errors and omissions.
1	Poor answers. Demonstrates a lack of knowledge or poor understanding of material. Where calculations are necessary, mostly incorrect with no explanation of method. Where descriptions, sketches and interpretations are required, these are basic, lacking in detail and poorly presented.

*Mark scheme for any assessed map practicals*

<b>Mark</b>	<b>Criteria</b>
9-10	Excellent answers. Demonstrates advanced understanding of geological maps, including a well constructed and accurate cross section and correct interpretation of boundaries and 3D structure.
7-8	Very good answers. Demonstrates a correct and consistent understanding of geological maps, including a largely accurate cross section and sensible interpretation of boundaries and 3D structure.
5-6	Competent answers. Demonstrates a basic understanding of geological maps. Cross section and interpretation of boundaries and 3D structure attempted but with some errors/omissions.
3-4	Poor answers. Demonstrates an incomplete understanding of geological maps. Cross section and interpretation of boundaries and 3D structure attempted, with significant errors/omissions.
1-2	Brief and poorly presented answers demonstrating a broad lack of understanding. Cross section and interpretation of boundaries and 3D structure attempted, but there are many errors/omissions.
0	Little of value in the answers.

## 8. Laboratory Safety and Code of Conduct

### Covid-related safety

- Face masks must be worn in the ESA lab at all times.
- Maximum capacity of the ESA lab is 14 students (plus 1 lecturer and 1 demonstrator).
- The appropriate social distancing must be observed at all times in the ESA lab.
- Students must not approach the lecturer or demonstrator, or one another. The lecturer or demonstrator will be at the front of class, with microscope, visualiser and projector screen.
- Hand sanitisation must take place on entry and exit to the lab, and between handling samples and microscope equipment.
- The surfaces and seats must be wiped down before and after each practical and supervision, by the student.
- If students do not obey these measures, designed to keep everyone safe, they will be asked to leave.

Please read the [Government guidance on safe practice related to Higher Education settings](#), the [NHS Covid-19 pages](#) and the [University's Covid-19 pages](#).

### General safety

- Food or drink must **not** be consumed in the ESA lab, with the exception of water in a capped bottle.
- To allow unobstructed passage around laboratories all students' personal possessions must be stowed under the benches.
- If the fire alarm sounds, you will hear a very loud continuously ringing bell. On the instructions of the demonstrator in charge of the class, you must leave the building and assemble on the lawn by the Department of Archaeology & Anthropology. Do not stop to collect personal belongings and do not re-enter the building until the fire brigade has given the all-clear.

### Equipment and practical material

- Bench lamps must be lifted by their bases, not by the arms. Lifting by the arms can damage the pivoting mechanism.
- You will be instructed in the use of microscopes, and these instructions must be followed. Do not move microscopes at all unless strictly necessary. Dragging the microscopes causes vibration and optics misalignment.
- When using microscopes and computers, check your seating position to ensure that you are at the correct height and, to avoid eye strain, look across the lab to allow your eyes to change focus every 20 minutes or so.
- Glass microscope slides must be treated with care. They are easily broken; some are irreplaceable, and all are expensive to replace.
- Handle ALL specimens with care. Many are of museum display quality and are irreplaceable. *Do not mark or scratch them.*
- Ensure that all specimens, microscope slides, etc. are returned to the correct tray or drawer after use, and that any microscopes and bench lights are turned off before you leave the lab.

## 9. Part II Project

Those of you who go on to take Part II Earth Sciences will normally do a mapping project next summer. Due to the uncertainty related to the Covid-19 pandemic, it is too early to say whether this will go ahead as normal, or how it will be modified. However, we will adapt the field courses and mapping project such that we provide the best field education possible under the covid-related restrictions as they develop. More information will be available later in Michaelmas term.

If fieldwork goes ahead in summer 2021:

- you will be assigned a supervisor in the second half of the Lent Term based on your area.
- there will be two safety sessions relating to mapping projects, usually in February and June. Further information will be circulated nearer the time.
- you might apply to a number of University funds, to help you with the costs of fieldwork, which have closing dates early in the Lent Term.

Another option for Part II is to progress via the Physical Sciences route. By reading **Part II Physical Sciences**, you can continue to develop a broader knowledge of the sciences than a Part II single subject may provide. You can continue to study Earth Sciences via this route, and are not required to do a mapping project for this course. Instead you are required to submit a 5,000-word dissertation which is submitted in April 2021. Further information can be found on the [NST Physical Sciences website](#).

## 10. Libraries

Your College library should have all the standard textbooks from your reading lists. If not, ask them to order them. You may need the support of your Director of Studies or supervisor.

In order to adhere to social distancing rules and to keep us all safe the library will not be available to 1Bs as a study or social space.

Ordinarily you would be asked to attend an introduction to the library session in late October. This would involve a tour of the library highlighting resources available to you with an emphasis on planning for your Part II Mapping Projects. These will now be held on line via video conferencing on Tuesday 20, Wednesday 21 and Thursday 22 October between one and two o'clock in the afternoon. The dates and times of these sessions are open for discussion. A booking form will be sent for you to register the dates and times of your attendance.

Coming in to the library for browsing will not be an option, with the exception of access to the map room if absolutely necessary and by prior appointment only.

Borrowing items may be slightly more difficult than in previous years but **all items are available as before**. Contact the library for any questions or requests and to make arrangements for pick up or returns: [libraryhelp@esc.cam.ac.uk](mailto:libraryhelp@esc.cam.ac.uk) or [sih24@cam.ac.uk](mailto:sih24@cam.ac.uk) Other arrangements are being set up or looked into; e.g. a chat box on the library web pages or daily Zoom sessions. I really want to 'meet' as many of you as possible.

Please don't hesitate to contact me if you have any questions or suggestions.

Sarah Humbert  
Earth Sciences Librarian

## 11. Feedback Processes

- Your most productive route for criticisms of the course is through the current lecturer or demonstrators. This particularly applies to day-to-day hitches, which can then be rectified immediately.
- You will have the individual opportunity to comment on the courses through the on-line questionnaires after each course component. Please use this opportunity. Your responses do significantly affect our planning of the following years' course.
- The Teaching Liaison Committee has a representative from each of the courses taught in Earth Sciences, and meets about once a term. These meetings concentrate on broader problems of the structure, content and operation of courses.
- If none of these routes seems satisfactory, please feel free to contact the Earth Sciences A Course Coordinator, Alex Piotrowski (amp58@cam.ac.uk), the Teaching Support Manager, Helen Averill (hpd20@cam.ac.uk) or the Director of Teaching, Nick Butterfield (njb1005@cam.ac.uk).

### Complaint procedures

If you are unhappy with the experience you have received from the department, faculty, service or staff member, the University has a Student Complaint Procedure for you to use in order to try and resolve the situation. All information regarding the Student Complaint Procedure can be found on the [Student Complaints web page](#).

At a local level if any issues arise which need action details should be passed on to the Teaching Support Manager or discussed with your Director of Studies in the department.

### Examination review procedure

The University has robust policies in place to ensure that all examination results are accurate. However, something unusual may have taken place in the examination and you may want to check that the examiners were aware of the circumstances and that they have been taken into account. If you have any concerns about examination results you can request a review using the Examination Review Procedure, details of which can be found on the [Examination reviews web page](#).

## 12. Earth Sciences and Disability

We are committed to making our courses accessible to *all* students. You should have received help or advice about any disability that might have a substantial and long-term adverse effect on your ability to follow the course or take the examinations; for instance, dyslexia or colour blindness.

If there is any new information about any relevant disability that we should know in order to provide you with the support required to complete your course, please inform your Tutor, your College Director of Studies or Supervisor in Earth Sciences and the Teaching Administrator, Helen Averill [hpd20@cam.ac.uk](mailto:hpd20@cam.ac.uk). They will discuss with the course organisers the appropriate ways in which you can be helped to get the most out of this year's teaching.

## 13. Department of Earth Sciences: Plagiarism Statement

(This is a shortened and more subject-specific version of the University statement at <http://www.admin.cam.ac.uk/univ/plagiarism/students/statement.html>)

### Definition and scope

*Plagiarism is defined as submitting as one's own work, irrespective of intent to deceive, that which derives in part or in its entirety from the work of others without due acknowledgement.*

Plagiarism is the unacknowledged use of the work of others as if this were your own original work. It is always wrong and a breach of academic integrity, whether in supervision exercises, project reports, exam answers or published papers. The University regards plagiarism as a serious offence. The penalties for plagiarism may be severe and may lead to failure to obtain your degree. The University reserves the right to check any submitted work for plagiarism, and can do so with increasingly sophisticated software.

*The golden rule is that there should be no doubt as to which parts of your work are your own original work and which are the rightful intellectual property of someone else.*

Plagiarism may be due to copying (using another person's language or ideas as if they are your own) or collusion (where collaboration is concealed to gain unfair advantage).

### Methods and media

Methods of plagiarism include:

- Quoting directly another person's language, data or illustrations without clear indication that the authorship is not your own and without due acknowledgement of the source.
- Paraphrasing the critical work of others without due acknowledgement. Changing words or their order does not avoid plagiarism, if you are using someone else's original ideas without acknowledgement.
- Using ideas taken from someone else without reference to the originator.
- Cutting and pasting from the Internet to make a pastiche of online sources.
- Colluding with another person, including another candidate (other than as explicitly permitted for joint project work).
- Submitting as your own work research that has been contributed by others to a joint project.
- Submitting work that has been done in whole or in part by someone else on your behalf (such as commissioning work from a professional agency);
- Submitting work that you have already submitted for a qualification at another institution or for a publication without declaring it and clearly indicating the extent of overlap.
- Deliberately reproducing someone else's work in a written examination.

Plagiarism can occur with respect to all types of sources and in all media:

- not just text, but also figures, photographs, computer code etc,
- not just material published in books and journals, but also downloaded from websites or drawn from other media,
- not just published material but also unpublished works, including lecture handouts and the work of other students.

## Avoiding plagiarism

The conventions for avoiding plagiarism in the Earth Sciences are as follows:

- When presenting the views and work of others, cite the source in ways such as ‘...as shown by Jones (1938)’.
- If quoting a secondary source, to which you have not gained access, make this clear in ways such as ‘...Hailstone (1802) as discussed by Marr (1916, p. 176).’
- If quoting text verbatim, use quotation marks or indented text and a citation; e.g. “Many of the great movements above described, appear to have been produced by an action both violent and of short duration.” (Sedgwick 1836).
- If using an exact or redrawn copy of a figure from another work, cite the work in the figure caption; e.g. ‘redrawn from Hughes (1866).’
- If incorporating data into a figure from another source, cite the source in the figure caption; e.g. ‘orientation data taken from Whittington (1938).’
- Collaboration with staff or other students during project research may arise during, for instance, Part II or Part III projects. If there is likely to be any doubt as to who contributed which parts of submitted work, make this clear in the text wherever necessary; e.g. ‘Prof. I.N. McCave supplied the comparative data on contourites in table 3.’
- Wherever a source is cited, the full bibliographic reference – including title, journal, volume and page numbers – must be given at the end of the report or essay, except in an essay done in exam conditions. Candidates are not required to make full citations in written examinations but should reference where appropriate.

## Checking for Plagiarism

The University subscribes to Turnitin UK software which provides an electronic means of checking work for originality and is widely used in UK universities. Visit the Departmental website to find the document explaining how Turnitin UK will be used by the Department of Earth Sciences and which explains the implications of submitting your work to the software. Written work will only be checked if a candidate is suspected of plagiarism.

Any graduate student submitting written work suspected of plagiarism may also have their material checked using Turnitin.

## 14. NST Approved Calculators

For Natural Sciences Tripos examinations Parts IA, IB, II and III (where a calculator is allowed), you will be permitted to use only the standard University calculator CASIO fx 115 (any version), CASIO fx 570 (any version) or CASIO fx 991 (any version). Each such calculator must be marked in the approved fashion.

Standard University calculators, marked in the approved fashion, will be on sale at the beginning of Full Michaelmas Term 2020 at £20 for the fx991ES plus from the Department of Chemistry, Part IA Laboratory preparation room or from the Main Stores in the Bragg Building at the Cavendish for around the same price. You are strongly advised to purchase a calculator at the beginning of term.

Students already possessing a CASIO fx 115 (any version) or CASIO fx 570 (any version) or Casio fx991 (any version) will be able to have it marked appropriately, at no cost in the Department of Chemistry, Part IA Laboratory. Calculators meeting these criteria can be marked in term time right up to the beginning of the exam period, not just in the Michaelmas term.