Department of Earth and Planetary Sciences

DEPARTMENT HANDBOOK AND DESCRIPTION OF MODULES 2017/18

This pamphlet should be read in conjunction with the College Prospectus and the information it contains is subject to the terms and conditions set out in the College Prospectus
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Introduction

This pamphlet provides a guide to the BSc and Certificate programmes given in the Department of Earth and Planetary Sciences at Birkbeck. The prerequisites defined for each programme are in terms of modules at Birkbeck; exemptions and equivalent modules elsewhere can be considered.

Modules Available for Study

This is a comprehensive list of modules we offer. You will find further information about these modules in the second part of this document (pages 35 onwards). Modules are listed according to level, with introductory modules listed as “first year” (Level 4) to advanced modules listed as “third and fourth year” (Level 6). Keep in mind that depending on which programme you are enrolled on, different restrictions and requirements may apply to your module choices. See below for details on compulsory modules for our BSc and Certificate programs. The modules listed mostly have a value of 15 credits (i.e. half-modules), except where indicated otherwise.

1st year
EASC001S4 Introduction to Geology (30 credits)
EASC057H4 Foundations of Mineralogy
EASC038H4 Introduction to Geochemistry
EASC042H4 Invertebrate Palaeontology
EASC050H4 Earth History
EASC053H4 Assessed Field Techniques 1
SCES010H5 Geology of the Solar System I
SCES001H4 Foundations of Astronomy

2nd year
EASC005H5 Geophysics
EASC011H5 Structural Geology I
SCES005H5 Igneous Petrology
EASC006H5 Metamorphic Petrology
SCES008H5 Principles of Sedimentology
EASC054H5 Assessed Field Techniques 2
EASC064H5 Introduction to Astrobiology
EASC074H5 Forensic Geology
SCES010H5 Geology of the Solar System 2

3rd and 4th year
EASC018H6 Structural Geology II
EASC021H6 Advanced Palaeontology
EASC029H6 Magmatic Processes
EASC059H6 Volcanism of the Solar System
EASC041H6 Global Tectonics
EASC048H6 Earth's Resources & Raw Materials
EASC055H6 Assessed Field Techniques 3
EASC039H6 Palaeoecology
EASC044H6 Geological Hazards
EASC045H6 Chemistry and Pollution of Water, Soil and Air
EASC066H6 Tectonic Geomorphology
EASC056H6 Assessed Field Techniques 4
SCES014H6 Palaeoclimatology
SCES018H6 Petroleum Geology
SCES022H6 Physical Principles of Astronomy
SCES002H6 Comets, Asteroids and Meteorites
SCES019H6 Scientific Computing and Data Modelling (New 2016/17)
SCES036H6 Environmental Isotopes
SCES035H6 Remote Sensing and Planetary Surfaces
These modules are independent study modules, usually taken in the 3rd year of the 3-year (UCAS) programme, 3rd and 4th year of the 4-year programme, and 5th and 6th year of the decelerated 6-year degree programme, and are specific to different degree programmes:

- Mapping & Thesis BSc Geology
- Project BSc Earth Sciences
- Environmental Geology Project
- Project BSc Geology
- Project BSc Planetary Science with Astronomy
- Advanced Topics in Planetary Science
- Planetary Science Field Work
Programmes of Study in the Department of Earth and Planetary Sciences

All of the degrees offered by the Department conform to the Common Awards Scheme. Degrees are made up of 15, 30 and 60 credit modules. Modules are assessed at Levels 4, 5 and 6. **The BSc Degree is made up of 360 credits.** More on the policies and regulations of the College can be found at: [http://www.bbk.ac.uk/registry/policies/regulations](http://www.bbk.ac.uk/registry/policies/regulations)

**BSc degrees**

We offer four different BSc degrees:
- BSc Geology (accredited by the Geological Society) (This can be studied via a 4-year route, a decelerated 6-year route, or by a 3-year full-time UCAS route)
- BSc Environmental Geology
- BSc Earth Sciences
- BSc Planetary Science with Astronomy (This can be studied via a 4-year part-time route or by a 3-year full-time UCAS route)

**Certificates of Higher Education**

We offer a range of Certificates designed to enhance expertise in particular subject areas within the Earth and Planetary Sciences. Certificate students may transfer up to a BSc degree program at any point before completion of their Certificate requirements. The certificates offered are:
- Certificate in Geology
- Certificate in Planetary Science with Astronomy
- Certificate in Mineralogy and Volcanology
- Certificate in Earth History and Palaeontology
- Certificate in Forensic Geology

**Graduate Certificates**

We offer Graduate certificates as follows for students who already have a BSc degree:

- **Graduate Certificate in Geology**
The Graduate Certificates are 2-year programmes and you will need to gain 60 credits. This will normally include four 15-credit modules from Years 3 and 4 of the BSc Geology degree. Please note that advanced modules are usually taught in alternate years and will not be available every year.

- **Graduate Certificate in Environmental Geology**
The Graduate Certificate in Environmental Geology is a 2-year programme and you will need to gain 60 credits. This will normally include four 15-credit modules from Years 3 and 4 of the BSc Environmental Geology. Advanced modules are usually taught in alternate years and will not be available every year.

- **Graduate Certificate in Planetary Science and Astronomy**
The Graduate Certificate in Planetary Science and Astronomy is a 2-year programme and you will need to gain 60 credits. This will normally include four 15-credit modules from Years 3 and 4 of the BSc Planetary Sciences with Astronomy. Advanced modules are usually taught in alternate years and will not be available every year.

**Non-degree students**

Non-degree students may take exams, but their credits do not count toward an academic qualification. Non-degree students who decide they want to transfer up to a BSc programme should do so as soon as possible. There are limits on the number of modules studied at a non-degree level that can be transferred to a degree programme, any transfer will be subject to approval by the Degrees Committee. The following shows a flowchart outlining possible progression routes through the various study programmes toward completion. Below you will find more detailed information about programme requirements for BSc degrees and Certificates.
Prerequisites
Several modules on our Programmes have prerequisites. These are modules you must pass before taking another module at a more advanced level. If you have not passed a prerequisite for a module, you will not be allowed to take the module under any circumstances.
Entry

- Non-degree study
- Credit for previous study
- Certificate programmes (120 credits of study)

BSc degree programmes: four options

1. BSc Earth Sciences
   - 12 full modules (at least 5 at advanced Level 6) including Project BSc Earth Sciences, with no fieldwork requirement. Usually taken by distance learning.

2. BSc Geology (accredited degree)
   - (3 years full-time [UCAS], 4 years part-time [decelerated]). 12 full modules (at least 5 at advanced Level 6), including Assessed Field Techniques, Map and Thesis / Field-based project.

3. BSc Environmental Geology
   - 12 full modules (at least 5 at advanced Level 6), including Assessed Field Techniques, an Environmental Geology BSc project, and 105 credits of environmental geology modules.

4. BSc Planetary Science with Astronomy
   - (3 years full-time [UCAS], 4 years part-time [decelerated]). 12 full modules (at least 5 at advanced Level 6), including a planetary science project.
# BSc Geology 4 Year Part-Time

The BSc Honours degree in Geology is accredited by the Geological Society. It can be taken in 3 years (UCAS entry), 4 years (normal, part-time) or 6 years (decelerated). Students take a total of twelve full modules, of which at least 5 must be at advanced level (3rd/4th year optional modules). Students can take a minimum of three of the four Assessed Field Techniques 15 credit modules plus the 60-credit module of either Map & Thesis or field-based Geology Project which are compulsory.

Some modules at 1st and 2nd year level are designed for other degree programmes, and are not part of the compulsory curriculum for BSc Geology students. It is possible for BSc Geology students to take these modules if they wish, but they may not substitute these modules for any of the required modules listed below, and students are advised to consult with their tutor before taking any optional 1st/2nd year modules, since grades earned may not ultimately count toward their degree. The modules available are as follows (except where indicated, most are ½ modules whose values are 15 credits). Note that students on the 6-year decelerated degree will only take the modules indicated with a * in their 1st year (total of 60 credits), and will take modules indicated with a ^ in their 2nd year (60 credits including AFT1). They will complete their 3rd year by taking modules indicated (60 credits, including AFT2), and will take Geophysics in their 4th year. They are expected to undertake their Map and Thesis, or Field-based Project, in their 5th/6th years, together with optional modules.

**Students are expected to attend Assessed Field Techniques I and to complete the registration process for this module in good time. This does require the payment of a deposit to ensure hotel places are secured. Students who do not complete the registration process for Assessed Field Techniques I by the specified date will be transferred to the BSc Earth Sciences which does not require students to attend any of the Assessed Field Technique classes as compulsory modules.**

<table>
<thead>
<tr>
<th>Compulsory 1st year modules (given every year)</th>
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<tbody>
<tr>
<td>EASC001S4 Introduction to Geology (30 credits)*</td>
</tr>
<tr>
<td>EASC057H4 Foundations of Mineralogy^</td>
</tr>
<tr>
<td>EASC038H4 Introduction to Geochemistry^</td>
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<tr>
<td>EASC042H4 Invertebrate Palaeontology*</td>
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<tr>
<td>EASC050H4 Earth History*</td>
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<tr>
<td>EASC053H4 Assessed Field Techniques 1^</td>
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<td>SCES001H4 Foundations of Astronomy</td>
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<th>Compulsory 2nd year modules, given every year</th>
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<td>EASC005H5 Geophysics</td>
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<td>EASC011H5 Structural Geology I</td>
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<td>SCES005H5 Igneous Petrology</td>
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<tr>
<td>EASC006H5 Metamorphic Petrology</td>
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<tr>
<td>SCES008H5 Principles of Sedimentology</td>
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<td>EASC054H5 Assessed Field Techniques II</td>
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<td>EASC074H5 Forensic Geology</td>
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<td>SCES010H5 Geology of the Solar System 2</td>
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These modules are given in alternate years:

3rd and 4th year

- EASC018H6 Structural Geology II
- EASC021H6 Advanced Palaeontology
- EASC029H6 Magmatic Processes
- EASC041H6 Global Tectonics
- EASC048H6 Earth's Resources & Raw Materials
- EASC055H6 Assessed Field Techniques 3 (compulsory)
- EASC059H6 Volcanism in the Solar System
- EASC039H6 Palaeoecology
- SCES014H6 Palaeoclimatology
- EASC044H6 Geological Hazards
- EASC045H6 Chemistry and Pollution of Water, Soil and Air
- EASC066H6 Tectonic Geomorphology
- SCES018H6 Palaeoclimatology
- SCES002H6 Comets, Asteroids and Meteorites
- SCES019H6 Scientific Computing and Data Modelling
- SCES036H6 Environmental Isotopes
- SCES035H6 Remote Sensing and Planetary Surfaces
- SCES037H6 Metamorphic Processes
- EASC056H6 Assessed Field Techniques 4

Compulsory 4th year module

Either

- SCES015D6 Mapping & Thesis (60 credits)
Or

- SCES021D6 Project for BSc Geology (60 credits)

**BSc Geology 3-Year Full Time**

Compulsory 1st year modules (given every year)

1st year

- EASC001S4 Introduction to Geology (30 credits)
- EASC057H4 Foundations of Mineralogy
- EASC038H4 Introduction to Geochemistry
- EASC042H4 Invertebrate Palaeontology
- EASC050H4 Earth History
- EASC053H4 Assessed Field Techniques 1

Compulsory 2nd year modules, given every year

2nd year

- SCES005H5 Igneous Petrology
- SCES006H5 Metamorphic Petrology
- SCES008H5 Principles of Sedimentology
- EASC011H5 Structural Geology I
- EASC005H5 Geophysics
- EASC054H5 Assessed Field Techniques 2

Compulsory 3rd year modules, given every year

3rd year

- SCES005H5 Igneous Petrology
- SCES006H5 Metamorphic Petrology
- SCES008H5 Principles of Sedimentology
- EASC011H5 Structural Geology I
- EASC055H6 Assessed Field Techniques 3
OR
- EASC056H6 Assessed Field Techniques 4
- SCES015D6 Map and Thesis
To fulfil The Geological Society requirement for accreditation, full-time BSc Geology students need to take at least three AFT modules and complete the Map and Thesis which will give you enough days in the field to qualify for membership. Therefore, students enrolled on the three year BSc Geology Degree are normally required to register for the Map and Thesis rather than the Geology Project.

These modules are given in alternate years – you would take modules from this list in the second and third year.

- **2nd year**
  - EASC018H6  Structural Geology II
  - EASC021H6  Advanced Palaeontology
  - EASC041H6  Global Tectonics
  - EASC048H6  Earth's Resources & Raw Materials
  - EASC055H6  Assessed Field Techniques 3 \(\text{(compulsory)}\)
  - EASC059H6  Volcanism in the Solar System
  - EASC039H6  Palaeoecology
  - SCES018H6  Petroleum Geology
  - SCES036H6  Environmental Isotopes
  - SCES035H6  Remote Sensing and Planetary Surfaces
  - SCES037H6  Metamorphic Processes

- **3rd year**
  - EASC029H6  Magmatic Processes
  - EASC045H6  Chemistry and Pollution of Water, Soil and Air
  - EASC066H6  Tectonic Geomorphology
  - SCES014H6  Palaeoclimatology
  - SCES044H6  Geological Hazards
  - EASC049H6  Palaeoecology
  - SCES002H6  Comets, Asteroids and Meteorites
  - SCES019H6  Scientific Computing and Data Modelling
  - SCES019H6  Scientific Computing and Data Modelling
  - SCES055H6  Assessed Field Techniques 4

**Changing from 4-year degree to 3-year degree**

Students on the part-time BSc Degree in Geology who have achieved an overall grade of a 2:1 in their first year modules may be allowed to transfer to the full-time BSc Degree. Students interested in doing this are required to discuss it first with their Programme Director (Professor Hilary Downes) and should note the following:

(i) The workload will increase from 90 credits to 120 credits per year (i.e. from three to four evenings per week);

(ii) The annual fee will increase, and there are also strict limits on the amount of time that full-time students are allowed to work during their studies. Students should therefore seek advice from the Student Funding Advice Team regarding fee and student loan status before transferring to the full-time programme. Information can be found at: [http://www.bbk.ac.uk/mybirkbeck/finance/studentfinance/contact-us](http://www.bbk.ac.uk/mybirkbeck/finance/studentfinance/contact-us)
**BSc Environmental Geology**

The requirements for the BSc Environmental Geology degree are similar to those of the BSc Geology, outlined above, with some exceptions. The programme normally extends over four years. Students take a total of twelve modules, of which at least 5 must be at an advanced level.

It is compulsory to take the four Assessed Field Techniques classes. While the 3rd/4th year modules are optional, it is compulsory to take at least three15-credit modules of Environmental Geology. The Environmental Geology modules are: Earth’s Resources and Raw Materials, Tectonic Geomorphology, Geological Hazards, and Chemistry and Pollution of Water, Soil and Air. The module “Environmental Geology Project” is also compulsory.

Please refer to the list outline under “BSc Geology” for the modules available from first year to fourth year level on the BSc Environmental Geology. Please also note that the same restrictions apply to students wishing to take any of the optional 1st or 2nd year modules.

**BSc Earth Sciences**

The BSc Earth Sciences is a degree, designed particularly with the Distance Learner in mind. The main difference between this degree and the BSc Geology is that there is no specified fieldwork requirement. Students take a total of 12 modules, of which at least 5 must be at an advanced level.

Some modules at 1st and 2nd year level are designed for other degree programs, and are not part of the compulsory curriculum for BSc Earth Science students. It is possible for BSc Earth Science students to take these modules if they wish, but they may not substitute these modules for any of the required modules listed below, and students are advised to consult with their tutor before taking any optional 1st/2nd year modules, since grades earned may not ultimately count toward their degree. The modules available are as follows (module value 15 credits except where indicated).

**Compulsory 1st year modules (given every year)**
- EASC001S4  Introduction to Geology (30 credits)
- EASC057H4  Foundations of Mineralogy
- EASC038H4  Introduction to Geochemistry
- EASC042H4  Invertebrate Palaeontology
- EASC050H4  Earth History

**optional 1st year modules**
- SCES010H5  Geology of the Solar System I
- EASC053H4  Assessed Field Techniques 1

**Compulsory 2nd year modules, given every year**
- EASC005H5  Geophysics
- EASC011H5  Structural Geology I
- SCES005H5  Igneous Petrology
- SCE006H5  Metamorphic Petrology
- EASC013S5  Principles of Sedimentology

**optional 2nd year modules**
- EASC064H5  Introduction to Astrobiology
- EASC054H5  Assessed Field Techniques 2
- EASC074H5  Forensic Geology
- SCES010H5  Geology of the Solar System 2
The following modules are given in alternate years:

<table>
<thead>
<tr>
<th>Year</th>
<th>Module Code</th>
<th>Module Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3rd</td>
<td>EASC018H6</td>
<td>Structural Geology II</td>
</tr>
<tr>
<td>4th</td>
<td>EASC021H6</td>
<td>Advanced Palaeontology</td>
</tr>
<tr>
<td></td>
<td>EASC029H6</td>
<td>Magmatic Processes</td>
</tr>
<tr>
<td></td>
<td>EASC041H6</td>
<td>Global Tectonics</td>
</tr>
<tr>
<td></td>
<td>EASC048H6</td>
<td>Earth's Resources &amp; Raw Materials</td>
</tr>
<tr>
<td></td>
<td>EASC055H6</td>
<td>Assessed Field Techniques 3</td>
</tr>
<tr>
<td></td>
<td>EASC059H6</td>
<td>Volcanism of the Solar System</td>
</tr>
<tr>
<td></td>
<td>SCES002H6</td>
<td>Comets, Asteroids and Meteorites</td>
</tr>
<tr>
<td></td>
<td>EASC039H6</td>
<td>Palaeoecology</td>
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<tr>
<td></td>
<td>SCES014H6</td>
<td>Palaeoclimatology</td>
</tr>
<tr>
<td></td>
<td>EASC044H6</td>
<td>Geological Hazards</td>
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<tr>
<td></td>
<td>EASC045H6</td>
<td>Chemistry and Pollution of Water, Soil and Air</td>
</tr>
<tr>
<td></td>
<td>EASC066H6</td>
<td>Tectonic Geomorphology</td>
</tr>
<tr>
<td></td>
<td>EASC056H6</td>
<td>Assessed Field Techniques 4</td>
</tr>
<tr>
<td></td>
<td>SCES018H6</td>
<td>Petroleum Geology</td>
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<tr>
<td></td>
<td>SCES019H6</td>
<td>Scientific Computing and Data Modelling (new 2016/17)</td>
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<td></td>
<td>SCES036H6</td>
<td>Environmental Isotopes</td>
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<tr>
<td></td>
<td>SCES035H6</td>
<td>Remote Sensing and Planetary Surfaces</td>
</tr>
<tr>
<td></td>
<td>SCES037H6</td>
<td>Metamorphic Processes</td>
</tr>
</tbody>
</table>

Compulsory 4th year module

SCES016D6 Project for Earth Science (60 credit)

**BSc Planetary Science with Astronomy 4 Year**

This degree is designed to give students a broad introduction to the Earth and Planetary sciences within their wider astronomical context. The programme includes a strong emphasis on the geological investigations of the planets and moons of the Solar System, as well as introductory modules on astronomy and astrobiology (the search for life in the Universe). The BSc Planetary Science with Astronomy is available as a 4 year part-time or 3 year full-time programme.

**Changing from 4-year degree to 3-year degree**

Students on the part-time BSc Degree in Planetary Science with Astronomy who have achieved an overall grade of a 2:1 in their first year modules may be allowed to transfer to the full-time BSc Degree. Students interested in doing this are required to discuss it first with their Programme Director (Professor Ian Crawford) and should note the following:

(i) The workload will increase from 90 credits to 120 credits per year (i.e. from three to four evenings per week);
(ii) Additionally, because the first year of the full-time B.Sc. programme also contains 120 credits, it will be necessary to take the two 15-credit modules not taken in the first year during the remaining two years. Because of time-table clashes, it is very likely that these will have to be done in a ‘distance learning’ mode (i.e. through Moodle, but without face-to-face contact with the lecturer).
(iii) The annual fee will increase, and there are also strict limits on the amount of time that full-time students are allowed to work during their studies. Students should therefore seek advice from the Student Funding Advice Team regarding fee and student loan status before transferring to the full-time programme. Information can be found here: [http://www.bbk.ac.uk/mybirkbeck/finance/studentfinance/contact-us](http://www.bbk.ac.uk/mybirkbeck/finance/studentfinance/contact-us)
All students on this degree program study the same modules in the first two years and then choose from a wide array of options in their final two years. Students take a total of twelve modules, of which at least 5 must be at an advanced level. The modules available are as follows (module values are 15 credits except where indicated).

**Compulsory 1st year modules (given every year)**
- EASC001S4 Introduction to Geology (30 credits)
- SCES010H4 Geology of the Solar System I
- EASC038H4 Introduction to Geochemistry
- EASC057H4 Foundations of Mineralogy
- SCES001H4 Foundations of Astronomy

**Optional 1st year 15-credit module (given every year)**
- EASC054H5 Assessed Field Techniques I

**Compulsory 2nd year modules, given every year**
- SCES010H5 Geology of the Solar System II
- SCE005H5 Igneous Petrology
- EASC064H5 Introduction to Astrobiology
- EASC005H5 Geophysics

**Optional modules**
- EASC050H5 Earth History
- EASC011H5 Structural Geology I
- EASC054H5 Assessed Field Techniques 1 or 2
- PHAS1130 Observational Astronomy (at UCL)
- SCE006H5 Metamorphic Petrology

**3rd and 4th years**

**Compulsory 3rd/4th year modules**
- EASC059H6 Volcanism in the Solar System
- SCES002H6 Comets, Asteroids and Meteorites
- SCES003H6 Scientific Computing and Data Modelling
- SCES022H6 Physical Principles of Astronomy
- SCES035H6 Remote Sensing and Planetary Surfaces
- SCES047H6 Exploration and Modelling of Planetary Interiors
- EASC072H6 Advanced Topics in Planetary Science
- SCES016D6 Project for Planetary Sciences with Astronomy (60 credits)

**Note:** Students on the Part-time Planetary Science with Astronomy Degree will take Geology of the Solar System II in year two.

**Optional 3rd and 4th year modules given in alternate years:**
- EASC018H6 Structural Geology II
- EASC029H6 Magmatic Processes
- EASC041H6 Global Tectonics
- EASC048H6 Earth's Resources & Raw Materials
- EASC055H6 Assessed Field Techniques 3
- EASC044H6 Geological Hazards
- EASC045H6 Chemistry and Pollution of Water, Soil and Air
You may also take modules in other subjects, including optional field modules, to complement your geological studies or to broaden your scientific background and skills.

**BSc Planetary Science with Astronomy 3 Year Full Time**

All students on this degree programme study the modules over three years and will choose from a wide array of options in year two. Students take a total of twelve modules, of which at least 5 must be at an advanced level. The modules available are as follows (module values are 15 credits except where indicated). Students take 120 CATS per year. **Students on the full time BSc Planetary Science with Astronomy Degree will attend classes four evenings a week and will take Geology of the Solar System I and II in their first year.**

*Compulsory 1st year modules (given every year)*
- EASC001S4 Introduction to Geology (30 credits)
- SCES010H4 Geology of the Solar System I
- SCES010H5 Geology of the Solar System II
- EASC038H4 Introduction to Geochemistry
- EASC057H4 Foundations of Mineralogy
- SCES001H4 Foundations of Astronomy

*Choose one Optional 1st year 15-credit modules (given every year)*
- EASC054H5 Assessed Field Techniques I
- EASC050H4 Earth History

*Compulsory 2nd year modules, given every year*
- SCES005H5 Igneous Petrology
- EASC064H5 Introduction to Astrobiology
- EASC005H5 Geophysics
- SCES002H6 Comets, Asteroids and Meteorites (offered alternate years)
  Or
- EASC059H6 Volcanism in the Solar System (offered alternate years)
- SCES003H6 Scientific Computing and Data Modelling (offered alternate years)
  Or
- SECS022H6 Physical Principles of Astronomy (offered alternate years)
- SCES047H6 Exploration and Modelling of Planetary Interiors (offered alternate years)
  Or
- SCES035H6 Remote Sensing and Planetary Surfaces (offered alternate years)
All three pairs of modules listed ‘Or’ above are compulsory modules but are offered in alternate years. For each pair, students will take both modules (one in year 2 and one in year 3), but the order will depend on which module of the pair is on when the student reaches year 2.

Two Optional 2nd Year modules:

SCES008H5  Principles of Sedimentology
EASC011H5  Structural Geology I
EASC054H6  Assessed Field Techniques 2
PHAS11130  Practical Astronomy at UCL (subject to availability)
SCE006H5  Metamorphic Petrology
SCES019H6  Scientific Computing and Data Modelling (available 2016/17)
SCES048H6  Field class for Planetary Science

3rd year

Compulsory 3rd year modules

SCES002H6  Comets, Asteroids and Meteorites (offered alternate years)
    Or
EASC059H6  Volcanism in the Solar System (offered alternate years)

SCESS03H6  Scientific Computing and Data Modelling (offered alternate years)
    Or
SECS022H6  Physical Principles of Astronomy (offered alternate years)

SCES047H6  Exploration and Modelling of Planetary Interiors (offered alternate years)
    Or
SCES035H6  Remote Sensing and Planetary Surfaces (offered alternate years)

EASC072H6  Advanced Topics in Planetary Science
SCES016D6  Project for Planetary Sciences with Astronomy (60 credits)
Certificates

Most of our Certificates of Higher Education require students to study over a period of 2 years, earning a total of 120 credits. Most of the modules are 15 credits with some at 30 credits. Some modules are compulsory depending on the subject specialisation, and some modules are optional. Students may transfer from certificate to BSc level at any time prior to completion of the modules designated for the certificate.

Certificate in Geology

This is a two year programme. Students need to gain 120 credits and can choose modules from year 1 and 2 of the BSc Geology degree. This will normally include one 30 credit module, Introduction to Geology and six 15 credit modules from the first and second years of the BSc Geology degree.

Year 1 (60 credits total)
- Introduction to Geology (30 credits)
- Foundations of Mineralogy (15 credits)
- Earth History (15 credits)

Year 2 (60 credits total)
- Igneous Petrology
- Metamorphic Petrology
- Principles of Sedimentology

plus choice from
- Introduction to Geochemistry
- Invertebrate Palaeontology
- Geophysics
- Structural Geology I
- Assessed Field Techniques I

Certificate in Planetary Science with Astronomy

This is a two year programme. Students need to gain 120 credits and can choose modules from year 1 and 2 of the BSc Planetary Science with Astronomy degree.

Year 1:
- Introduction to Geology (30 credits)
- Geology of the Solar System I (15 credits)
- Foundations of Astronomy (15 credits)

Year 2:
Core modules: Geology of the Solar System II, Introduction to Astrobiology
Plus a choice of two 15-credit modules from: Introduction to Geochemistry; Foundations of Mineralogy; Geophysics; Global Tectonics; Introduction to Astrobiology; Assessed Field Techniques; Volcanism in the Solar System.

Certificate in Earth History and Palaeontology

Study over two years – total 120 credits.

Year 1
Compulsory modules: Introduction to Geology (30 credits); Earth History (15 credits); Invertebrate Palaeontology (15 credits)

Year 2
One compulsory 15-credit module: Principles of Sedimentology (15 credits)
Choice of three 15-credit modules from: Advanced Palaeontology, Palaeoecology, Tectonic Geomorphology, or Introduction to Astrobiology.
Certificate in Mineralogy and Volcanology

Study over two years – total 120 credits.

Year 1:
Compulsory modules: Introduction to Geology (30 credits); Introduction to Geochemistry (15 credits); Foundations of Mineralogy (15 credits).

Year 2
Two compulsory 15-credit modules: Igneous Petrology (15 credits); Metamorphic Petrology (15 credits)

Choice of two 15 credit modules from: Magmatic Processes, Volcanism in the Solar System, or Earth’s Resources and Raw Materials.

Certificate in Forensic Geology

Study over two years – total 120 credits.

Year 1
Two compulsory modules: Introduction to Geology (30 credits), Introduction to Geochemistry (15 credits), Invertebrate Palaeontology (15 credits)

Year 2
Two compulsory modules: Principles of Sedimentology (15 credits) Palaeoecology (15 credits); Forensic Geology (15 Credits) plus one option at 15 credits.

Graduate Certificate in Geology

You can choose a total of 4 modules (60 credits) from Years 3 and 4 of the BSc Geology degree. Graduate Certificate modules are taught in alternate years and will not be available every year.

Graduate Certificate in Environment Geology

You can choose modules from Years 3 and 4 of the BSc Environmental Geology degree. This is a two year programme. Students need to gain 60 credits. This will normally include four 15 credit modules. Graduate Certificate modules are taught in alternate years and will not be available every year.
General Information for Students in Earth and Planetary Sciences

The recommended reading lists given are not intended to be comprehensive, and in advanced modules in particular further references (including original literature) will be given. For 3rd & 4th year modules it is essential for students to begin relevant reading during the summer vacation. Books suggested for purchase by students are indicated by an asterisk, but in some modules the relative merits of possible alternatives will be discussed by the lecturer.

Normal teaching is in the evenings between 6pm and 9pm, and the normal pattern is for a lecture (about one hour) to be followed by related practical work after a short break. Graduate demonstrators are employed to assist with larger practical classes. Classes are held each week during the autumn and spring terms. Our 15-credit modules consist of 11 weeks of lectures during either the autumn or spring term, followed by revision for each module in the summer term. Friday evenings are reserved for consolidation, revision and study skills classes, and departure for field classes. Additional reading, unsupervised study and practical work, and submission of essays etc will be necessary if a module is to be completed satisfactorily. Examinations are usually held in May and June during the day.

Tutorial arrangements
Students entering the first year of the degree are encouraged to consult the Admissions Tutor (Dr Charlie Underwood) should difficulties or problems arise. Following consultations during the second year of the degree, students are assigned to a member of the academic staff who will act as adviser throughout the remainder of the degree. The same member of academic staff will also supervise the assigned student's work in their Mapping & Thesis or Project. Students entering directly the 2nd or 3rd year of the degree will be immediately assigned to an adviser/supervisor.

Fieldwork
For some modules weekend field classes may be organised. Longer field classes during the Easter vacation are generally year-based rather than related to a specific module.

Easter Field Classes
Easter field classes form an integral part of the BSc Geology and BSc Environmental Geology. Apart from exceptional circumstances, which should be reported to the undergraduate tutor, the department requires all BSc Geology and Environmental Geology students to attend three such field classes during their programme. (This will not apply to the BSc in Earth Sciences or BSc in Planetary Science with Astronomy). Field-class attendance and performance will contribute to the 15-credit modules of Assessed Field Techniques.

Safety on fieldwork
Fieldwork is an activity which involves some special risks and hazards as it takes students onto coastal cliffs and high mountains and into rivers, quarries and mines. Consequently it is vital that all students read and follow the safety procedure outlined in the safety material provided to them. Students should also be familiar with the Department Fieldwork Safety Code of Practise. All students should submit their signed Student Declaration of Safety Information to the Department Administrator before they attend any field classes.

Exams
Exams are held in the daytime. Please ensure you have made appropriate arrangements for taking leave during the examination period.
EXAMINATIONS

INTRODUCTION
The following describes how degree programmes in Geology, Environmental Geology, Earth Sciences, and Planetary Sciences with Astronomy are examined, and explains the Scheme for the Award of Honours for BSc degrees at Birkbeck College.

The examination of degree programmes are the responsibility of the College Sub-Board of Examiners in Geology. The Sub-Board includes as Internal (College) members who are the academic staff. There are also three Visiting Examiners, of whom one is from another College of the University of London (the Intercollegiate Examiner) and the other two are from another University. The Geology Sub-Board reports to the College Board of Examiners for the BSc Degree, and the Visiting Examiners also report independently to the College and the University.

Exams are normally held in the Summer term in May and early June during the day (morning or afternoon). The exam timetable is set by College Exams office and may be held in College or in the Department.

Please ensure you have made appropriate arrangements for taking leave during the examination period.

STRUCTURE OF THE BSc DEGREES
The BSc programmes are modular in structure, with the subject matter organised into 30-credit or 15-credit modules. Students take 12 full modules (360 credits) of which 5 must be taken at an Advanced level, and each module or half-module is examined separately. The College Boards and Sub-Boards normally require all finalist candidates to undergo an oral examination (“viva”) as described below.

STRUCTURE OF MODULE EXAMINATIONS
The detailed structure of the examination varies from one module to another. With the exception of the field- or project-based module, there is normally an unseen written Theory paper and there is often also a Practical paper (copies of past papers can be downloaded from the College Library). For many modules there is also assessment of course-work (e.g. essays, project report, laboratory notebooks). Information about module examination elements and their relative weighting (% of total marks) will be given to students during the module.

SETTING EXAMINATIONS
For each module the examination is set by the teacher(s) with responsibility for the module. Each question and the balance of the examination are carefully vetted by the Sub-Board of Examiners and independently by the Visiting Examiners.

MARKING EXAMINATIONS
Marking of all examination scripts is carried out by two Internal examiners who act independently and then agree marks. The scale of marks used is the College Common Scale, which specifies the following categories:

<table>
<thead>
<tr>
<th>Honours Class 1</th>
<th>70% and above</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honours Class 2i</td>
<td>60%-69%</td>
</tr>
<tr>
<td>Honours Class 2ii</td>
<td>50%-59%</td>
</tr>
<tr>
<td>Honours Class 3</td>
<td>40%-49%</td>
</tr>
<tr>
<td>Fail</td>
<td>25%-39%</td>
</tr>
<tr>
<td>Bad Fail</td>
<td>24% and below</td>
</tr>
</tbody>
</table>
A description of what is required for the various ranges of marks is shown below:

First class

(80-100)
Outstanding answer, at a level of sophistication far beyond that of most candidates. Evidence of wide reading, synthesis, criticism, quotations of recent literature, own opinion. Exceptionally clear, well structured logical answer.

First class

(70-79)
Excellent answer, sophisticated and extremely clear. Well structured, well written and logical, with clear evidence of background reading.

Upper Second

(60-69)
Competent and almost complete answer, well presented, accurate recall, clear understanding of material. May contain some evidence of background reading.

Lower Second

(50-59)
Clear, reasonably complete answer, good recall of material. Presentation and organisation not as good as that of an Upper Second, and answer is not as comprehensive.

Third

(40-49)
An incomplete answer, partial recall. Some evidence of understanding. May suffer from poor organisation. May contain irrelevancies and omissions.

Fail

(25-39)
Inaccurate answer, much may be irrelevant. Little evidence of understanding.

Bad Fail

(0-24)
Totally inaccurate or irrelevant answer; may be very short or incoherent; no evidence of understanding. Individual correct facts may attract marks.

The marked scripts are then assessed by one of the Visiting Examiners, who ensures that the Internal Examiners have acted fairly and that the standards are comparable with those elsewhere in the British University system. The marks for each element of the module examination (Theory paper, Practical paper, course-work as appropriate) are then combined to produce an overall percentage mark for the module.

SCHEME FOR THE AWARD OF HONOURS

This Scheme is indicative only and is subject to alteration from time to time. It is published for the general guidance of students and is not the sole determinant of the classification of a degree. Preliminary assessment of Honours for the BSc Degrees will be determined from the mean mark calculated using the modules’ values and the following weighting factors:

Weight 0: modules at Level 4 and equivalent modules in ancillary subjects.

Weight 1: modules at Level 5 and equivalent modules in ancillary subjects.

Weight 2: Earth and Planetary Science modules at Level 6, advanced modules in ancillary subjects and advanced modules in other Colleges.
VIVAS

All students have a 30 minute examination (Viva) with one of the external examiners when they graduate. Vivas are arranged after the examinations, usually near the end of June. The purpose of the Viva is to determine the student’s understanding of the subject. The external examiners usually ask questions about the student’s map and thesis or project, together with some broader questions.

The final results for each candidate are determined not only on the basis of the grades or marks awarded to the candidate in the individual elements of the examination, but also on the assessment by the examiners, taking account of advice of Visiting Examiners, of the overall performance of the candidate. Various factors may be taken into account in arriving at the final result, such as the distribution of marks awarded to the candidate over the various elements, the strength or weakness shown in relation to that in other elements, any special difficulties known to have been experienced by the candidate at the time of the examination (e.g. illness). Distance Learners can take this oral examination by Skype if necessary.

MODULE CONFIRMATION, EXAMINATION, RESULTS AND ENROLMENT PROCESS

The information in this section outlines the module confirmation, examination, module choice and re-enrolment process for students in the Department. The examination process begins with the Student Module Confirmation Procedure which takes place between December to February each year.

STUDENT MODULE CONFIRMATION PROCEDURE

Each academic year in December to February you will receive an email asking you to log into your My Birkbeck Profile to confirm the modules you are taking are correct. The email will be sent to the current personal email account listed on the record. This process is different from when you inform your Programme Administrator of your module option choices and is your only opportunity to check and confirm that your modules are correctly listed on your record and are locked for the academic year.

Your list of modules should include all the modules you are taking in that academic year, not just those assessed by examination, but also those assessed by coursework, dissertation, project etc., as this will ensure the marks and grades you achieve are properly recorded and reported to you at the end of the year.

You will need your Birkbeck username and password to log in. If your details are correct, please click the 'Confirm my Modules' button and follow any further instructions. Please contact the Department if your module records are incorrect and need updating. You should be able to confirm the modules that you have enrolled on for 2016/17. Once you confirm, Examinations will then set up an examinations record and you will be entered for the exam.

It is important that you confirm your modules by the specified deadline, as the examination timetable is compiled on the information you confirm. Examinations cannot guarantee to accommodate you for your examinations if you fail to confirm your modules by the given deadline.

Student Module Confirmation Process

All students on taught Undergraduate programmes are required to confirm the modules they are taking (this is in addition to the above process) via their MyBirkbeck profile. You will be contacted by the Examinations Office. It is important that you check the information is correct and that you
respond by the deadline given, as any delays will hamper the production of the examination timetables. An email from the Examinations Office will be sent to you once the module confirmation process is available. Your list of modules should include ALL the modules you are taking this year, not just those assessed by examinations, but also those assessed by coursework, presentation, project etc., as this will ensure the marks and grades you achieve are properly recorded and reported to you at the end of the year.

**Special examination provision**

During this process you will be also given the opportunity to notify us whether you require consideration for special examination arrangements for reason of health/disability, including dyslexia.

If you have any specific questions regarding disability or dyslexia provision, please speak to our Disability Office who will be able to advise you. Even if you have already discussed provision with the Disability Office, please provide a full explanation of your circumstances during the module confirmation process. You can also specify date(s) where religious commitments may prevent you from taking an examination. Examinations will try but cannot guarantee, that they will be able to avoid such dates. We recommend that as much as possible you keep the summer examination period (early May to early-June) free.

If you have had any unforeseen problem during the academic year, which may affect your performance at examinations or in coursework, you need to complete a “Mitigating Circumstances” form. Information on mitigating circumstances can be found here: [http://www.bbk.ac.uk/mybirkbeck/services/administration/assessment/exams/mitigating-circumstances](http://www.bbk.ac.uk/mybirkbeck/services/administration/assessment/exams/mitigating-circumstances)

**DEPARTMENTAL BOARD OF EXAMINERS MEETING:**

The Board of Examiners meeting usually takes place in late June or early July. At this meeting examination results for all modules are considered and ratified. The marks for all students who are completing their degrees that year are discussed and the degree classifications agreed. The External Examiners also take part in this process, to ensure that our degrees are of the same quality as those given by other UK Universities.

**RE-ADMISSION DECISIONS**

The Department holds two re-admissions meetings: the first in late June or early July and the second in mid-September.

At the first meeting, progression decisions are made for all students progressing to the 2nd, 3rd or 4th year of study.

**Progression rules for the first Re-admissions Board:**

1. Students who have passed all of their exams at 40% or over will progress to the next year of study.
2. Students who have failed a module with less than 35% will normally be required to repeat the module next year. If you have passed the coursework for the module, these marks will stand and you will not have to repeat these items.
3. Students who have failed up to 2 modules with 35 – 39% will be offered resit exams in September (or will be required to submit missing coursework by September 2nd). You do not have to accept the offer of a resit examination. You may decline it and retake the module in the following year.

4. Students who have failed more than 2 modules with 35 – 39% will be offered up to two resit exams in September, but will have to retake the other modules in the following year. Again, you can decline the offer of a resit examination if you wish and retake the module in the following year.

5. Students who have achieved 30 – 39% on a non-core module may be offered a compensated fail. This means that the mark for this module is recorded on your transcript and will be included in your final overall mark, and the module also counts towards your total number of modules. The compensated fail decision will show on your record. You do not have to accept an offer of a compensated fail. You can decline the offer of a compensated fail if you wish and choose to re-take the module.

RESULTS

Students will be informed of the outcome of this Re-admissions meeting by the Department via letter from the beginning of August. Re-admissions decisions are usually entered on the College system from August 1st onward when Registry opens the progression process to all Departments.

Enrolment papers are sent by Registry to students within two weeks of the decision being entered by the administrators. Module choice forms or details of the modules available for the next academic year will be sent to you by the Department with the re-admission letters.

Continuing students: Module results will be available on your “My Birkbeck” Profile page before the end of July. The Examinations Department is responsible for releasing results.

Students progressing to the next year of their programme will be informed of this by the Departmental Administration. Students will be sent a re-admissions letter by email with a module choice form attached or details of the modules included in the body of the re-admissions letter, and will be given advice on module options for the next academic year.

Final year students who have completed their programme of study successfully will be contacted by the Administrative Staff. Details of when graduands can expect to receive their transcripts and information regarding graduation arrangements will be included. Results are usually released by the Examinations Department from the third Friday in July after 4pm via your My Birkbeck Profile page.

Registry will also dispatch your final transcript to your registered contact address at this time. Please ensure your contact details are updated via your My Birkbeck Profile page.

IF YOU HAVE FAILED AN EXAM AT FIRST SITTING

If you failed an examination with 35-39%, you will be offered the opportunity to resit your exams(s) in September. You will be contacted individually by email with the details of the nature of the resit examination, date and time. A Reassessment decision is indicated on your ‘My Birkbeck profile’ by the letters ‘FR’ in the grade column next to the element (coursework or examination) of a module which has yet to be passed. The department cannot progress you until the results of your resits are confirmed.
RESIT EXAMINATIONS WILL BE HELD BETWEEN LATE AUGUST AND EARLY SEPTEMBER.

IN SOME EXCEPTIONAL CASES, AN EXAMINATION MAY BE REPLACED BY AN ADDITIONAL PIECE OF COURSEWORK. THE DEADLINE FOR SUBMISSION OF MISSING OR ADDITIONAL COURSEWORK WILL BE SEPTEMBER 2nd.

SECOND RE-ADMISSIONS BOARD

The second Re-admissions Board is usually held in mid-September after all resit exam scripts and submitted coursework have been marked. All progression decisions made at this meeting will be released to Registry on the day of the meeting.

Progression Rules for Students who have taken September Resit examinations:

1. Students who have passed their resit exam(s) at 40% or over will progress to the next year of study.

2. Students who have failed a resit exam with less than 39% will be required to re-take the module in the next academic year. If you have passed the coursework for the module, these marks will stand and you will not have to repeat these items. You may be allowed to progress to study some new modules alongside the modules which must be retaken.

3. Students who have failed a resit with 30 – 39% may be offered a compensated fail. This means that the mark for this module is recorded on your transcript and will be included in your final overall mark, and the module also counts towards your total number of modules. You do not have to accept an offer of a compensated fail. The compensated fail decision will show on your record.

4. If a student has failed a resit of a module which is a pre-requisite for a module in the next academic year, the student will NOT normally be able to register for that next module. The modules such students are able to study next year will be decided at the second readmissions meeting.

5. Full-time students who have failed a resit will be required to repeat that module next year. If they have failed more than two resit modules, they will be required to repeat the entire year. This will affect the number of modules such students can study in the next academic year and means that it could take more than 3 years to complete their programme of study.

The Departmental Administration will notify students of the decision by email within a few days of the second readmissions meeting and will explain which modules they can register for.

An amended module choice form or details of the modules available in the body of the re-admissions letter will be emailed to these students. Module results will be available on your “My Birkbeck” Profile normally within a week. If you have passed your resit(s), the Department will inform the Registry. Registry will then update your record and send you an enrolment email for your next year plus details of how to arrange for payment.

IF YOU HAVE FAILED A RESIT EXAM

If you have failed a resit examination, the Department will contact you and give information on which modules you have to retake next year, and which additional modules you will be able to take. In your ‘My Birkbeck profile’ a fail will be indicated by the letter ‘F’ in the grade column of the module.
If you have to repeat an entire year, you will be charged pro-rata for each module up to a maximum of the full fee for the programme year.

ENROLLED AND TAKING LESS THAN THE NORMAL FULL STUDY LOAD

If you are taking a reduced Study Load:

Birkbeck degree programmes have annual fees that are charged by year and not by module. However, at the discretion of the College, if you are taking a reduced study load or repeating modules your fee may be recalculated taking into account the number of credits you are studying in the year. This will usually result in a pro-rata fee based on the standard annual fee for your programme.

The following tables provide a guideline on how pro-rated fees are calculated, but other factors including overall number of credits studied or Breaks in Study may also be used in the calculation. The calculations are based on the assumption that all full time Undergraduate students take up to 120 credits per year and part-time students take up to 90 credits per year. The final agreed fee is determined by Registry Services and will be displayed in the online enrolment system.

<table>
<thead>
<tr>
<th>Mode: FT 3 Year</th>
<th>UG Degree</th>
<th>Mode: PT 4 Year</th>
<th>UG Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credits</td>
<td>Fraction of Fee</td>
<td>Credits</td>
<td>Fraction of Fee</td>
</tr>
<tr>
<td>15</td>
<td>1/8 full year fee</td>
<td>15</td>
<td>1/6 full year fee</td>
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<td>30</td>
<td>1/4 full year fee</td>
<td>30</td>
<td>1/3 full year fee</td>
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<td>45</td>
<td>3/8 full year fee</td>
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<td>1/2 full year fee</td>
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<td>75</td>
<td>5/8 full year fee</td>
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<td>105</td>
<td>7/8 full year fee</td>
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<tr>
<td>120</td>
<td>1 year full fee</td>
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</tbody>
</table>

| Mode: PT | Grad Certificate/Diploma* | Credits | Fraction of Fee |
| Cert HE (up to 60 Credits per year) | |
| Credits | Fraction of Fee |
| 15 | 1/4 full year fee |
| 30 | 1/2 full year fee |
| 45 | 3/4 full year fee |
| 60 | 1 year full fee |

* Students take 30 credits per year on the Graduate Certificate and take 60 credits over two years

If you are Repeating All or Some Modules

If you have been given permission to repeat all or some of your modules in the programme year you may be permitted to retake modules while also studying new modules. The full fee, pro-rated to the overall number of credits being taken (new and repeated modules) will be applied, up to a maximum
of the full fee for the programme year. The pro-rata fee is calculated automatically from the progression decision inputted by the Department.

**Student Fees**

Student fees are payable on either a monthly, termly or annual basis. Student fees are decided by individual student status: the status categories are set out below. More detailed information on fees can be found on the Birkbeck website:

[http://www.bbk.ac.uk/prospective/](http://www.bbk.ac.uk/prospective/)

**Enrolled students**

All enrolled students attending a full programme year will usually be charged the applicable full fee.

**Repeating (retaking) modules**

Where students need to retake modules, i.e. re-attend classes, and are not paying programme fees, a pro rata fee will be charged.

**Assessment only – resits or deferrals**

Where a student is not attending classes but has access to College facilities (Library and workstation rooms) and is registered for one or more assessments, an administrative fee may be charged.

**Reduced Study Load**

Where a student has permission to enrol for the programme year, but is taking a reduced study load, the full fee may be pro-rated to the CAS credits being taken. The administration team should be contacted for further advice.

**THE MODULE CHOICE FORM**

All students will be sent a module choice form or details of module choices in the body of the re-admissions letter from the Department. When you have received confirmation of your exam results, please complete the form and submit it to the Department. The Department will add your name to your chosen modules. Module choices usually take one and three days to be updated on your profile.

**THE DEADLINE FOR SUBMISSION OF MODULE CHOICE FORMS TO THE DEPARTMENT IS USUALLY THE THIRD FRIDAY IN SEPTEMBER. WE CANNOT GUARANTEE THAT ANY MODULE CHOICE FORMS SUBMITTED TO US AFTER THIS DATE WILL SHOW ON YOUR “MY BIRKBECK” ACCOUNT BY THE FIRST DAY OF TERM.**

**RE-ENROLMENT**

Once a progression decision has been confirmed, the Department will inform the Registry who will then update your record and send you details of how to enrol by email plus details of the fee for the year and how to arrange for payment. Follow the details included in the enrolment email as to how to enrol correctly.

**IF YOU HAVE A LIBRARY OR FEE DEBT, YOU WILL NOT BE ABLE TO ENROL. REGISTRY WILL NOT SEND YOU DETAILS OF HOW TO ENROL. ONCE ANY DEBTS ARE PAID, REGISTRY WILL THEN SEND YOU ENROLMENT DETAILS VIA EMAIL. FAILURE TO ENROL IN TIME WILL MEAN THAT YOU WILL NOT HAVE ACCESS TO OUR MODULE CONTENT AVAILABLE VIA MOODLE, NOR THE LIBRARY OR ITS RESOURCES BY START OF TERM. YOU WILL NOT BE ABLE TO VIEW YOUR TIMETABLE ON YOUR ‘MY BIRKBECK’ PROFILE.**
If you do not enrol in a timely manner you will not get access to the virtual learning material and will fall behind in your studies. Students can also be terminated from a programme of study due to non-payment of fees.

**STUDENTS RETURNING TO COMPLETE ONLY THEIR PROJECT OR MAP AND THESIS MODULE**

Once you have confirmed that you are returning to complete your Project or Map and Thesis module, we will complete an online progression form for you which will be processed by the Registry. The Registry will send you details about how to enrol and what your fee is likely to be.

Fees are usually set at a pro-rata rate of the year’s full programme fee. Students who are receiving supervision plus access to the College Library and IT resources will pay the pro-rate fee. The exam only fee is only paid by students who are writing up their project or map and thesis at home with no input or supervision from the Department. The fee structure set by Registry may be subject to change.

**Failure and Re-assessment of a Module**

To satisfactory complete a module, students must achieve an overall mark of 40% or more.

A student who fails to pass a module at their first attempt may be re-assessed or may be required to re-take. Re-assessment is where a student will re-attempt a failed element of a failed module. A re-take required attendance at the module’s lectures as well as another attempt at the assessment. A decision on whether students will be permitted to be re-assess in one or more elements of a module that has not been passed is at the discretion of the sub-board of examiners.

A student whose module result is less than 35% will be required to re-take the entire module. Such students will need to re-enrol for the module, re-attend the module and retake the coursework and exam required for the module.

**Reassessment**

Resit examinations are arranged for all modules in the September preceding the start of the new academic year. Students must inform the administrator if they wish to take up an offer of reassessment.

**Number of Attempts**

Students are permitted three attempts at passing a module (the original attempt plus two further attempts). If a student fails any module for the third time, their place on their programme of study will be withdrawn.

**Completion of Modules**

Students passing a module cannot retake a module to gain a higher mark.

For more information see ‘The Module Confirmation, Examination, Resulting and Enrolment Process for Students in the Department of Earth and Planetary Sciences’ on page 20.

**Capping of Re-assessed Exams and Modules**

Birkbeck has introduced a new policy on the re-assessment grading of coursework and exams. All re-assessed work will be capped at 40% (max) in line with other universities. From 2015/16 the College Common Awards Scheme regulations will be changed to include an amendment to the regulation of reassessments. From 2015/16 any reassessment awarded will be subject to a cap at the
pass mark (40% undergraduate and 50% postgraduate) except where mitigating circumstance have been accepted on the failed assessment, and students will be permitted to re-submit without penalty.

- Students who fail an assessment and are awarded a reassessment opportunity will have their reassessment subject to a cap.
- The cap does not apply to a retake of a module

More Information is provided on the Regulations webpage of the My Birkbeck website here: http://www.bbk.ac.uk/mybirkbeck/services/rules

ASSESMENT SUBMISSION DEADLINES AND FEEDBACK

1. The assessment submission deadline is the normal date the assessment is due.

2. The Final Submission Deadline is 2 weeks after the normal submission deadline.

3. Assessments handed in late (i.e. after the submission deadline but before the final submission deadline) will be capped at 40%. The tutor will record both the true mark and the capped mark, and indicate why the mark has been capped. Where the true mark is less than 40%, the true mark will simply be recorded.

4. Work submitted after the final submission deadline which is 2 weeks after the normal submission deadline will not be marked.

5. Assessment should be marked and returned to students with feedback within four weeks (i.e. as soon after the final submission deadline as possible). Where a piece of work is submitted after the normal deadline then it may not be possible to provide feedback within four weeks.

MITIGATING CIRCUMSTANCES

5.6 Mitigating Circumstances
The College Policy on Mitigating Circumstances determines how boards of examiners will treat assessments that have been affected by adverse circumstances. The College policy can be found here: http://www.bbk.ac.uk/mybirkbeck/services/rules/mitcircspol.pdf

Mitigating circumstances are defined as unforeseen, unpreventable circumstances that significantly disrupt a student’s performance in assessment. This should not be confused with long-term medical issues, for which the College can make adjustments before assessment. For guidance on how arrangements can be made in these cases please see the College’s Procedures for Dealing with Special Examination Arrangements, which are available on the undergraduate student section of Moodle (appendix 2 lists the circumstances that are considered as mitigating circumstances).

Submission of a claim for mitigating circumstances should be regarded as exceptional: all students should strive to meet all the deadlines set for assessed work in order to avoid falling behind in their studies. A mitigating circumstances claim should be submitted if valid detrimental circumstances result in:

- the late or non-submission of assessment;
- non-attendance at examination(s);
- poor performance in assessment
However, please note that mitigating circumstances claims can only be considered if they are received before the relevant Sub-Board of Examiners meeting; appeals after the Sub-Board has reached its decisions must be submitted via the formal Appeals system organised by the College Registry. Where this is the case, an appeal must be submitted in writing within six weeks of the date of notification of results.

For a mitigating circumstances claim to be considered the student must produce independent documentary evidence. If for any reason a student is unable to provide supporting evidence by the deadline, the claim will not be considered until they are able to do so. Supporting evidence is required to show that the circumstances:

- have detrimentally affected your performance or will do so, with respect to the above;
- were unforeseen;
- were out of your control and could not have been prevented;
- relate directly to the timing of the assessment affected

Documentation should be presented, wherever possible, on the official headed paper of the issuing body, and should normally include the dates of the period in which the circumstances applied. Copies of documentary evidence will not normally be accepted. If you need an original document for another purpose, you should bring the original into the relevant Department Administration Office so that a copy can be made by a member of College staff (where a photocopy is made by a member of staff they should indicate on the copy that they have seen the original). Documentation should be in English, or accompanied by a certified translation; it is the student’s responsibility to arrange translation of documentation.

The College lays out all the specific circumstances which may constitute mitigating circumstances in the following document: http://www.bbk.ac.uk/registry/policies/documents/MitCircs.pdf

Discussing your claim with a member of staff does not constitute a submission of a claim of mitigating circumstances. You are encouraged to submit your claim for mitigating circumstances in advance and at the earliest opportunity. The final deadline for submission of a claim is listed below for coursework, exams and the Map and Thesis or Project.

Claims must be submitted using the specified College Mitigating Circumstances claim form downloadable from:
http://www.bbk.ac.uk/registry/policies/documents/MitigatingCircumstancesForm_1617.docx

which should be submitted in accordance with the procedure for submission outlined on the Moodle site. In this regard please note that only forms submitted directly to the undergraduate programme administrator will be considered. Claims should always be supported by appropriate documentary evidence.

Please submit your mitigating circumstances claim to: p.gaunt@bbk.ac.uk

You should be aware that individual marks will almost never be changed in the light of mitigating circumstances. Assessment is designed to test your achievement rather than your potential. It is not normally possible to gauge what you would have achieved had mitigating circumstances not arisen. Where mitigating circumstances are accepted, and it is judged by an examination board that these circumstances were sufficiently severe to have affected your performance in assessment, the normal response will be to offer you another opportunity for assessment without penalty, at the next available opportunity.
Decisions relating to mitigating circumstances claims are taken by the appropriate Board of Examiners, based in the Department responsible for the programme on which the student is registered (the ‘home department’). Students must submit any mitigating circumstances claim to the Mitigating Circumstances Committee in their home department, even when the affected module is run by another department (the host department). If mitigating circumstances are accepted by the home Mitigating Circumstances Committee, the host department should be informed and asked to make a decision on the form of reassessment that should be made or in what other way the claim should be dealt with. The Committee’s decision and the host department’s recommendation on reassessment should be communicated to the appropriate Board of Examiners for ratification. Where agreement on acceptance of mitigating circumstances or reassessment cannot be reached, the Chairs of the Mitigating Circumstances Committees should seek guidance from the Academic Registrar.

Coursework

The deadline for submitting mitigating circumstances for coursework is two weeks after the submission deadline. Claims must be submitted using the specified Departmental Mitigating Circumstances claim form downloadable from here:

http://www.bbk.ac.uk/registry/policies/documents/MitigatingCircumstancesForm_1617.docx

which should be submitted in accordance with the procedure for submission outlined on the Moodle site. Claims should always be supported by appropriate documentary evidence.

Any mitigating circumstances claims received after the Final Submission Deadline will not be considered and the coursework will be failed at the first attempt (see above).

If you do submit a mitigating circumstances claim for an element of coursework you will be required to hand in the coursework before the Final Submission Deadline – failure to do so will result in failure of the coursework at the first attempt. If a student does not submit within the absolute cut off deadline due to Mitigating Circumstances another claim must be submitted, if successful the assessment will be deferred to the next submission deadline for that piece of work. If a second claim is not submitted or is rejected a mark of 0% will be awarded for non-submission.

It is the student’s responsibility to check that the version of the assignment submitted is the correct version and that they leave sufficient time to submit, even if there are technical problems. A late submission which has been caused by last minutes technical problems will not ordinarily be considered as a valid mitigating circumstances claim.

Mitigating Circumstances

1. Students may submit a Mitigating Circumstances Form to Peter Gaunt (p.gaunt@bbk.ac.uk) setting out the reasons for the late submission of assessment. The Mitigating Circumstances Form should be accompanied by documentary evidence e.g. a doctor’s note, to support the claim for mitigating circumstances and should be submitted normally within seven days of the published final assessment deadline or examination.


3. The Mitigating Circumstances Form and supporting evidence will be considered at the mitigating circumstances meeting which are scheduled to take place monthly. If the Sub-Board accepts the Mitigating Circumstances, the true mark obtained will be awarded.
Mitigating Circumstances and Exams

The final deadline for submission of a claim is seven days after the exam in question. Claims must be submitted using the specified Departmental Mitigating Circumstances claim form (downloadable through the undergraduate student section of Moodle), which should be submitted in accordance with the procedure for submission outlined on the Moodle site. In this regard please note that only forms submitted directly to the undergraduate administrator will be considered. Claims should always be supported by appropriate documentary evidence. Any mitigating circumstances claims received after the specified deadlines will not be considered and the assessment will be failed at the first attempt. If you become ill during the exam and are unable to complete the exam you should notify the invigilator and then submit a mitigating circumstances claim with the supporting evidence. Students cannot put in mitigating circumstances if they sit an exam but feel that they have performed poorly. This is not a sufficient reason to request mitigating circumstances.

Please see details below of information about assessment submission and feedback and mitigating circumstances for the Department of Earth and Planetary Sciences.

ATTENDANCE

Birkbeck, University of London takes attendance at taught sessions very seriously. The College expects you to consistently attend all timetabled sessions, including lectures, seminars, group and individual tutorials, learning support sessions, workshops, laboratories, field trips, inductions and demonstrations.

Attendance is recorded electronically. You are required to swipe in with your ID card each time you attend a class. Our students are often in full or part time employment and may have other commitments such as childcare or caring responsibilities. However the College does expect you to manage these commitments around timetabled sessions in order to take part in the programme fully. If you expect to be absent for any length of time, you are expected inform the module tutor and Programme Administrator and make arrangements to ensure you complete work you miss during your absence.

If your attendance falls below an acceptable minimum, the Programme Director reserves the right to inform your employer, and where appropriate withdraw your enrolment.

Regular attendance at lectures is a requirement of the degree and registers are kept. It is the responsibility of students to ensure that they swipe their student card on the card reader to register their attendance at each lecture and/or seminar they attend, or to sign the paper register where no card reader is available. You are expected to attend your lectures and seminars in order to complete a module. It is not uncommon, however, for Birkbeck students to find attendance difficult on occasions during their course. Any student who misses more than three lectures for a module in any one term will be contacted by the admin team to discuss if there are any difficulties.

Students who cannot make a particular class for any reason should send their apologies by email to the lecturer, copying in their programme administrator. It is the responsibility of students, not the lecturer, to ensure that they receive any materials or instructions that may be given out in lectures that they miss. If you find it difficult to maintain regular attendance you must discuss this with your personal tutor, as it may be possible to arrange a break in studies while you deal with any problems.
Registered Distance Learners are exempt from physical attendance, but their access to Moodle content and College IT resources will be monitored.

Students who have enrolled but do not attend any lectures, or who do not contact us, may be put on a break in studies or withdrawn from their programme.

Non-submission of multiple assessments can result in termination of your studies.

Lack of progression (attempting assessments and passing modules) without suitable mitigating circumstances can also result in termination of studies.

Tier 4 students
Students on Tier 4 visas who have absences of more than two weeks need to submit an authorised absence request with supporting evidence that needs to be approved by the programme director. The College is obliged to report unauthorised absences to the Home Office and could withdraw sponsorship of the student’s visa.

The College is required to monitor and confirm to the UK Border Authority the attendance for international students with Tier 4 visas. Students who have Assessment only and Unsupervised Dissertation status will be assumed to be not attending. The College cannot sponsor any students with these statuses for Tier 4 visas.

BREAK IN STUDIES

If circumstances dictate, you can take a break in studies for up to two years during your programme of study. This may either be for an unbroken period of two years, or a series of non-consecutive shorter periods that add up to a total of two years or less. The minimum period for a break in studies is one term. You can apply for a break in studies via your My Birkbeck Profile, or via the Programme Administrator.

Requests to take a break in studies must normally be made by the end of the preceding term. A Break in Studies request will usually only be approved for a period of one calendar year.

For example, if a student requests a break in studies at the end of the autumn term they would be expected to return at the beginning of the spring term in the following academic year. In this case the student would study their usual credit load (90 credits part-time or 120 credits full-time) over the autumn term before the break in studies begins, and then complete them over the spring and summer term of the year in which they return. The credit load cannot be increased when a student returns from a break in studies. Fees are not charged for the period that the student is on a break in studies. Students taking a break in studies would be charged for the autumn term and, on returning from the break, would be charged two terms’ fees (for spring/summer) - at the rate of fees set for that year.

If a student would like to request a break in studies they should discuss their intention with their personal tutor and department administrator then submit a request through their My Birkbeck Profile: 1. Login to your My Birkbeck Profile: http://www.bbk.ac.uk/mybirkbeck/my-birkbeck-profile

2. Once logged in, under ‘My studies and timetable’ click on ‘Request a change to study status’

3. Click on the ‘break in studies (interruption)’ tab
4. Fill in the requested details on the form and click on ‘submit request’
5. You will receive a notification that your request has been submitted
6. Once the request has been considered and a decision made you will be notified of the outcome by email. Please be aware that this will not happen immediately as several departments will need to review and process the request. A normal time frame is 4 weeks.

Plagiarism Statement

What is plagiarism?

Plagiarism, the act of taking somebody else's work and presenting it as your own, is an act of academic dishonesty, and Birkbeck takes it very seriously.

Examples of plagiarism include (but are not restricted to):

- copying the whole or substantial parts of a paper from a source text (e.g. a web site, journal article, book or encyclopaedia), without proper acknowledgement
- paraphrasing another's piece of work closely, with minor changes but with the essential meaning, form and/or progression of ideas maintained
- piecing together sections of the work of others into a new whole
- procuring a paper from a company or essay bank (including Internet sites)
- submitting another student's work, with or without that student's knowledge
- submitting a paper written by someone else (e.g. a peer or relative) and passing it off as one's own
- representing a piece of joint or group work as one's own.

If you knowingly assist another student to plagiarise (for example, by willingly giving them your own work to copy from), you are committing an examination offence.

Academic declaration form

When submitting coursework (e.g. essay, coursework or dissertation), you will need to sign an academic declaration form, stating that you have read the sections of plagiarism in your Departmental Handbook and confirming that the work is your own, with the work of others fully acknowledged.

What happens if plagiarism is suspected?

Where an examiner (of examinations and other written coursework) suspects plagiarism, s/he has a responsibility to report this to the College. Where there is evidence of plagiarism, the relevant procedures in the regulations will be followed and the person responsible will be contacted accordingly.

Further information and regulations
http://www.bbk.ac.uk/mybirkbeck/services/rules/Assessment%20Offences.pdf
Student Support and Learning Resources

Student Centre

The site below collates a range of information you will need to help you study at Birkbeck. Please go to: http://www.bbk.ac.uk/student-services

The Academic Year

The academic year is divided into three terms: autumn, spring and summer. Most teaching occurs in the autumn and spring terms. Examinations normally take place the summer term.

The College is closed for the Christmas and Easter holidays.

Term Dates

Full details of term dates and closures can be found at the main Birkbeck website.

Opening Hours

Administration Office (Malet 627). 10am to 6pm. Mon – Thu. 10am – 5pm Fri.

My Birkbeck

My Birkbeck is a one stop online gateway to student services (including the Birkbeck Library, Disability and Dyslexia Services, Career Services, etc.). My Birkbeck also allows you to access your My Birkbeck Profile. Profile access allows you to:

- Enrol online.
- Maintain your contact information.
- View your study schedule.
- View your assignment grades.
- Set up a break in studies.

My Birkbeck Helpdesk

My Birkbeck Helpdesk can help you with:

- general information about all our courses at Birkbeck
- enrolment queries
- general information about any aspect of your studies at Birkbeck
- getting referred to specialist staff for more in-depth professional support
- making an appointment for one-to-one advice

You can also use the self-service terminal to access information. The My Birkbeck Helpdesk is located in the main building: http://www.bbk.ac.uk/maps

Opening hours

A list of frequently asked questions is available online: www.bbk.ac.uk/ask or you can contact the Helpdesk as shown below. Please check the website for details of opening hours as these may vary: http://www.bbk.ac.uk/mybirkbeck/services/facilities/helpdesk

My Birkbeck Helpdesk

Birkbeck, University of London
Enrolment
Once you have accepted a formal offer of admission onto the Programme, you will be sent an email inviting you to enrol online. The email will contain your username and password, which you will need to access Birkbeck’s IT services. When you have completed your enrolment, you will be able to:

- Attend lectures and seminars.
- Use Moodle, the Birkbeck virtual learning environment, to access learning materials and assignments.
- Use the Birkbeck Library.
- Order your Birkbeck ID Card
- Join the Birkbeck College Students Union
- Gain full access to all College support services, such as the Careers and Employability service.

ID Cards
Once you have completed your enrolment, you will be issued a Birkbeck identity card. You can order your card via your My Birkbeck profile (Simply upload a recent image of yourself and submit your order). Your card will be posted to your contact address. Once you have ordered your card, you can print out a temporary identity card from your My Birkbeck profile, which will give you library access. You will receive your card approximately 5 days before your temporary card expires.

If you are having difficulty acquiring an ID card, please contact the My Birkbeck Student Centre.

If you lose or damage your Birkbeck student card, you can replace the card for a non-refundable fee of £10.00.

Fees
Information on fees is available from Fees Office.

Fees can be paid per term or by direct debit over a period of eight months. The Fees Office handles all issues regarding the payment of fees, and should be contacted directly if you have any problems.

Birkbeck College Hardship Fund
The College Awards and Hardship Fund is open to applications from all undergraduate and postgraduate students whose financial circumstances have changed, leading to difficulties in paying tuition fees.

Students should contact the Funding Advice department for advice: Email: fundingadvice@bbk.ac.uk
Tel: 020 7631 6362 (11:00am – 1:00pm and 2:30pm – 5:30pm, Monday to Thursday)

For tuition fees enquiries, please go to the Student Centre helpdesk which is open all year:
- Monday to Thursday: 11am – 7pm (out-of-term opening hours: 11am – 6pm)
- Friday: 11am – 5pm
- Saturday: 12 noon – 5pm; Sunday: closed

Telephone: 020 7631 6316
Should students need to contact the student centre outside of these hours you can do so via the web form at www.bbk.ac.uk/ask
International Students
The International Office at Birkbeck can provide support and advice for students studying from overseas: [http://www.bbk.ac.uk/prospective/international/coming-to-birkbeck](http://www.bbk.ac.uk/prospective/international/coming-to-birkbeck).

A range of orientation events take place during late September – for further information, please go to [http://www.bbk.ac.uk/prospective/international/coming-to-birkbeck/orientation-events](http://www.bbk.ac.uk/prospective/international/coming-to-birkbeck/orientation-events).

Obligations under Tier 4 to monitor and report on student attendance, change of circumstance and withdrawal:
Overseas students must notify their programme administrator of their intention to: withdraw from a programme / transfer to another programme of study
- return to their country of origin (either temporarily or permanently)
- to take a holiday / conduct research in another country
Department staff will then ensure that the Registry is notified without delay. Records will be kept of all approved holidays and breaks and students must ensure that they notify department staff on their return so that they can be checked back in. Students must report any permanent withdrawal from a programme, which Birkbeck must then report to [UK BA](http://www.ukba.gov.uk) immediately.

Tier 4 students must be in the country to complete their research project. If the only thing a tier 4 student is studying in the summer term they must attend three registration points (separately to their supervision meetings), one of which will be the submission of the hard copy project.

Any intention to change programme or change your period of study must be reported to admin staff who will then inform the Registry immediately.

Failure to comply could lead to your visa being revoked.

IT Accounts
EPS Students are provided with an IT accounts: one for the College as a whole The College account provides you with access to:
- College workstations.
- Your Birkbeck library account.
- Moodle.
- My Birkbeck.

Code of Student Discipline
Birkbeck students are expected at all times to adhere to the [Code of Student Discipline](http://www.bbk.ac.uk/prospective/international/coming-to-birkbeck/orientation-events). Failure to abide by this code may lead to disciplinary proceedings and censure. You are also expected to adhere to the Birkbeck regulations for the [safe and ethical use of IT](http://www.bbk.ac.uk/prospective/international/coming-to-birkbeck/orientation-events).

Personal Tutor
Upon induction, all EPS students will be allocated a personal tutor. This will normally be a member of teaching and research staff from EPs. The personal tutor will be responsible for:
- Day-to-day academic supervision and support of students.
- Monitoring student progress.
- Pastoral care of students.
IT Support
Support for College IT services it provided by Information Technology Services (ITS).
Tel: 020 7631 6543

Email: its@bbk.ac.uk
Student Centre, Ground Floor, Malet Street Main Building.

ITS is responsible for:
- College account usernames and passwords.
- College workstation rooms.
- Moodle.
- My Birkbeck.

Help and information with IT Services is available online:
www.bbk.ac.uk/mybirkbeck/services/facilities/computing or by calling the IT Helpdesk on 020 7631 6543. Alternatively go to the ITS Help Desk on the ground floor in the main building.

http://www.bbk.ac.uk/its/contact/index.html#servicedesk
If required, Helpdesk staff will liaise with appropriate ITS technical support staff to answer user queries.

ITS is an academic service department responsible for the central communications and IT infrastructure of the College. It provides a wide range of network services to support the teaching & learning, research and administrative activities of College staff and students.

ITS facilities and services include:
- Extensive campus data network providing high speed connectivity to the Internet
- Purpose-built computer classrooms equipped with up-to-date networked PCs and high-quality printers (at least one open 24 hours a day)
- A wide range of general software applications (e.g. word-processing, email, web) and specialist packages
- Wireless connectivity to the College network from your laptop or other personal computer equipment
- Facilities for students with special needs, including technical support and advice on the use of assistive technologies to help with specific disabilities
- Helpdesk with extended opening hours for general computing queries
- Practical, hands-on training workshops on general applications and self-training materials to enable you to work at your own pace
- Remote access to College electronic resources and services
- An online electronic course management system to support learning - the Moodle Virtual Learning Environment

You can find out more about these services and others by visiting the 'My Birkbeck' website. Access to all IT services is via a username and password (issued by email) and includes personal storage space on a networked server. Once enrolled we recommend you register for our “Self Service Reset Password Management” service; after setting answers to 3 security questions you will be able to reset your password if you forget it. You need to provide and maintain an email address that can be used for all College correspondence. Alternatively, you can apply for a web-based Birkbeck email account (hosted by Google).

You are expected to access the 'My Studies at Birkbeck’ website to update your email address and other personal details and to access information about your programme of study.

There is also a text message news flash service which enables you to receive free urgent messages from the College via your mobile phone. Full details are available on the 'My Birkbeck’ website.

**Support for disabled users**
In our experience, support is best tailored to the individual students’ needs. The Disability IT officer can provide advice on a range of specialist products to support students with special needs, and support with accessing the specialist hardware and software in the computer workstation rooms and the Library. If you would like an appointment, please contact the Disability Office on 020 7631 6316, email disability@bbk.ac.uk, or visit the ITS Helpdesk on the ground floor of the Main Building.

**Workstation room PCs and software**
Most users access ITS facilities using PC workstations located in eight rooms around the College. The workstations allow personal tailoring of the desktop, which is then available from all PCs in any ITS workstation room. This may include size of icons, size of text and colour schemes. ITS Reception can provide help in setting up the desktop. A number of systems have additional enabling technologies available:

- Hardware includes mouse replacements, additional keyboards, large screen monitors and scanners, adjustable desks, and specialist orthopaedic chairs.
- Software is designed to be of assistance to students with visual impairment, blind students, students with dyslexia and a range of other problems. Software includes SuperNova, TextHelp Read and Write, Inspiration.

**Access to facilities from home**
The College provides a Virtual Private Network service providing access to network services from home via your Internet Service Provider. This includes: College based electronic mail, Intranet, World Wide Web, ITS documentation, Library catalogue, Birkbeck Electronic Library and networked filestore.

**Use of personal equipment**
The College has a Wireless and Mobile computing service that allows students to connect their own equipment (including laptops and PDAs) to the College network for access to resources required for their study.

**Documentation**
Most documentation is provided in electronic form, and may be easily viewed on PCs via the Internet/Intranet. Large print versions are available on request.
Academic Support

Academic support is available from a number of sources within the College including Birkbeck’s Study Skills support team, Birkbeck Students’ Union and IT Services.

College Study Skills Support

Study Skills Support

2.12 Study Skills

The College offers a wide range of study skills support services (e.g. academic writing, mathematics, exam technique, presentations, etc.). This includes:

- Workshops.
- Essay writing
- Report writing
- Research
- Mathematics
- Online support
- One-to-one tutorials.
- Drop-in sessions
- Online resources

Study skills advice and support are provided by Birkbeck’s Study Skills Support Team. Our aim is to help you develop your personal and/or professional skills and to improve your learning.

We can help students both new to Higher Education and who are returning to study in developing the skills that you need to carry out effective and enjoyable study. This includes help and advice in areas such as academic writing, note taking, managing and planning your time, revision and preparing for exams, advice on IT skills, dealing with stress. More information on the services and the learning support available to you can be found here:

http://www.bbk.ac.uk/mybirkbeck/services/facilities

Workshops

During the first weeks of the autumn term a number of study skills workshops will be organised for new students. The purpose is to provide students with the general skills required for successful study. The Success in Academic Writing workshops cover the following topics: (a) Reading and research skills; (b) Essay writing; (c) Referencing and plagiarism; (d) Critical thinking and writing; (e) Personal/professional development planning: presentation skills, time management, team work, and how to cope with cultural differences etc

Birkbeck Library

Once you are fully enrolled you are automatically a member of the Library. You will need your Student ID Card to activate the turnstile and to take books out.

The entrance to Birkbeck Library is on the ground floor of the main building in Malet Street (entrance on Torrington Square). Your College ID card gives you automatic access to the Library. There is no need to register. The opening times of the Library are designed to meet the needs of part-
time students in full-time work. During term-time, the Library is open 7 days a week from 8.30am to
11.45pm. More information on using the library can be found on the library webpage at http://www.bbk.ac.uk/lib/

The Birkbeck Library provides a substantial collection of general and subject specific resources.

This includes:
• Books
• Periodicals
• Journals
• E-resources.
The library also offers a quiet and convenient place to study.

**Your Subject Librarian**
Subject Librarians are responsible for liaising with specific schools and departments, collection
development, information skills training and providing a reference and enquiry service for Library users. Subject or reference queries or enquiries about electronic resources can be directed to the Help Desk in the first instance. Help Desk hours 020 7631 6063  library-help@bbk.ac.uk

Your Subject librarian is Emma Illingworth. Please contact her if you need any help with using the Library’s resources and/or finding information over and above that which you can get from the Library help desk. She is available for telephone and email help, and group or one-to-one information sessions by appointment.

More information on other services and resources available to students can be found at:
http://www.bbk.ac.uk/geology/current-students/
Emma can be contacted on 020 7631 6062 or at e.illingworth@bbk.ac.uk

The subject librarian can advise on the availability of resources on specific topics, and order new resources where demand dictates.

**Rights and responsibilities**
You can borrow up to 10 items at a time. Most books can be borrowed for 3 weeks. Some books and DVDs can be borrowed for 1 week. 1 week and 3 week loan books can be renewed as long as no-one else requests them. A few items can only be issued for 1 day and cannot be renewed. There are also books marked reference and a Reading Room Collection with reference access to key course readings. These books cannot be borrowed.

**Accessing resources from your PC**
You can access a whole host of electronic journals and databases from any PC in College. These resources can also be accessed from outside College with your IT Services (ITS) username and password.

The Library website is at http://www.bbk.ac.uk/lib. As well as giving comprehensive information about the Library’s services and collections, you can:

- Search the Library catalogue, renew your books and place reservations on items that are out on loan.
- Read articles in over 28,000 electronic journal titles and newspapers.
• Search databases to help you find out what has been written about the subject you are researching

• Access past exam papers.

• Work through LIFE – an online tutorial to help you make the most of the Library.

Disability assistance
Birkbeck Library aims to be accessible and convenient for all and offers a range of services and equipment designed to meet the needs of Library users with disabilities. This includes postal loans, one-to-one help with Subject Librarians, leaflets in alternative formats, a CCTV magnification system, writing slopes and orthopaedic chairs.

For full details of our services and equipment, please visit the online guide at http://www.bbk.ac.uk/lib/disability-support or contact Library Access Support on 020 7631 6491. Email: library-disability@bbk.ac.uk

If you have particular difficulty in accessing the Library, you may benefit from using the LAMP Service (Library Materials by Post) which provides extended loans, postal loans for books and photocopies of journal articles and a book fetching service. LAMP is free to students who have registered their disability with the Birkbeck Disability Office – contact the Disability Office (Tel: 020 7631 6316 Email: disability@bbk.ac.uk) in the first instance.

Other libraries
Birkbeck students can also use a range of other libraries. Students have reference access to many University of London college libraries. In addition, undergraduate students can

join the SCONUL Access Scheme which allows access to most other higher education libraries with limited borrowing rights. See the Library web site for more information.

Further help
If you require any assistance using the resources or finding information either in Birkbeck Library or elsewhere, please ask at the Help Desk. Telephone: 020 7631 6063.

2.10 Health and Safety
The College Safety Officer is Mr Keith Ryan, who can be contacted on 020 7631 6218 or on email k.ryan@bbk.ac.uk

In the event of an emergency, phone 555 (internal telephone number). This can be dialled from most Birkbeck buildings to REPORT any emergency and to REQUEST help. A 555 call is routed to a special telephone staffed at all times by a Duty Attendant who will summon the required assistance. 555 callers MUST identify themselves and the specific assistance required, and also inform the Duty Attendant of the precise location of the emergency.

In the event of the fire alarm being sounded, everyone must leave the building without delay by the nearest available exit and must not re-enter the building until the alarm has been silenced and permission has been granted by the Senior Fire Officer or Duty Attendant.
Moodle Virtual Learning Environment – VLE

Moodle

The College uses the Moodle Virtual Learning Environment to provide an online resource where students can gain access to important module information such as lecturer notes and slides, module announcements, timetables and more.

Moodle is Birkbeck’s virtual learning environment. You will be given a Moodle account upon enrolment. You will use Moodle to:

- Access learning materials for your modules.
- Access assignments.
- Submit assignments.
- Receive grades and feedback on assignments.
- Communicate with your module tutors and classmates.

Every undergraduate management module is listed in Moodle and when you log on it will show you the modules you are registered for - http://moodle.bbk.ac.uk/. It also contains an ‘Undergraduate Students’ section which provides you with important administrative information as well as the latest announcements.

You can access Moodle from any location with an Internet connection and web browser, using your ITS username and password to log on. Central Computing Services will send you these details once you officially enrol as a student - go to http://www.bbk.ac.uk/its/ for more details. For help, go to the ITS Helpdesk, on the ground floor in the main building in Malet Street or phone 020 7631 6543.

If there are modules missing on your Moodle account, please contact your programme administrator. Once students have enrolled, they will be sent a username and password to access Moodle.

Students can access Moodle at: http://www.moodle.bbk.ac.uk

When logging into Moodle for the first time you will be presented with a list of modules you are enrolled on for the current academic year, as well as a link to the generic Department of Earth and Planetary Sciences Moodle space.

Clicking on the name of a module will take you to that module’s content space. Here you will find module specific information such as the contact details of the module convener, copies of notes and slides from lectures that have already taken place, and a message board for discussing material covered with your classmates. Some modules may also use Moodle to allow students to submit assignments electronically.

As access is limited to modules for which you are enrolled, you should save to your personal computer any material you may want to refer to in the future.

The main Moodle page, which is the first screen seen after login, displays up-to-date announcements about your programme. Module administrators will use Moodle as the principle means of making announcements, so it is vital that students check it regularly.

For more information about using Moodle go to: https://moodle.bbk.ac.uk
Your academic contact for Moodle in the Department is Steve Hirons s.hirons@bbk.ac.uk who, as well as teaching on our programmes, is the Director for the Centre for learning and professional development.

Disability Statement for the Dept. of Earth and Planetary Sciences

2.4 The Disability Office
At Birkbeck there are students with a wide range of disabilities, specific learning difficulties, medical conditions and mental health conditions. Many of them have benefited from the advice and support provided by the College’s Disability& Dyslexia Service.

The Disability & Dyslexia Service and Mental Health Service
The Disability & Dyslexia Service is located in the Wellbeing Centre G26, on the ground floor of the Malet Street building.

All enquiries should come to the Wellbeing Centre, who will determine the appropriate referral to specialist staff. They can provide advice and support on travel and parking, physical access, the Disabled Students’ Allowance, specialist equipment, personal support, examination arrangements, etc. If you have a disability or dyslexia, we recommend you call us on 0207 631 6316 to book an appointment.

The Disability & Dyslexia Service can help you to complete your Study Support Plan, confirming your support requirements with your School and relevant Departments at the College so they are informed of your needs.

Access at Birkbeck
Birkbeck's main buildings have wheelchair access, accessible lifts and toilets, our reception desks and teaching venues have induction loops for people with hearing impairments, and we have large print and tactile signage. Accessible parking, lockers, specialist seating in lectures and seminars and portable induction loops can all be arranged by the Disability & Dyslexia Service.

The Disabled Students’ Allowance
UK and EU (with migrant worker status) disabled and dyslexia students on undergraduate and postgraduate courses are eligible to apply for the Disabled Students' Allowance (DSA). The DSA provides specialist equipment including computers with assistive technology and training, personal help e.g. note takers, BSL interpreters,
specialist tutors for students with dyslexia and mental health mentors and additional travel costs for students who have to use taxis. It provides **thousands of pounds worth of support** and all the evidence shows that students who receive it are more likely to complete their courses successfully.

The Disability & Dyslexia Service can provide further information on the DSA and can assist you in applying to Student Finance England for this support.

**Support in your Department**
Your Department will receive a copy of your Study Support Plan from the Disability and Dyslexia Service. This will make specific recommendations about the support you should receive from the Department.

Support will be provided by the Programme Director, tutors and Programme Administrator in the Department.

**Support in IT Services and Library Services**
There is a comprehensive range of specialist equipment for students with disabilities in IT Services. This includes an Assistive Technology Room, which may be booked by disabled students. We have software packages for dyslexic students (e.g. Claroread and Mind view), screen reading and character enhancing software for students with visual impairments available in our computer laboratories, specialist scanning software, large monitors, ergonomic mice and keyboards, specialist orthopaedic chairs, etc. We have an Assistive Technology Officer, who can be contacted via IT Services. The Library has an Assistive Technology Centre, where there is also a range of specialist equipment, including an electronic magnifier for visually impaired students, as well as specialist orthopaedic chairs and writing slopes. The Disability and Dyslexia Service Office refers all students with disabilities to the Library Access Support service, who provide a comprehensive range of services for students with disabilities and dyslexia.

**Examinations and Assessments**
Many disabled and dyslexic students can receive support in examination, including additional time, use of a computer, etc. They are often also eligible for extensions of up to two weeks on coursework, which should be requested in writing. In order to receive special arrangements a student must provide medical evidence of their disability (or, if you are dyslexic, an Educational Psychologists report) to the Disability Office as soon as they enrol on the programme. The department will then receive this information from the Disability Office in order to make the necessary special arrangements.

**Please note that students with an SSP (Study Support Plan) which allows an extension of two weeks on coursework can request to use it on any piece of coursework and will not be capped if they submit the coursework by the relevant deadline, usually two weeks after the original submission deadline. The absolute cut off deadline runs alongside this; if a student with an SSP submits after the two week SSP deadline but before the three week absolute cut-off deadline, the assignment will be capped at the pass mark. Check this!!**

**Specific Learning Difficulties (e.g. dyslexia, dyspraxia)**
Mature students who experienced problems at school are often unaware that these problems may result from their being dyslexic. Whilst dyslexia cannot be cured, you can learn strategies to make studying significantly easier. If you think you may be dyslexic you can take an online screening test in the computer laboratories, the instructions for the screening test are available on the Disability Office website. If appropriate, you will be referred to an Educational Psychologist for a dyslexia assessment. Some students can receive assistance in meeting this cost, either from their employer or from Birkbeck.
Further information
For further information or to make an appointment to see the Disability & Dyslexia Service, please call the Wellbeing Administrators on 020 7631 6316 or email disability@bbk.ac.uk.

Examinations
Students with disabilities and dyslexia may be eligible for special arrangements for examinations e.g. extra time, use of a word processor, amanuensis, enlarged examination papers etc. In order to receive special arrangements a student must provide medical evidence of their disability (or, if you are dyslexic, an Educational Psychologists report) to the Disability Office as soon as they enrol on the programme.

The examinations office will then receive this information from the Disability Office in order to make special examinations arrangements.

For in-class tests you should contact your lecturer and the programme administrator to request special arrangements at least 2 weeks before the examination.

The Disability Office
At Birkbeck there are students with a wide range of disabilities including dyslexia, visual or hearing impairments, mobility difficulties, mental health needs, medical conditions, respiratory conditions. Many of them have benefited from the advice and support provided by the College’s Disability Office. The College has a Disability Office located in room G12 on the ground floor of the Malet Street building. We have a Disability Service Manager, Mark Pimm, a Disability Administrator, John Muya and a Mental Health Advisor, Elizabeth Hughes. We will shortly be appointing an SpLD Advisor.

The Disability & Dyslexia Service is located in the Wellbeing Centre G26, on the ground floor of the Malet Street building. All enquiries should come to the Wellbeing Centre, who will determine the appropriate referral to specialist staff. They can provide advice and support on travel and parking, physical access, the Disabled Students’ Allowance, specialist equipment, personal support, examination arrangements, etc. If you have a disability or dyslexia, we recommend you call us on 0207 631 6316 to book an appointment.

The Disability & Dyslexia Service can help you to complete your Study Support Plan, confirming your support requirements with your School and relevant Departments at the College so they are informed of your needs.

They can provide advice and support on travel and parking, physical access, the Disabled Students Allowance, special equipment, personal support, examination arrangements etc. If you have a disability or dyslexia, we recommend you come to our drop in session where we can discuss support and make follow up appointments as necessary. The drop-in sessions are between 4pm and 6pm Monday to Thursday. The Disability & Dyslexia Service can also complete an Individual Student Support Agreement form with you, confirming your support requirements and send this to your School and relevant Departments at the College so they are informed of your needs.

Access at Birkbeck
Birkbeck's main buildings have wheelchair access, accessible lifts and toilets, our reception desks have induction loops for people with hearing impairments and we have large print and tactile
signage. Disabled parking, lockers, specialist seating in lectures and seminars and portable induction loops can all be arranged by the Disability Office.

**The Disabled Students Allowance**

UK and most EU students with disabilities on undergraduate and postgraduate programmes are eligible to apply for the Disabled Students' Allowance (DSA). The DSA usually provides thousands of pounds worth of support and all the evidence shows that students who receive it are more likely to complete their programmes successfully. The Disability Office can provide further information on the DSA and can assist you in applying to Student Finance England for this support.

**The Personal Assistance Scheme**

Some students need a personal assistant to provide support on their programmes, for example a note-taker, sign language interpreter, reader, personal assistant, disability mentor or dyslexia support tutor. Birkbeck uses a specialist agency to recruit Personal Assistants and they can assist you with recruiting, training and paying your personal assistant. Please contact the Disability Office for information on this scheme.

**Support in your School and Department**

The provision which can be made for students with disabilities by Schools is set out in the Procedures for Students with Disabilities. This is available from the Disability Office and on the disability website (see below). Your School will receive a copy of your Individual Student Support Agreement from the Disability Office. This will make specific recommendations about the support you should receive from the School. Whilst we anticipate that this support will be provided by the Programme Director, tutors and School Administrator in the School of Arts also has a Student Disability Liaison Officer. If you experience any difficulties or require additional support from the School then they may also be able to assist you. They may be contacted through the School Office or the Disability Office.

The provision which can be made for students with disabilities by Departments is set out in the Procedures for Schools for Compliance with the Disability Discrimination Act. This is available from the Disability Office and the Disability website (see below). Your Department will receive a copy of your Individual Student Support Agreement from the Disability Office. This will make specific recommendations about the support you should receive from the School.

Whilst we anticipate that this support will be provided by the Programme Director, tutors and Department Administrator, the Department of Earth and Planetary Sciences also has a Disability Liaison Officer, Dr Andy Beard. If you experience any difficulties or require additional support from the School then they may also be able to assist you. They may be contacted on 0203 073 8024 or at: a.beard@ucl.ac.uk.

**Support in Central Computing Services and Library Services**

There is a comprehensive range of specialist equipment for students with disabilities in IT Services. This includes software packages for dyslexic students (e.g. Claroread and Inspiration), screen reading and character enhancing software for students with visual impairments, specialist scanning software, large monitors, ergonomic mice and keyboards, specialist orthopaedic chairs etc. For advice and assistance please contact Disability IT Support. There is also a range of specialist equipment in the Library including a CCTV reading machine for visually impaired students as well as specialist orthopaedic chairs and writing slopes. The Disability Office refers all students with disabilities to the Library Access Support service who provides a comprehensive range of services for students with disabilities.
Specific Learning Difficulties (Dyslexia)
Mature students who experienced problems at school are often unaware that these problems may result from their being dyslexic. Whilst dyslexia cannot be cured, you can learn strategies, which make studying significantly easier. If you think you may be dyslexic, you should contact the Disability Office who can screen you and where appropriate refer you to an Educational Psychologist for a dyslexia assessment. These assessments cost £225. Some students can receive assistance in meeting this cost from their employer. In exceptional cases students may receive assistance from the Access to Learning Fund.

5.1 Disability and Dyslexia Service
At Birkbeck we welcome students with disabilities. Our commitment is to help you meet the challenges and seize the opportunities that study at Birkbeck presents. We aim to provide all of our students with a study environment that enables them to participate fully in our courses.

The Disability and Dyslexia Service can provide advice and support to students with conditions that impact their ability to study, such as:
• Specific learning difficulties (Dyslexia, Dyspraxia, Dyscalculia, AD(H)D)
• Sensory impairments (blind/partially sighted, d/Deaf/hearing impaired)
• Mobility conditions (including RSI, arthritis, neck back and knee conditions etc.)
• Medical conditions (e.g. HIV, CFS, diabetes, cancer, chest and respiratory conditions etc.)
• Autism spectrum conditions (Autism or Asperger’s Syndrome)

Support available includes:
• Additional time for coursework completion.
• Additional time for exams.
• Sheltered exam conditions.
• Assistive technologies (e.g. Hearing loop).
• Scribe services.

You can contact the Disability & Dyslexia Service by emailing disability@bbk.ac.uk, or calling 020 7631 6316.

Examinations
Students with disabilities and dyslexia may be eligible for special arrangements for examinations e.g. extra time, use of a word processor, amanuensis, enlarged examination papers etc. In order to receive special arrangements a student must provide medical evidence of their disability (or an Educational Psychologists report if you are dyslexic) to the Disability Office. For main College summer examinations you are given the opportunity to declare that you require special provision on your assessment entry form. Students who require provision should then attend an appointment with the Disability Office to discuss and formalise the appropriate arrangements. The closing date for making special examination arrangements in College examinations is March 15th and beyond this date consideration will only be given to emergency cases.

The Disability Handbook
The Disability Handbook provides detailed information on the support available from the College. Copies are available from all main reception areas, the Disability Office and from the College disability web site at: http://www.bbk.ac.uk/disability/policies

Further information: Contacting the Disability Office
Full information on disability support is at:
http://www.bbk.ac.uk/mybirkbeck/services/facilities/disability
For further information or to make an appointment to see the Disability office, please call the Student Centre on 020 7631 6316 or email disability@bbk.ac.uk. Alternatively appointments are available from Monday to Thursday between 2pm and 6pm.

5.2 Counselling Service
The Counselling Service provides assistance to students who are experiencing emotional difficulties which may be impacting upon their studies, or overall experience at Birkbeck. It offers a range of services, including:

- One-off consultation.
- Individual brief focused counselling.
- Self-help resources including MP3 downloads, a self-help library and useful web links.
- Referrals to other services.

The service aims to respond to the needs of students struggling with emotional and psychological issues, and to allow students to maintain emotional wellbeing by developing effective coping strategies at times of stress.

You can contact the Counselling Service by emailing counselling-services@bbk.ac.uk.

5.3 Mental Health Service
The Mental Health Service provides support to students who have a formally diagnosed psychiatric condition or other form of mental health difficulty, such as anxiety or depression.

You can contact the Mental Health Service by emailing mentalhealth@bbk.ac.uk, or by calling 020 7631 6316/0020

5.4 Student Union
The Birkbeck Student Union provides a focal point for the social and cultural life of the College. The Union also provides a political focus for students, and provides advice and counselling services.

All internal students of Birkbeck College are automatically members of Birkbeck College Students’ Union (BCSU), which exists to promote welfare and social activities for students, and to represent their interests on College committees. It also provides a free, confidential and Professional counselling service, an advice centre and study skills support. More information is available on the Students’ Union website: [http://www.bbk.ac.uk/su](http://www.bbk.ac.uk/su), from the BCSU office on 020 7631 6335 or info@bcsu.bbk.ac.uk

A broader range of social and sporting activities, including the Energy Base gym, is offered by the University of London Union (ULU), located next to the Malet Street Building, which Birkbeck students are entitled to join. Their website is [http://www.ulu.co.uk](http://www.ulu.co.uk)

5.5 Childcare
The College operates a well-equipped evening nursery at a moderate cost and nursery facilities are available to students registered for the current academic year.

If you are studying in central London during the evening, you can use the Birkbeck Evening Nursery Service. The nursery is open from 5.30 – 9.00 pm (Monday to Friday) and accepts children aged 2-6 years (or older if your child is already attending the nursery). The cost is £15.00 per evening for block bookings, or £20 for one-off bookings.
APPENDIX 1: I HAVE A QUERY! WHERE CAN I FIND AN ANSWER?

My Birkbeck Profile
http://www.bbk.ac.uk/mybirkbeck/my-birkbeck-profile

Where is my class?
When is my class?
What is my assessment mark?
Where is my exam timetable?

Programme Handbook/ Undergraduate Student Area on Moodle
(Posted in the Undergraduate Student Area on Moodle)
Who is my personal tutor and how can I contact them?
Who is my programme administrator and how can I contact them?
What is the structure of my degree programme?
What is the Department of Earth & Planetary Sciences policy on retakes assessment criteria etc.?

My Birkbeck Helpdesk
(Located in the main Birkbeck building. Opening hours and contact details here:
http://www.bbk.ac.uk/mybirkbeck/services/facilities/helpdesk
I need help with enrolment
I need to pay my fees or I have a query about my fees

Programme Administrator
I need to submit a mitigating circumstances claim
I am going to miss a class
I’m not sure who to contact with my query

Module Tutor
I want some additional feedback on my assessment, e.g. on my exam paper
I have an assessment-related question (coursework essay/exam)
I don’t understand something in my class

Personal Tutor
I have personal problems which are affecting my studies
I need to discuss my degree progression
I want to discuss which modules to choose for next year

Careers

What you can do whilst studying, to secure get the job you want on graduating:

1. Finding and applying for jobs
   a. To book a one-to-one appointment with one of the Birkbeck Careers Service team:
      - email employability@bbk.ac.uk;
      or
      - visit one of the team in the Employability Space, located within the Student Centre at
b. If you are interested in seeing a Career Coach, there will be 6 coaches available for in-depth support. To request a session:

- email career-coaching@bbk.ac.uk
or
- visit one of the team in the Employability Space.

c. Workshops run by the Birkbeck Careers team include:

- Networking Yourself;
- Social Media & Online Strategy;
- Going Global;
- CV and Interview Masterclass;
- Understanding Emotional Intelligence;
- LinkedIn or Locked Out;
- Identify Your Transferrable Skills;
- Going Solo; Working With Recruitment Agencies.

Places on these workshops can be booked at:


The aim of these workshops is to help you find the type of work you are looking for; write effective CVs; submit strong applications; and excel at interview. We would strongly advise you to attend as many of these workshops as possible, regardless of whether you are new to the workplace or studying at Birkbeck to change careers. The Careers Service can help ‘career changers’ present their past experience to best advantage.

2. Finding paid work to strengthen your CV

Birkbeck has an onsite recruitment agency called Birkbeck Talent.

Whether you are new to the workplace or experienced in your professional field, Birkbeck Talent aims to support you find paid work to strengthen your CV. We would strongly advise you to make contact with the Birkbeck Talent team as soon as possible to see how you can effectively position yourself for the career you want. Email talent@bbk.ac.uk for more information.

When Birkbeck Talent launches for all students in 2015-16, you will be able to register with Birkbeck Talent, and search for relevant roles through your My Birkbeck Profile.

3. Have you ever considered a career in Technology or Health & Social Care?

Birkbeck Careers has partnered with leading employers to develop the Work Readiness Programme. The programme:

- will introduce you to healthcare employers in the areas of social work, counselling, healthcare management, psychotherapy, medicine-related careers and psychology; as well as
technology employers in digital marketing, big data, software engineering, project management, UX design, IT consulting and many more.

- will provide you with training directly from these employers to advance your employability skills;
- includes a range of workshops, skills training and other events, as well as one-on-one support and opportunities for work experience.

Join the Work Readiness Programme to meet employers such as the NHS, Macmillan Cancer Research, Think Ahead, The Frontline, the West London Alliance, PwC, Glassdoor, Pebble (code), Media Math, Zealify, J.P. Morgan and many more.

To find out more please visit: [www.workreadinessprogramme.com](http://www.workreadinessprogramme.com)
To apply contact us at: work.readiness@bbk.ac.uk

4. Have you ever considered a career in teaching?

In 2017/18 the School of Science aims to pilot the Undergraduate Ambassador Scheme [http://bit.ly/1MGeKi1]. This will provide the opportunity to gain a **structured experience in schools, buddied to a teacher in your discipline**. The scheme will be open to students in their penultimate year of study. Participants will need to make themselves available for one day a week for at least one term. They will receive training prior to starting in the school and mentoring from the teacher whilst on the scheme. They will observe teaching, undertake a little, supported teaching themselves and undertake a project to support learning and teaching in the school.

Please note, participants receive no remuneration for taking part in this scheme and should only volunteer on this understanding. Students seeking paid employment should make contact with Birkbeck Talent [see above].

If you are interested in taking part in 2017/18:
- please express your interest by emailing Roz Dixon at r.dixon@bbk.ac.uk;
- you are also encouraged to take part in as many of the workshops offered by the Careers Service as possible [see above]. This will to give you the best chance of securing a place on this scheme which will be by application and subject to interview.

5. Gaining ‘hands on’ experience of research in Geology

The academic team at Birkbeck run their own research projects throughout the year. Experience of research in Geology can be gained by providing voluntary support for one of these academics’ projects. Contact the adminin office at s.jenkins@bbk.ac.uk.

Taking part in this scheme provides invaluable insight into the research process and helps students gain a deeper understanding of their discipline. It may also provide a useful addition the student’s CV. However, please note, this work is not remunerated in any way and students should only
volunteer if this is acceptable to them. Students seeking paid employment should make contact with Birkbeck Talent [see above].

6. Birkbeck’s Mentoring Programme for finalists:

Birkbeck is piloting a mentoring scheme that matches finalists with alumni from the same discipline. Mentors are volunteers who receive training by Birkbeck at the outset of the scheme.

The aim is to make this scheme available across the School of Science in 2017/18. This is a competitive scheme to which students apply, making clear what they hope to achieve by taking part. Successful candidates will receive some initial training to help them make use of the opportunity and will meet with their mentor approximately 3 times over the 6 month period.

If you are going to be a finalist next year [in 2017/18] and think you might find mentoring useful in your final year, you are strongly encouraged to take part in as many of the workshops offered by the Birkbeck Careers Service as possible [see above], as this will give you the best chance of securing a place on this competitive scheme.

7. Masters programmes: The Department of Earth and Planetary Sciences

We offer a part-time taught 2-year MSc in Geochemistry, with annual intake. We also offer a part-time MPhil Earth Sciences and a part-time MPhil in Geology.
Contacts in the Department of Earth and Planetary Sciences

Academic and Academic-Related

Dr Andy Beard 020 3073 8024 a.beard@ucl.ac.uk
Professor Charlie Bristow 020 3073 8025 c.bristow@ucl.ac.uk
Professor Andy Carter 020 7679 2418 a.carter@ucl.ac.uk
Professor Ian Crawford 020 3073 8026 i.crawford@ucl.ac.uk
Professor Hilary Downes 020 3073 8027 h.downes@ucl.ac.uk
Dr Simon Drake 0203 073 8024 drakesimon1@gmail.com
Mr Steve Hirons 020 3073 8028 s.hirons@ucl.ac.uk
Dr Philip Hopley 020 3073 8029 p.hopley@ucl.ac.uk
Professor Gerald Roberts 020 3073 8033 gerald.roberts@ucl.ac.uk
Dr Philip Pogge von Strandmann 020 7679 3637 p.strandmann@ucl.ac.uk
Dr James Hammond 020 3073 8035 j.hammond@ucl.ac.uk
Dr Charlie Underwood 020 3073 8036 c.underwood@bbk.ac.uk

Technical

Maz Iqbal 020 3073 8031 m.iqbal@ucl.ac.uk
Technical Services Manager

Hank Sombroek 020 7679 7336 h.sombroek@bbk.ac.uk
Technician

Administration

Diane Calliste 020 3073 8104 d.calliste@bbk.ac.uk
Assistant School Manager

Stephen Jenkins 020 3073 8032 s.jenkins@bbk.ac.uk
Team Leader

Peter Gaunt 020 7631 6665 p.gaunt@bbk.ac.uk
Programme Administrator

Postal Address
Birkbeck University of London
Department of Earth and Planetary Sciences
6th Floor
Malet Street
London
WC1E 7HX

Website: www.bbk.ac.uk/geology
INTRODUCTION TO GEOLOGY (30 credits) EASC001S4

**MAIN OBJECTIVES**
To introduce the basic facts and concepts of geology.

**KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT**
Knowledge and understanding of the basic tenets of geology and geophysics with refresher material provided on basic science.

**COGNITIVE SKILLS**
The student will develop an understanding of hypothesis development and be given examples of hypothesis testing. This will involve theoretical understanding of relevant concepts, critical assessment of results and outcomes and experience of real situations.

**SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS**
The students will be made aware of relevant concepts used in studies of geology and geophysics. They will be trained to use petrographic and binocular microscopes. They will be trained to draw accurate cross-sections across geological and topographic maps.

**GENERAL/TRANSFERABLE SKILLS (INCLUDING KEY SKILLS)**
The student will gain skills such as writing, comprehension of scientific concepts, mathematical calculation, manipulation of data, independent study, and confidence in their abilities to follow a problem through to its end. They will be proficient in the use of microscopes and have some understanding of the 3-dimensional aspects of geological and topographical maps.

**CONTENT**
The module deals with the origin and structure of the Earth, the nature of the geological record and the processes which have formed the common rock-types. The module introduces fundamental techniques of geology including the use of the petrographic microscope and the construction and interpretation of geological maps. Major topics include: mineralogy, sedimentology, igneous and metamorphic petrology, structural geology, geophysics and plate tectonics. Identification of minerals and rocks in hand-specimen and thin-section forms a major part of the practical side of the module.

**RECOMMENDED READING**
The Geological Society of London Handbook series: Ken McClay The mapping of geological structures

**FIELDWORK** One 1–day field class.

**MODULE EXAMINATION**
One 3-hour theory paper and one 3-hour practical paper.

**LECTURER**
Dr Simon Drake
EARTH HISTORY (15 credits) EASC050H4

MAIN OBJECTIVES
To familiarise students with methods used to establish age relations and teach skills required to reconstruct geological history. To introduce some of the main themes of Earth history, including examples from the geological evolution of the British Isles and adjacent areas.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
Students will learn about the main periods of geological time and the major events that have punctuated Earth’s history.

COGNITIVE SKILLS
Information assimilation and recollection.

SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
Principles of stratigraphy and plate tectonics, and a familiarity with the geological timescale.

GENERAL/TRANSFERABLE SKILLS (INCLUDING KEY SKILLS)
Map interpretation; thinking in 3-D.

PREREQUISITES
Some knowledge of plate tectonics; module can be studied concurrently with Introduction to Geology.

LECTURE CONTENT

PRACTICAL CONTENT

RECOMMENDED READING

FIELDWORK
Joint with Introduction to Geology (one day).

MODULE EXAMINATION
One 2-hour combined theory and practical paper (80%); Assessed Practical 1 (10%); Assessed Practical 2 (10%).

LECTURER: Dr Phil Hopley
INTRODUCTION TO GEOCHEMISTRY (15 CREDITS) EASC038H4

MAIN OBJECTIVES
To provide the principles of inorganic chemistry necessary for an understanding of mineralogy, petrology and low-temperature geological processes. To develop the mathematical skills necessary for understanding these inorganic chemical principles. To develop practical skills in solving geochemical problems through a series of written exercises.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
Understanding of abstract concepts in geochemistry. Ability to recognise specific groups of chemical elements and their role in geological processes. Ability to see the relevance of chemistry in other areas of geology. Awareness of micro- and macro-scales in geochemistry.

COGNITIVE SKILLS
Synthesise information on a variety of geochemical topics. Ability to relate specific chemical knowledge to a geological context. Ordering and prioritising. Pragmatic thinking and analysis

SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
Graph construction and interpretation. Mathematical skills. Ability to think in 3 dimensions. Balancing chemical equations. Ability to prepare and write summaries of chemical concepts.

GENERAL/TRANSFERABLE SKILLS (INCLUDING KEY SKILLS)
Mathematical skills; writing skills; self-motivation, time management and organisation; data analysis, ability to write concise reviews of technical subjects

PREREQUISITES
None

CONTENT AND ORGANISATION
Atomic structure; the periodic table; bonding and electronegativity; chemical reactions and formulae; chemical equilibrium; the nature of minerals; properties of water and solutions; the phase rule and elementary phase diagrams; kinetics of geological processes; thermo-dynamics; the chemistry of the Earth; the use of isotopes in geology.
Bi-weekly assignments including chemical calculations will be set and discussed in class.

ASSESSMENT
The module will be assessed by four bi-weekly exercises (worth 40% of final mark), and an examination (worth 60% of final mark).

MODULE TEXT

LABORATORY WORK
None

LECTURER
TBC
INVERTEBRATE PALAEONTOLOGY (15 credits) EASC042H4

MAIN OBJECTIVES
The module will introduce the main common and important groups of invertebrate fossils. Concepts covered within each fossil group will include evolution, extinction, palaeobiology and functional morphology and geological uses. In addition the module will cover basic palaeontological principles, in particular classification, fossil preservation and fossil behaviour (in the form of trace fossils).

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
The principles of classification of organisms. The principles of fossil preservation. Morphology and palaeobiology of selected fossil invertebrate groups. The interpretation of behaviour and functional morphology of extinct organisms. The main geological applications of fossils

COGNITIVE SKILLS
Observational skills using hand specimens and photographs. Relating morphology of extinct organisms to biology and behaviour.

SUBJECT SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
Recognition and identification of fossils in the field and laboratory. Use of fossils in various geological applications. Interpretation of trace fossils.

GENERAL/TRANSFERABLE SKILLS
Detailed observation. Interpretation based on incomplete data. Time and project management. Integration of theory

PREREQUISITES
None

CONTEXT AND ORGANISATION
Principles of classification and preservation. Palaeobiology and significance of sponges, corals, gastropods, bivalves, cephalopods, echinoderms, brachiopods, trilobites and graptolites. Trace fossils (fossil behaviour)

RECOMMENDED READING
To be introduced during module.

FIELDWORK
None / Combined field class with Earth History and Introduction to Geology

MODULE ASSESSMENT
3 hour combined practical and theory examination (80%), Practical file (20%)

LECTURER
Dr. Charlie Underwood
FOUNDATIONS OF MINERALOGY (15 credits) EASC057H4

MAIN OBJECTIVES
The module will introduce the major rock-forming minerals, attempting to provide a basic understanding of their structural and chemical characteristics, and general indication of their origins. The optical properties of the minerals will be discussed, and practical classes will be run to illustrate the minerals in thin section and hand specimens.

KNOWLEDGE AND UNDERSTANDING
Understand basic concepts in mineralogy. Relate structure chemistry and properties of minerals.

COGNITIVE SKILLS
Interpreting information from hand specimens and thin sections, graphs. Developing reasoning based on evidence from hand specimens and thin sections.

SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
Handling data from tables and graphs. Interpreting data, including optical and compositional effects.

GENERAL/TRANSFERABLE SKILLS
Interpreting data. Numeracy. Scientific literacy. Use of graphs and tables

CONTENT AND ORGANISATION
- Symmetry & Crystallography
- Optics
- Factors that determine mineral structures
- Mineral and Silicate Classification
- Olivine and Garnet Groups
- $\text{Al}_2\text{SiO}_3$ Polymorphs
- Pyroxene Group
- Amphibole Group
- Sheet Minerals
- Silica Polymorphs
- Feldspars, and other minerals

RECOMMENDED READING
- Introduction to Mineral Sciences by Putnis (CUP)
- Mineralogy for students by Battey & Pring (Longman)
- An Introduction to Rock Forming Minerals by Deer, Howie and Zussman (Longman)

MODULE ASSESSMENT
- 2 hour Theory examination (60%)
- Course work (40%) Four pieces of assessed work.

LECTURER: Mr Steve Hirons
FOUNDATIONS OF ASTRONOMY (15 credits) SCES001H4

MAIN OBJECTIVES
The module is designed to provide a basic introduction to the science of astronomy.

COGNITIVE SKILLS
Understanding of scientific hypothesis development and testing. Ability to relate specific knowledge to a broader context.

SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
To understand and synthesise original research findings. To think quantitatively. To discuss the relationship between theory, empirical data and models.

GENERAL/TRANSFERABLE SKILLS
Familiarity with basic scientific concepts. Writing and presentation skills. Interpreting numerical and graphical data.

PREREQUISITES
None

LECTURE CONTENT
Astronomical nomenclature (constellations; star names and catalogues; stellar magnitudes; non-stellar objects; etc); Astronomical coordinate systems; Astronomical distance scale; Techniques of astronomical observation (electromagnetic spectrum; telescopes; spectroscopy); Stars (classification; energy sources; Hertzsprung-Russell Diagram; stellar evolution; nucleosynthesis); Interstellar medium; Structure of the Milky Way Galaxy; Extragalactic astronomy; Cosmology

PRACTICAL CONTENT
There will be one visit to a professional observatory arranged during the module. In addition, practical observations will be conducted with the Department’s own telescope in the UCL Front Quad weather permitting.

COURSEWORK
There will be two pieces of assessed coursework, consisting either of two problem papers or one problem paper and one 1200 word essay.

RECOMMENDED READING
Introduction to Astronomy and Cosmology by Ian Morison (John Wiley, 2008).

MODULE EVALUATION
One 2.5 hour written examination (75%) and continuous assessment of practical and written work (25%)

LECTURER Professor Ian Crawford
GEOLOGY OF THE SOLAR SYSTEM I (15 credits) SCES009H4

MAIN OBJECTIVES
To introduce students to the geological histories, and geological processes, of other planets, and to illustrate how this knowledge has led to our current understanding of the origin and evolution of the Solar System. The module is designed to give students taking the B.Sc. Degree in Planetary Science with Astronomy and the Certificate in Planetary Science with Astronomy a basic introduction to planetary geology, with particular emphasis on the geology of the Moon.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
Knowledge and understanding of the basic geology and geophysics of the other planets
Understanding of the various techniques used to acquire geological knowledge of other planets
Detailed understanding of our current knowledge of the origin and evolution of the Moon and its implications for understanding of other rocky planets.

COGNITIVE SKILLS
Understanding of scientific hypothesis development and testing
Ability to relate specific knowledge to a broader context

SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
Analysis and interpretation of planetary remote sensing data; Interpretation of images; creation of maps; interpretation of maps; Ability to transfer geological knowledge gained in the context of the Earth to wide range of different planetary environments.
Demonstrate knowledge of the specific aspects of planetary and lunar geology.
Demonstrate an understanding of how this knowledge has been arrived at, and the relationship between theories, hypotheses and observations in the planetary sciences.

GENERAL/TRANSFERABLE SKILLS
Familiarity with basic scientific concepts; Writing and presentation skills; Interpreting numerical and graphical data

PREREQUISITES
None (but ‘Introduction to Geology’ should be taken in parallel).

LECTURE CONTENT

PRACTICAL CONTENT
Construction of geological maps from orbital images of terrestrial planets
Study of meteorites and moon rocks (the latter in thin section using a petrographic microscope)
Visit to NASA’s UK Regional Planetary Image Facility (at University College London), plus one other relevant visit to an external facility

RECOMMENDED READING
Planetary Geology: An Introduction, by Claudio Vita-Finzi and Dominic Fortes

MODULE EVALUATION
One 2.5 hour written examination (85%) and continuous assessment of practical and written work (15%)

LECTURER  Professor Ian Crawford
GEOPHYSICS (15 credits) EASC005H5

MAIN OBJECTIVES
Introduce the basic principles of Geophysics
Understand the application of geophysical principles in the study of the Earth’s interior

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
To describe the basic principles of seismology, gravity, magnetic and other geophysical methods
To describe how principles of geophysics can be applied to enhance our understanding of the Earth
To apply basic mathematical and physical concepts in the study of geophysics

COGNITIVE SKILLS
To present basic numerical arguments
To explain the relationship between methodologies and geological applications

SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
To think quantitatively
To discuss the relationship between geophysical data and geological interpretation
Presentation of scientific ideas through activities

GENERAL/TRANSFERABLE SKILLS (INCLUDING KEY SKILLS)
Interpreting numerical and graphical data
Writing and presentation skills

PREREQUISITES
Introduction to Geology; GCSE mathematics

CONTENT AND ORGANISATION
Introduction to geophysics and seismology, basic seismic refraction and reflection methods, earthquake seismology, isostasy and gravity methods, geomagnetism and magmatic methods, introduction to electrical, electromagnetic and other geophysical methods. Geological applications of seismic gravity and magnetic methods.

RECOMMENDED PRE-MODULE READING
Lowrie, W., Fundamentals of Geophysics, Cambridge University Press

MODULE EXAMINATION
Written examination (80%) and assignments (20%)

LECTURER
Dr James Hammond
ADVANCED GEOPHYSICS FIELDCLASS (15 CREDITS) SCES049H6

MAIN OBJECTIVES
The primary aim of this module is to allow students to get experience in the geophysical equipment and software that they may use in future careers. The students will design geophysical surveys, collect the data and present their results both orally and in a written report.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
This module covers techniques commonly used by geophysicists in the field. Techniques covered include seismic methods, gravity, magnetics and electromagnetics.

COGNITIVE SKILLS
On successful completion of this module a student will be expected to be able to:
1. design simple geophysics surveys
2. use advanced geophysical equipment and software
3. interpret numerical and graphical data
4. relate geophysical data and geological interpretation
5. present scientific ideas through reports and presentations

PREREQUISITES
A pass in Geophysics

CONTENT AND ORGANISATION
The following methods will be used over the field course:

1. Seismic Refraction
2. Gravity
3. Magnetics
4. Resistivity
5. GPR

There are 3 components of the module:
Early to mid- September 2 – 3 evenings 18.00-21.00 - lectures preparing students for fieldwork.
Late September: 4 days fieldwork at Marble Hill House, Twickenham
First 4 weeks of term, one evening a week - lab classes processing data collected and preparing reports.

RECOMMENDED READING
TBC

FIELDWORK: Students will take part in a 5 day fieldclass on site at Marble Hill Hall in Twickenham, South West London. There, students will collect and process geophysical data to produce a technical report.

MODULE EXAMINATION
Field Skills Report (10%), Preliminary results report (20%), Final Report (70%).

LECTURER: Dr James Hammond
IGNEOUS PETROLOGY (15 credits) SCES005H5

MAIN OBJECTIVES
To introduce the main concepts of igneous petrology and to relate the occurrence of igneous rocks to plate tectonics and orogenic activity. To introduce students to the study of igneous rocks by means of the petrological microscope so that students can identify and interpret their mineralogy and textures.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
Understanding the chemistry and mineralogy of igneous rock; relating igneous rocks to plate tectonics; understanding of basic petrogenetic processes.

COGNITIVE SKILLS
Interpreting information derived from thin-section and hand-specimen analysis; developing reasoning based on evidence from mineralogy and chemistry of rocks.

SUBJECT-SPECIFIC PRACTICAL/ PROFESSIONAL SKILLS
Basic scientific literacy; understanding of binary and ternary phase diagrams; ability to place various types of rock in a plate tectonic context.

GENERAL/TRANSFERABLE SKILLS (INCLUDING KEY SKILLS)
Interpreting numerical and chemical data; writing scientific descriptions of rock samples; writing and presentation skills; use of graphs and diagrams.

PREREQUISITES
A pass in Introduction to Geology, Foundations of Mineralogy, or an equivalent module.

CONTENT AND ORGANISATION
The recognition, geological occurrence and petrogenesis of common igneous rocks. Classification of igneous rocks; recognition of rock-structure and textures; the generation and consolidation of magma; the use of experimental data from natural and synthetic melts; the relationship between metamorphism, igneous activity and plate tectonics. The integration of descriptive and interpretative petrology is the main aim of practical work.

RECOMMENDED READING

FIELDWORK: One weekend field class in Cornwall (with Metamorphic Petrology)

MODULE EXAMINATION
One 3-hour combined theory and practical exam, plus assignments (10%) and a written report (10%).

LECTURER: Professor Hilary Downes
METAMORPHIC PETROLOGY (15 credits) SCES006H5

MAIN OBJECTIVES
To introduce the main concepts of metamorphic petrology and to relate the occurrence of metamorphic rocks to plate tectonics and orogenic activity. To introduce students to the study of metamorphic rocks by means of the petrological and binocular microscope so that students can identify and interpret their mineralogy and textures.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
Understanding the chemistry and mineralogy of metamorphic rock; relating metamorphic rocks to plate tectonics; understanding of basic petrogenetic processes.

COGNITIVE SKILLS
Interpreting information derived from thin-section and hand-specimen analysis; developing reasoning based on evidence from mineralogy and chemistry of rocks.

SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
Basic scientific literacy; ability to place various types of rock in a plate tectonic context.

GENERAL/TRANSFERABLE SKILLS (INCLUDING KEY SKILLS)
Interpreting numerical and chemical data; writing scientific descriptions of rock samples; writing and presentation skills; use of graphs and diagrams.

PREREQUISITES
A pass in Introduction to Geology, Foundations of Mineralogy, or an equivalent module.

CONTENT AND ORGANISATION
The recognition, geological occurrence and petrogenesis of common metamorphic rocks. Classification of metamorphic rocks; recognition of rock-structure and textures; relationship between metamorphism and plate tectonics. The nature of metamorphic reactions; metamorphic grade; metamorphic facies; high- and low-pressure metamorphism. The integration of descriptive and interpretative petrology is the main aim of practical work.

RECOMMENDED READING
The books listed below are all very good but of very different styles. I would recommend you look in the library (if possible) before you purchase to see which suits best.

Best, M.G. 1982. Igneous and Metamorphic Petrology. Freeman. [A good all-round text].

FIELDWORK: One weekend field class in Cornwall (optional)

MODULE EXAMINATION
One 3-hour combined theory and practical paper, plus assignments

LECTURER: Mr Steve Hirons
PRINCIPLES OF SEDIMENTOLOGY (15 credits) SCES008H5

MAIN OBJECTIVES
Introduction to sedimentary processes; Instruction in Sedimentary petrography; Introduction to facies analysis; Illustration of clastic and carbonate sedimentary environments; Introduction to sequence stratigraphy.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
Description of sedimentary petrography and diagenesis. Understanding of sedimentary processes and environments. Interpretation of sedimentary environments.

COGNITIVE SKILLS
Data analysis and critical assessment of varied data sets. Extracting relevant data and justifying interpretations. Thinking in 3-D.

SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS

GENERAL/TRANSFERABLE SKILLS (INCLUDING KEY SKILLS)
Ability to select relevant information from multiple data sets; Make rational interpretations from proxy data; Handling uncertainty.

PREREQUISITES
Normally a pass in A-level Geology or Introduction to Geology or equivalent.

CONTENT AND ORGANISATION

RECOMMENDED READING
*Boggs, S. Principles of Sedimentology and Stratigraphy. Merrill.
* module texts
+additional reading

FIELDWORK
One weekend field class examining modern and ancient sedimentary environments.

MODULE EXAMINATION
One essay (20%) 3 hour practical examination (80%)

LECTURERS
Professor Charlie Bristow, Professor Andy Carter
STRUCTURAL GEOLOGY I (15 CREDITS) EASC011H5

MAIN OBJECTIVES
To introduce the basic tenets of structural geology.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
Knowledge and understanding of the basic tenets of structural geology and its relationship with plate tectonics.

COGNITIVE SKILLS
The student will develop an understanding of hypothesis development and be given examples of how these might be tested, involving analysis of databases, theoretical understanding of relevant concepts, critical assessment of results and outcomes, and experience of real situations reported in research papers. They will be encouraged to think about the 3-dimensional aspect of geological structures through stereographic projection and map interpretation techniques.

SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
The student will be made aware of relevant databases and how they might be used in studies of geology and geophysics. They will be trained to read and interpret geological maps. They will be able to plot structural orientation data on stereographic projections to aid 3D visualisation.

GENERAL/TRANSFERABLE SKILLS (INCLUDING KEY SKILLS)
The student will gain skills such as comprehension of scientific data and papers, mathematical calculation, manipulation of data research techniques, independent study, IT skills and confidence in their abilities to follow a problem through to its end. They will be accomplished at map reading/interpretation and 3D visualisation. They will learn to use an electronic library.

PREREQUISITES
A pass in A-level Geology (or equivalent), or Introduction to Geology.

CONTENT AND ORGANISATION
The plate tectonic setting of structures and deformation. Characteristics of tectonic structures: a review of the main features of faults, shear zones, folds, foliations, lineations and deformation fabrics. Formation of tectonic structures: a review of deformation mechanisms and the nature of stress and strain. Structural associations: the geometry and kinematics of thrust, normal and strike-slip fault systems. Development of poly-phase structures. Practical work will include structural interpretation of maps and cross-sections, the representation of structures using stereographic projections and the techniques of field structural geology.

RECOMMENDED READING:

MODULE EXAMINATION One 3 hour theory paper and one 3-hour practical paper.

LECTURER: Professor Gerald P Roberts
FORENSIC GEOLOGY EASC074H5 (15 credits)
DISTANCE LEARNING ONLY

PREREQUISITES
You can study this module if you are enrolled on the following programmes: Certificate in Forensic Geology; BSc Environmental Geology (option only); BSc Earth Science (option only)
A pass in Introduction to Geology, Introduction to Geochemistry and Invertebrate Palaeontology.

MAIN AIMS
The module provides a basic introduction forensic geology –the application of the principles of geological sciences to the identification and evaluation of geological materials that may relate to forensic investigation. The module will: Provide students with an overview of the history and development of forensic geology; Review the substantiation of compliance with laws, procedures, standards and ethics related to professional forensic geological investigation; Introduce techniques used to carry out forensic geological investigation and illustrate with examples, the wide variety of geological materials associated with crime, and the identification and classification of these.

MODULE OBJECTIVES
Knowledge and understanding in the context of the subject.
Understanding the process and systems related to forensic geology.

COGNITIVE SKILLS
Interpreting information derived from thin-section and hand specimen analysis: developing reasoning based on evidence from physical and chemical properties of geological material.

GENERAL/TRANSFERABLE SKILLS (INCLUDING KEY SKILLS)
Interpreting numerical and chemical data; writing scientific descriptions of rock, mineral, soil, fossil and pollen samples; writing and presentation skills; use of graphs and diagrams.

MODULE CONTENTS
The module examines the background to, and physical and chemical properties of geological materials used in forensic science. Lectures will focus on the History and development of forensic geology, compliance with laws, procedures, standards and ethics, rocks, sand, coal, fossils, pollen, spore, paints and building materials in forensic investigations, and geophysical methods of forensic investigation.

READING
Research papers relating to the module will be found in the following journals; Forensic Science International; Journal of Raman Spectroscopy; Journal of Forensic Science.

ASSESSMENT
70% one three-hour theory paper; 30% assessed practical
Practical will consist of exercises in handling and interpreting geological data and materials related to forensic cases.

LECTURER TBC
INTRODUCTION TO ASTROBIOLOGY (15 credits) EASC064H5

MAIN OBJECTIVES
The module is designed to provide a basic introduction to the exciting new field of astrobiology the study of the astronomical and planetary context within which life on Earth has evolved, and the implications for the prevalence of life elsewhere in the Universe. It will therefore aim to:
(1) Introduce students to the astronomical background of the origin of life, including the origin of the necessary chemical elements and the origin and evolution of the Solar System;
(2) Introduce the concept of pre-biological chemical evolution, and familiarize students with the key theories and experimental results in this area; (3) Provide students with an overview of the history of life on Earth, and its relevance for life elsewhere, with special reference to extremophilic life;
(4) Outline the prospects for life elsewhere in the Universe, both in our own Solar System and on the newly discovered planets around other stars; (5) Introduce students to the scientific and philosophical issues concerning the possibility of extraterrestrial intelligence.

COGNITIVE SKILLS
Understanding of scientific hypothesis development and testing. Ability to relate specific knowledge to a broader context.

SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
Ability to integrate a wide range of knowledge, from several different scientific disciplines.

GENERAL/TRANSFERABLE SKILLS
Familiarity with basic scientific concepts. Writing and presentation skills. Interpreting numerical and graphical data.

PREREQUISITES
None.

LECTURE CONTENT

PRACTICAL CONTENT
Study of meteorites and moon rocks (the latter in thin section using a petrographic microscope)

COURSEWORK
Two c.1000 word essays on astrobiological topics

RECOMMENDED READING
Life in the Solar System and Beyond, by Barrie W. Jones, Springer Praxis, 2004

MODULE EVALUATION
One 2.5 hour written examination (75%) and continuous assessment of practical and written work (25%)

LECTURER Professor Ian Crawford
GEOLOGY OF THE SOLAR SYSTEM II (15 credits) SCES01H5

MAIN OBJECTIVES
To introduce students to the geological histories, and geological processes, of other planets, and to illustrate how this knowledge has led to our current understanding of the origin and evolution of the Solar System.

The module is designed to give students taking the B.Sc. Degree in Planetary Science with Astronomy and the Certificate in Planetary Geology with a basic introduction to planetary geology, with particular emphasis on the Solar System beyond the Earth-Moon system.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
Knowledge and understanding of the basic geology and geophysics of the other planets
Understanding of the various techniques used to acquire geological knowledge of other planets
Understanding of how a comparison of the geologies of the different planets informs our understanding of the origin and evolution of the Solar System as a whole

COGNITIVE SKILLS
Understanding of scientific hypothesis development and testing; Ability to relate specific knowledge to a broader context.

SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
Analysis and interpretation of planetary remote sensing data; Interpretation of images; creation of maps; interpretation of maps; Ability to transfer geological knowledge gained in the context of the Earth to wide range of different planetary environments.

Demonstrate knowledge of the specific aspects of planetary geology outlined in the syllabus.
Demonstrate an understanding of how this knowledge has been arrived at, and the relationship between theories, hypotheses and observations in the planetary sciences.

GENERAL/TRANSFERABLE SKILLS
Familiarity with basic scientific concepts; Writing and presentation skills; Interpreting numerical and graphical data

PREREQUISITES
Must take “Geology of the Solar System I” before this module, and have either completed “Introduction to Geology” or take it concurrently, as specified in the Programme Specification.

LECTURE CONTENT
Geology of Mars, Geology of Venus, Geology of Mercury, Geology of outer Solar System Moons, Introduction to Planetary Atmospheres, Introduction to Asteroids, Meteorites and Comets
Origin of the Solar System

PRACTICAL CONTENT
Students will have the opportunity to examine hand specimens and petrographic thin-sections of various kinds of meteorite and/or lunar samples, and perform analyses of planetary remote-sensing data.


MODULE EVALUATION
One 2.5 hour written examination (85%) and continuous assessment of practical and written work (15%)

LECTURER TBC
MODULE OUTLINES LEVEL 6 (3$^\text{rd}$/4$^\text{th}$ YEAR MODULES)

NASA image
PETROLEUM GEOLOGY (15 credits) SCES018H6

MAIN OBJECTIVES
Many of our students seek employment in the oil and gas industry after graduation. This module aims to provide them with an understanding of the principles of petroleum geology and demonstrate how knowledge of geology can be applied in the exploration and production of oil and gas.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
Understanding of the essential components of a hydrocarbon play, which includes source rocks, reservoir rocks, trap formation as well as maturation and migration of hydrocarbons.

COGNITIVE SKILLS
Understanding of scientific hypothesis development and testing. Ability to relate specific knowledge to a broader context.

GENERAL/TRANSFERABLE SKILLS
Comprehension of scientific data and papers. Interpreting data. Use of graphs and tables. Written presentation skills. Oral presentation skills.

PREREQUISITES
Principles of Sedimentology

LECTURE CONTENT
Principles of Petroleum Geology: Onshore UK case study, source rock deposition, productivity versus preservation, maturation and migration of hydrocarbons, reservoir rocks, traps for oil and gas, petroleum geology of the North Sea, North Sea reservoirs, student poster presentations, production geology, exploration geology, basin analysis

PRACTICAL CONTENT
Poster presentation on North Sea Oil field

LEARNING OUTCOMES
On successful completion of this module a student will be expected to be able to:
- Understand the essential features of a hydrocarbon play.
- Explain where oil and gas come from.
- Able to attend an interview with a petroleum exploration or production company.

Module Evaluation
One 2.5 hour examination (75%) and Poster presentation on North Sea Oil field (25%)

Recommended Reading:
There is no set text book for this module but these two books provide useful background reading in addition to journal articles.


LECTURER: Professor Charlie Bristow
METAMORPHIC PROCESSES (15 credits) SCES037H6

MAIN OBJECTIVES
The module is designed to give students on the undergraduate programmes, an opportunity to learn about 'cutting edge' developments in contemporary metamorphic processes and petrology from active researchers in the field. To this end, the module will consist of a series of 11 lectures given by Birkbeck staff and invited researchers from the joint Birkbeck/UCL research school

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
After completing the module, students will have a thorough understanding and appreciation of the current state of research in metamorphic processes and where those activities are focused. In addition, through the completion of a theoretical and practical assessment, students will gain experience in assimilating information from the literature and knowledge gained from practical work and be able to present it in a coherent and intelligible manner.

Metamorphic Processes will introduce the concepts of current research ideas into petrogenesis of metamorphic rocks. The module will show the importance of structural and textural development and how these relate to tectonic movements on the mega, meso and micro-scale. Students will integrate data gained from thin-section analysis and begin to understand the complexities of multiple deformational events recorded in suites of metamorphic rocks. This advanced module would extend the student knowledge and develop an understanding of current research ideas relating structural and textural features to metamorphic processes such as mineral growth during plate tectonic movements and mountain building.

COGNITIVE SKILLS
On successful completion of this module a student will be expected to be able to demonstrate an in-depth knowledge and understanding of metamorphic processes and how these relate to tectonic movements on a local and global scale. Students will not only develop individual study skills but will also gain in practical and writing skills as well as a comprehension of current research directions.

PREREQUISITES: Introduction to Geology, Foundations of Mineralogy Metamorphic Petrology

LECTURE CONTENT
1. Thermodynamics and mineral reactions
2. Geothermometry/Geobarometry
3. Patterns of low-grade metamorphism in metapelitic and metabasic rocks
4. Isotopic dating of low-grade metamorphic rocks
5. P-T-t paths and Tectonic Environment, heat and fluid flow
6/7. Metamorphic textures and processes
8. High temperature metamorphism and anatexis
9. Metamorphic core complexes and gneiss domes
10. Metamorphism and mountain belts

RECOMMENDED READING
To be confirmed by Steve Hirons – email:  s.hirons@bbk.ac.uk

MODULE EVALUATION
Critical review of current research paper (A four-page appraisal of a research paper) 10%
Practical assessment (Completion of a practical workbook) 40%
Final 3 hour unseen exam 50%

LECTURER  Steve Hirons
STRUCTURAL GEOLOGY II (15 credits) EASC018H6

MAIN OBJECTIVE
To address topics of current interest in structural geology and tectonics.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
Knowledge and understanding of advanced concepts in structural geology and their relationships with plate tectonics, the hydrocarbon and minerals industries and seismic hazard analysis.

COGNITIVE SKILLS
Hypothesis development and testing using analysis of databases, theoretical understanding of relevant concepts, critical assessment of results and outcomes. Drawing and interpreting geological cross-sections using advanced section balancing techniques.

SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
Awareness of relevant databases and their use in studies of geology and geophysics. Reading and interpreting geological maps. Interpreting seismic reflection profiles in terms of structural geology. Interpreting the microstructural evolution of fault zones using a petrological microscope.

GENERAL/TRANSFERABLE SKILLS (INCLUDING KEY SKILLS)
Writing, comprehension of scientific data and papers, mathematical calculation, manipulation of data using relevant software/research techniques, independent study, IT skills. Use of an electronic library. Map reading/interpretation and 3D visualisation, cross-section construction, interpretation of seismic reflection data and microstructural interpretation.

PREREQUISITES
A good pass in Structural Geology I or equivalent.

CONTENT AND ORGANISATION
Methods used for validating cross-sections to investigate the significance of strain accumulation during formation of fault-related folds. Data from the Western Alps to assess the links between the superficial and deep structure. Data from areas of continental extension to assess structural geometries and mechanisms of continental extensional tectonics. Theoretical models of faulting, case studies of earthquakes and rock deformation experiments to assess the links between fluid migration, faulting and earthquakes. Compressional structures in pre-existing extensional basins; Inversion Tectonics. Structures associated with emplacement of salt bodies and igneous intrusions; interplay between regional tectonic stresses and gravitational forces.

PRACTICAL WORK
Examination of structural geometries on published maps and cross-sections; Interpretation of deep seismic reflection profiles, seismic refraction profiles and gravity data; Interpretation of seismic reflection profiles from oil and gas fields; Mohr diagrams; Flinn plots and the centre-to-centre methods of strain analysis; Restoration of cross-sections using line-length and excess-area methods; Examination of the microstructures and deformation mechanisms of brittle fault-rocks.

RECOMMENDED READING
Recent research papers will be recommended.

MODULE EXAMINATION
One 3-hour theory paper and one 3-hour practical paper.

LECTURER:  Professor Gerald P Roberts
VERTEBRATE PALEONTOLOGY (15 credits) SCES05H6
(replaces Advanced Palaeontology)

MAIN OBJECTIVES
This module covers the origin and evolution of the vertebrates, and the interpretation of the vertebrate fossil record. The module will introduce all of the main vertebrate groups, living and extinct, and discuss their evolution and interrelationships. Particular emphasis will be placed on major evolutionary innovations such as the evolution of jaws and teeth, terrestrialisation, advanced senses and flight. Recent advances in the field in the form of newly discovered specimens and new methods will be discussed.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
On successful completion of this module a student will be expected to be able to:
- Demonstrate a clear overall knowledge of vertebrate evolution and the vertebrate fossil record
- Be familiar with the main methods used in vertebrate palaeontology
- Have the skills and knowledge necessary to investigate the skeletal anatomy of vertebrates
- Have the skills and knowledge necessary to study and collect vertebrate fossils in the field
- Apply critical and communication skills gained in this module to this and other fields

CONTENT AND ORGANISATION
Lectures will cover major topics in vertebrate palaeontology whilst associated practical classes will cover a range of associated topics including practical skills and skeletal anatomy. The lectures will focus on:
- Origin of the vertebrate and evolution of bone and jaws
- Evolution of teeth and the radiation of fish-like forms
- Radiation and innovations within the ‘fish’
- Sarcopterygians and terrestrialisation; amphibians
- Radiation of the amniotes and the parareptiles
- Early diapsids; the evolution of chelonia and squamates
- Archosaur radiation including crocodilians, pterosaurs and dinosaurs
- Bird-like dinosaurs and the origin of birds
- Early synapsids and the appearance of mammals
- Therian mammal radiation
- Primate evolution

PREREQUISITES
Invertebrate Palaeontology or equivalent

RECOMMENDED READING
To be introduced during the module.

MODULE EXAMINATION
One 3 hour theory examination (75%).
assessment (25%)

LECTURER: Dr Charlie Underwood.
MAGMATIC PROCESSES (15 credits) EASC029H6

OBJECTIVES
To introduce modern concepts of petrogenesis, including the major magmatic processes. To show the importance of geochemical data in the study of igneous petrology. To introduce students to the integration of thin-section petrography and geochemical data in order to understand the origin of suites of igneous rocks.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
Understanding modern concepts of igneous petrology
Relating petrographic and geochemical information to deduce origin of igneous rocks

COGNITIVE SKILLS
Interpreting information from thin-sections and integrating this with geochemical data
Developing reasoning based on evidence from thin-section observations and geochemical data

SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
Handling data in form of tables and graphs; Interpreting data, including chemical variation diagrams, isotope diagrams and trace element figures.

GENERAL/TRANSFERABLE SKILLS (INCLUDING KEY SKILLS)
Interpreting data; Numeracy; Scientific literacy; Use of graphs and tables.

PREREQUISITES
A pass in Igneous Petrology.

CONTENT AND ORGANISATION
The module will cover the following topics: the generation of magmas, their subsequent behaviour and evolution; application of trace elements and radiogenic isotopes to the study of the origin of igneous rocks. Tectonic setting of major igneous rock associations. Processes at constructive and destructive plate margins. Origin and evolution of alkaline rocks. Evidence for crustal contamination, magma mixing and liquid immiscibility in the formation and evolution of magmas. Practicals will consist of petrographic examination and description of igneous rocks in thin section, plus the application of chemical calculations to petrogenetic problems.

RECOMMENDED READING
*Wilson, M. Igneous Petrogenesis. 1988. Unwin Hyman (recommended)
N.B. An optical mineralogy textbook (such as a 2nd hand copy of Kerr’s “Optical Mineralogy”) will be useful for practical work.

MODULE EXAMINATION
One 3-hour theory paper (50%) and a portfolio of practical work (50%).

LECTURER
Professor Hilary Downes
ENVIRONMENTAL ISOTOPES (15 credits) SCES036H6

MAIN OBJECTIVES
To introduce modern concepts of isotope geochemistry; To develop practical skills in solving mathematical and conceptual isotope geochemical problems; To develop a critical understanding of the use of isotopes in determining past and present environmental concepts and change

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
This module provides an understanding of how isotope geochemistry is used to trace and determine the behaviour of the Earth’s environment, both in the present, and in geological history. Topics such as the evolution of the Earth’s atmosphere and oceans, the interaction between them and the continents, and the causes and consequences of environmental perturbations will be covered.

Students will develop practical skills in solving isotope geochemical problems, develop a critical understanding of current and past research in environmental isotope geochemistry, develop the ability to extract the fundamental results in a research topic and to summarise those results in a poster, and develop skills in isotope geochemical calculations and theory through completion of a portfolio of practical work.

COGNITIVE SKILLS
On successful completion of this module a student will be expected to be able to:

Subject-specific/Intellectual
Understand the (i) modern concepts of isotope geochemistry, (ii) the additional constraints and understanding isotope geochemistry provides to comprehension of the Earth’s environment. Analyse, evaluated and interpret multidisciplinary data. Develop evidence-based reasoning. Put subject-specific information into a broader context.

Practical/ Personal / Social
Interpreting data; Numeracy; Scientific literacy; Use of graphs and tables. Research well-defined subject matter and prepare and write reports. Written presentation skills. Independent study.

GENERAL TRANSFERABLE SKILLS
Critical analysis and understanding of data; dealing with scientific debate; presentation skills; scientific scepticism

PREREQUISITES: None

LECTURE CONTENT
1 – Concepts of isotope geochemistry; 2 – The source of Earth’s oceans; 3 – History of atmospheric oxygen: the first whiff; 4 – History of atmospheric oxygen: a breathable atmosphere; 5 – Climate stabilisation; 6 – History of atmospheric CO2; 7 – Oceanic chemistry and productivity; 8 – Chemical evolution of the Phanerozoic oceans; 9 – Timing and rates of continental change; 10 – Dating sea-level change; 11 – Isotopes in the Critical Zone

RECOMMENDED READING
Isotopes: Principals and Applications, 3rd. ed. Faure, G and Mensing, T.M.
Geochemistry: An Introduction, Albarede, F.
Isotope Geochemistry, White, W.M., Wiley

MODULE EVALUATION One 3 hour theory examination (70%), portfolio of practical work (20%), Poster Presentation (10%).
LECTURER Dr Philip Pogge von Strandmann
SCIENTIFIC COMPUTING AND DATA MODELLING (15 CREDITS)
SCES019H6

MAIN OBJECTIVES
The main aims of the module are to provide training in scientific computing and data modelling in geoscience through the use of the MATLAB platform. MATLAB is a relatively inexpensive, widely used and flexible computing platform, allowing both face-to-face and distance-learning students to engage with computing exercises and learning materials on their own computers or computing devices. The data modelling components will complement the theories introduced in the Geophysics module, whereas the scientific programming components may be relevant to project work in the BSc programmes. Numerical and statistical methods used in scientific computing will also be introduced in the module.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
On successful completion of this module a student will be expected to be able to:

Subject and practical:
1. Understand and write MATLAB codes, including data visualisation, processing, analysis and modelling
2. Apply MATLAB codes to geoscience datasets;
3. Interpret and critically evaluate results from data modelling;
4. Apply numerical and statistical methods to scientific computing and data modelling.

Intellectual:
1. Evaluate the characteristics, limitations and complexity of datasets and models in geoscience;
2. Develop an integrated approach to programming and modelling;
3. Evaluate the limitations of scientific computer codes.

RECOMMENDED READING

ASSESSMENT
Written examination (50%) and one written report (50%). TBC

LECTURER
Dr James Hammond
PALAEOECOLOGY (15 credits) EASC039H6

MAIN OBJECTIVES
The module will introduce and build upon the principles and applications of fossil preservation, ecology of fossil organisms and the changes in life through geological time. The module concentrates on applications of theory and enhances relevant skills in addition to knowledge.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
Fossil preservation involving both biotic and geological processes; Nature of bias within the fossil record; Exceptional fossil assemblages and their significance; Relationships between fossil assemblages and their depositional and preservational palaeoenvironments; Biotic and abiotic limitations on the spatial and temporal distribution of organisms; The nature of extinction events.

COGNITIVE SKILLS
Observational skills using hand specimens and in the field. Detailed recording of quantitative and qualitative data.

SUBJECT SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
Interpretation of fossil assemblages. Interpretation of palaeoenvironments

GENERAL/TRANSFERABLE SKILLS
Detailed observation. Interpretation based on incomplete data. Time and project management. Integration of theory. Written presentation skills. Oral presentation skills.

PREREQUISITES
Invertebrate Palaeontology, Principles of Sedimentology, Earth History

CONTENT AND ORGANISATION
Decay, quality of assemblages; scavenging, transport; shell beds; diagenesis; exceptional faunas. Marine environment and palaeoenvironment; Communities, tiering, diversity; replacement; Trace fossil assemblages; Palaeobiogeography.

RECOMMENDED READING

FIELDWORK
One day field class to Sheppey, Kent

MODULE ASSESSMENT
3 hour combined practical and theory examination (70%) Written project (20%) Oral presentation (10%)

LECTURER:
Dr Charlie Underwood
GLOBAL TECTONICS (15 credits) EASC041H6

MODULE AIM
To provide a global understanding of causes and consequences of present and past plate tectonic and associated geodynamic processes.

COGNITIVE SKILLS
Analysing, evaluating, and interpreting multidisciplinary data.
Development of evidence-based reasoning.

SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
Ability to work with information from a diverse range of sources.
Interpreting field observations and analytical data, use of graphs and tables.
Researching defined subject matter and preparing and writing reviews.

CONTENT AND ORGANISATION
The internal structure of the Earth and its outer shell.
Elements of plate tectonic theory. What are plates? How do they move?
Models for direction, magnitudes and rates of plate motion.
Mineral composition and thermo-mechanical influences on global tectonics.
How do plates and plate margins evolve through time?
Subduction zone processes, extension and rifting. Global tectonics and sedimentary basin development.
Reconstructing plate collision histories and the development of large orogens such as the Himalaya-Tibet.

PREREQUISITES
Good passes in Structural Geology 1, Geophysics, and Igneous and Metamorphic Petrology are preferred.

RECOMMENDED READING
A significant component of the module material will come from research papers available online. The following textbooks also contain many useful chapters:


MODULE ASSESSMENT
One 3 hour written paper (70%) Course work (30%).

LECTURER
Professor Andy Carter
GEOLOGICAL HAZARDS (15 Credits) EASC044H6

MAIN OBJECTIVES
To convey an understanding of the origin and scale of natural geological hazards including earthquakes and landslips, volcanic hazards and floods. To show how the risk associated with geological hazards can be reduced, and to introduce the practical application and limitation of hazard monitoring and prediction.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
Students will learn about earthquake, volcanic and tsunami hazards, and secondary hazards.

COGNITIVE SKILLS
Analysing, evaluating, and interpreting data; knowledge-based reasoning; information assimilation and recollection.

SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
Hazard mapping; Appreciating the role of the geologist in hazard mitigation.

GENERAL/TRANSFERABLE SKILLS (INCLUDING KEY SKILLS)
Graphical presentation of information in the form of a poster; Interpreting practical experimental data. Presenting work to a deadline.

PREREQUISITES
Good pass in Introduction to Geology and Structural Geology preferred, but will also be open to Birkbeck Geography, Environmental Science and UCL Environmental Geoscience students.

CONTENT AND ORGANISATION
Earthquake hazards including wave types, origin and location of earthquakes, magnitude scales, ground acceleration, effects of bedrock geology; long-term prediction, historical records, palaeoseismology, recurrence intervals, fault slip-rates, and fault behaviour models. Short-term prediction and mitigation. Landslides, classification and translation processes, monitoring and prediction. Volcanic hazards, types of eruptions, scale of eruption., Volcanic mudflows (lahars), their origin and effects. Methods of monitoring and predicting volcanic eruptions, levels of volcanic hazard alert. Mitigation of volcanic risks. Tsunamis, their origin, recurrence and monitoring and warning times. Occurrence in the geological record. Floods in the geological record including exceptional high magnitude floods. Discussion on the scale of recent and historic natural disasters.

RECOMMENDED READING

ASSESSMENT
1 essay, 1 presentation, 2 practical reports, 1x 3-hour written exam.

LECTURERS Prof Charlie Bristow (Module Co-ordinator); Prof Gerald Roberts.
CHEMISTRY AND POLLUTION OF WATER, SOIL AND AIR
(15 credits) EASC045H6

OBJECTIVES
To provide a global understanding of the geochemistry of water, soil and air at the Earth, including the impact of changes brought about by human activity (pollution, climate change, etc.). To develop practical skills in solving geochemical problems. To develop a critical understanding of current and past research in low-temperature geochemistry.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
Understand the (i) underlying controls on water, soil and air chemistry and pollution, (ii) concepts of geochemical cycles and relationships between water, soil and air; (iii) anthropogenic influences on natural Earth surface geochemistry.

COGNITIVE SKILLS
Analyse, evaluate and interpret multidisciplinary data. Develop evidence-based reasoning. Put subject-specific information into a broader context.

SUBJECT-SPECIFIC PRACTICAL/ PROFESSIONAL SKILLS
Scientific literacy. Graphical skills. Ability to prepare a properly documented review article. Ability to access a variety of information sources. Ability to solve difficult chemical problems.

GENERAL/ TRANSFERABLE SKILLS
Mathematical, writing, and communication skills; self-motivation, time management and organisation; data analysis; ability to write concise reviews of technical subjects.

PREREQUISITES
Pass in A-level Geology or Introduction to Geology; Pass in Introduction to Geochemistry.

CONTENT AND ORGANISATION
Geochemical cycles, natural and polluted ocean, estuary, river and ground waters, chemical weathering, soil composition and chemistry, contaminated land, waste disposal, surface radioactivity, atmospheric chemistry and pollution.

RECOMMENDED READING
Selected readings from the journals Applied Geochemistry, Geochimica et Cosmochimica Acta, Chemical Geology, and others that are available through ScienceDirect.

MODULE ASSESSMENT
One 3-hour theory paper (70%). Assessed practical report (30%). Practicals will consist of exercises in handling and interpretation of geochemical data, for which access to the computer program Excel (or a similar spreadsheet program) will be needed.

LECTURER TBC
EARTH'S RESOURCES & RAW MATERIALS (15 credits) EASC048H6

MAIN OBJECTIVES
This advanced module aims to cover the formation of economic deposits with examples from the extractive industries. Key subjects we will cover include the principles and economics of ore geology, the features and genesis of deposits of magmatic, hydrothermal and sedimentary origina and the environmental impacts of mining.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
Students will gain understanding in the economics of ore deposits.

COGNITIVE SKILLS
Information assimilation and recollection.

SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
Essential concepts in ore geology and ore exploration.

GENERAL/TRANSFERABLE SKILLS (INCLUDING KEY SKILLS)
Familiarity with scientific concepts. Observational, writing and interpretation of data skills.

PREREQUISITES
The course is suitable for students on the BSc Geology and BSc Environmental Geology programmes. Some knowledge, and an interest in sedimentology (Principles of Sedimentology) and Igneous Petrology and Metamorphic Petrology is required.

CONTENT AND ORGANISATION
The module examines the formation and distribution of ores deposits of economic importance. Lecture topics are concerned with the economics of ore deposits, and ores/economic deposits developed in sedimentary rocks, including coal, placer deposits, evaporites, residual deposits and ironstones, and those developed in igneous and metamorphic rocks (e.g., volcanogenic massive sulphides, diamonds). Building and industrial resources, and the environmental impacts of mining, will also be discussed.

TEXTBOOKS

ASSESSMENT
One 3-hour theory paper (70%); assessed essay (15%) and assessed practicals (15%)

LECTURERS Dr Andrew Beard
PALAEOCLIMATOLOGY (15 CREDITS) SCES014H6

MAIN OBJECTIVES
Palaeoclimatology is a relatively new geological discipline that has been the focus of intense research in recent years due to societal concerns about anthropogenic climate change. The aim of this module is to give students a solid understanding of the principals of palaeoclimatology, natural climate change in deep time and an appreciation of the role of palaeoclimatology in the prediction of future climate change.

KNOWLEDGE AND UNDERSTANDING
This module will take an Earth System approach, covering climate forcing and climate responses across the full range of spatial and temporal scales, from the Precambrian to the Holocene. Students will be introduced to the wide range of geochemical proxies and climate modelling approaches used in palaeoclimatology. By the end of this module, students will be able to evaluate future climate change scenarios and formulate their own opinions on the issue of anthropogenic climate change.

COGNITIVE SKILLS
Analysing and interpreting palaeoclimate proxies from a range of sources (e.g. geochemical, palaeobiological and stratigraphical). Evaluating the validity of different climate proxies.

SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
Proxy evaluation, model-data comparison.

GENERAL / TRANSFERABLE SKILLS
Producing spread-sheets and plotting graphs in Excel. An in-depth understanding of the science behind anthropogenic climate change.

PREREQUISITES
Introduction to Geology is advised, but is not essential.

CONTENT AND ORGANISATION

Practicals: The practical sessions will include paper-based and excel-based exercises, and will give students hands-on experience of the methods used in palaeoclimatology, such as energy balance models, stable isotope datasets, and time-series analysis. There will also be the opportunity for students to produce their own dendrochronological record of late Holocene climate.

RECOMMENDED READING

MODULE ASSESSMENT
Examination (3 hours): 70%
Laboratory Practical: 10%
Essay (2000 words): 20%

LECTURER: Dr Phil Hopley
PHYSICAL PRINCIPLES OF ASTRONOMY (15 credits) SCES022H6

MAIN OBJECTIVES
The module is designed to give students taking the B.Sc. Degree in Planetary Science with Astronomy a quantitative understanding of key physical processes and concepts that underpin the disciplines of astronomy and astrophysics. Specific topics to be covered are outlined below.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
The module is designed to provide a quantitative understanding of key physical and astrophysical concepts underpinning the science of astronomy.

Key topics covered will be: Celestial Mechanics (including classical mechanics, gravity, orbits), Time (solar time, sidereal time, atomic time), Electromagnetic Radiation (wave/particle duality, blackbody radiation, Doppler effect); The Analysis of Starlight (stellar luminosity, stellar colours, effective temperature; atomic basis of spectroscopy); Interstellar Processes (interstellar reddening, interstellar spectroscopy; dust properties; interstellar chemistry), and High-Energy Astrophysics (introduction to special relativity, cosmic rays, physics of neutron stars and black holes).

COGNITIVE SKILLS
Demonstrate knowledge of the specific aspects of astronomy and astrophysics outlined in the syllabus, demonstrate an understanding of how this knowledge has been arrived at and the relationship between theories, hypotheses and observations in the planetary sciences, demonstrate skills such as writing, numerical reasoning, and the comprehension of scientific concepts.

GENERAL TRANSFERABLE SKILLS
Comprehension of scientific data and papers. Interpreting data. Use of graphs and tables. Written presentation skills. Oral presentation skills.

PREREQUISITES
Foundations of Astronomy, Geophysics

LECTURE CONTENT
Celestial Mechanics (2 lectures), Time (1 lecture), Electromagnetic Radiation (1 lecture), Analysis of Starlight (3 lectures), Interstellar Processes (2 lectures), High Energy Astrophysics (2 lectures)

RECOMMENDED READING
‘Introduction to Astronomy and Cosmology’ by Ian Morison (John Wiley, 2008) [Also the set book for Foundations of Astronomy – students should be familiar with this book].

‘Introductory Astronomy and Astrophysics’ by Stephen A. Gregory and Michael Zeilik (Saunders Golden Sunburst Series, 1997) [Still an excellent introduction to the quantitative side of astrophysics. Too expensive to buy, but the Birkbeck library has copies].


MODULE EVALUATION One 2.5 hour written examination (75%) and Assessed work: Two problem sheets will be set during the module to assess students’ understanding of the module content (25%)

LECTURER Professor Ian Crawford
REMOTE SENSING AND PLANETARY SURFACES (15 credits)
SCES035H6

MAIN OBJECTIVES
The module will provide an advanced understanding of the processes governing the evolution of planetary surfaces and the remote sensing methods used in their exploration. By integrating the technical methodology with the most recent discoveries and paradigms, students will learn not only the current state of knowledge in planetary surface processes, but also how to critically assess the advantages and limitations of different remote sensing techniques.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
The module will provide an advanced understanding of the processes governing the evolution of planetary surfaces and the remote sensing methods used in their exploration

COGNITIVE SKILLS
On successful completion of this module a student will be expected to be able to: analyse, evaluate, and interpret remote sensing data; demonstrate an understanding of how different observational techniques can be used to test hypotheses and form theories regarding planetary surface processes.

SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
Knowledge of the specific aspects of remote sensing and planetary surfaces processes; basic knowledge of Geographic Information Systems; spectroscopy for determining composition.

INTELLECTUAL:
Demonstrate an understanding of how different observational techniques can be used to test hypotheses and form theories regarding planetary surface processes.

GENERAL/TRANSFERABLE SKILLS
Familiarity with basic scientific concepts; Writing and presentation skills; The use and interpretation of image, numerical and graphical data.

PREREQUISITES
Geology of the Solar System I and Geology of the Solar System II

LECTURE CONTENT

Recommended reading TBC

MODULE EVALUATION
Practical activity: Two practicals (20%), Report and presentation: One 2000 word report and 10 minute presentation (20%), Exam: One 3 hour written examination (60%)

LECTURER TBC
EXPLORATION AND MODELLING OF PLANETARY INTERIORS (15 CREDITS) SCES047H6

MAIN OBJECTIVES

- To introduce contemporary concepts in planetary exploration, using these to build a picture of planetary interiors.
- To provide a descriptive foundation for the concepts involved in this work.
- To develop a critical awareness of the limitations inherent in studying such remote and inaccessible parts of planetary bodies.

On successful completion of this module a student will be expected to be able to:

Subject-specific:

Understand the physical and observational basis for remote sensing of planetary interiors as well as the range of laboratory techniques and computer models required to interpret these data;

Intellectual:

(i) Synthesize diverse pieces of information into a coherent story in the context of lab- and computer-based testing of observationally formulated hypotheses; (ii) appreciate the limitations inherent in various techniques and be aware of over-interpretation or speculation in the literature;

Personal / Social:

Prepare a presentation that collates diverse information into a succinct and interesting narrative.

Lecture content

Lecture 1: Planetary compositions and accretion; Lecture 2: Constraints from gravity and planetary spin; Lecture 3: Constraints from seismic waves to probe planetary interiors; Lecture 4: Constraints from planetary magnetism; Lecture 5: Constraints from Exoplanets; Lecture 6: Sources of heat and energy budgets of planets; Lecture 7: Laboratory methods to learn about materials under planetary conditions; Lecture 8: Properties of planetary ices; Lecture 9: Properties of silicate planetary mantles; Lecture 10: Properties of planetary metallic cores; Lecture 11: Planetary crusts;

Assessment and Weighting

Written assignment 20% Set of Lecture Notes on a topic appropriate to the module and not covered in the course notes. N.B. Students do NOT have to give the lecture, just write the notes.

Two sets of calculations 10% Mathematical calculations and interpretations of planetary data

Written examination 60% 3 hr written exam

Pre-Requisites

Geology of the Solar System I and Geology of the Solar System II

Reading List:

To be provided on Moodle.

Tutor: Professor Hilary Downes
VOLCANISM IN THE SOLAR SYSTEM (15 credits) EASC059H6

OBJECTIVES
This module aims to: 1) introduce students to the nature of volcanism on the Earth and other planets; 2) expand their understanding of the processes that drive volcanism; 3) explain the differences in volcanic activity on different bodies in the Solar System; 4) show how volcanic activity is related to the chemical and physical properties of magmas and the nature of the planetary body. A mixture of terrestrial and planetary material will be presented.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
Understanding of the diversity of magmas that form volcanoes on the terrestrial planets and icy satellites; understanding volcanic processes and products.

COGNITIVE SKILLS
Ability to synthesise information from different sources. Hypothesis testing. Critical assessment of results.

SUBJECT SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
Ability to distinguish and classify volcanic structures and products using maps, hand-specimens and thin-sections.

GENERAL/TRANSFERABLE SKILLS
Poster presentation skills (use of PC, software packages, scanner, web, printer). Numeracy, scientific literacy, computer literacy

PREREQUISITES
Passes in Introduction to Geology, Foundations of Mineralogy, Igneous Petrology.

CONTENT AND ORGANISATION
The module will consist of 11 lectures and practicals on volcanic activity on Earth (6 lectures), the Moon, Mars, Venus, Io and the icy moons. Practical material will include hand-specimens and thin-sections of volcanic rocks, together with maps and digital images of volcanoes, analogue modelling of lava flows, and sieving of an unconsolidated pyroclastic deposit.

RECOMMENDED READING
“Volcanoes” by P Francis and C Oppenheimer (2nd edition), OUP. 2004

MODULE EXAMINATIONS
The module will be assessed on a series of practical assignments (15%), a poster on a specified topic (10%) and a 3 hour written examination (75%).

LECTURER
TBC
ADVANCED TOPICS IN PLANETARY SCIENCE (15 credits)
EASC072H6

MAIN OBJECTIVES
The module is designed to give students taking the B.Sc. Degree in Earth and Planetary Science an opportunity to learn about ‘cutting edge’ developments in contemporary planetary science through directed reading of the recent research literature. After completing the module, students will have a good understanding of the present state of planetary science, and where current research activities are focused. In addition, through completion of a 3000 word report, and associated presentation, on a contemporary planetary science topic students will gain experience in assimilating information from the literature and presenting it in an intelligible manner to non-specialists.

PREREQUISITES
Geology of the Solar System I and II; Introduction to Astrobiology (EASC064U)

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
Knowledge of the focus of contemporary research activities in planetary science, in particular as gained by recent space missions and advances in analytical and computational techniques.

COGNITIVE SKILLS
The student will acquire knowledge and understanding of processes relevant to the astronomical, geological and geophysical evolution of planetary bodies and an ability to relate specific knowledge gained in particular research fields to a broader context of human knowledge.

SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
This is not a primarily practical module, although students will gain experience in online literature searching and presentation skills.

GENERAL/TRANSFERABLE SKILLS (INCLUDING KEY SKILLS)
The student will gain skills such as writing, comprehension of scientific concepts, independent study and experience in presenting knowledge gained to their peers and other interested individuals.

MODULE EXAMINATION
Written Examination (60%) One 3 hour written paper
Brief summaries (20%) Summaries of key points made in each of the assigned papers (no more than 500 words each)
Written mini-project Report (20%) 3000 words

LECTURER: PROF IAN CRAWFORD
COMETS, ASTEROIDS AND METEORITES (15 credits) SCES002H6

OBJECTIVES
To discuss the origin and evolution of minor bodies in the Solar System. To introduce students to the scientific literature on the nature and origin of comets, asteroids and meteorites.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
Major concepts such as the structure and composition of comets and asteroids, missions to comets and asteroids, variations in meteorite compositions and mineralogy, the nature of the meteorite record.

COGNITIVE SKILLS
Analysing, evaluating and interpreting data; evidence-based reasoning; hypothesis testing.

SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
Scientific literacy; ability to use data to construct arguments; interpreting data; integration of results from observation and experimentation.

GENERAL/TRANSFERABLE SKILLS (INCLUDING KEY SKILLS)
Numeracy; ability to interpret data tables and graphs; report writing; synthesis of information.

PREREQUISITES
Pass in A-level Geology or Introduction to Geology; Pass in Introduction to Geochemistry.

CONTENT AND ORGANISATION
Architecture of the Solar System; Dust in the Solar System; Structure and composition of comets; Samples from comets; Asteroid compositions and missions to asteroids; undifferentiated meteorites; fossil meteorites; iron cores of differentiated asteroids; asteroidal basalts, cumulates and mantle rocks; rubble piles and regolith breccias; meteorites from Mars.

ASSESSMENT COURSEWORK
Students will produce a set of lecture notes on a topic of importance in the module. A list of important papers will be provided. Students will also hand in a portfolio of interpretations of results of analyses of meteorites etc, by different methodologies.

RECOMMENDED READING
Mainly journal articles available via Moodle.

MODULE EXAMINATION
One 3-hour theory paper (60%). Assessed lecture notes (20%). Practical material (20%).

LECTURER: Professor Hilary Downes
TECTONIC GEOMORPHOLOGY (15 credits) EASC066H6

MAIN OBJECTIVES
To understand the different processes (including heat flow, isostasy, tectonics, erosion, climate) that collectively defines the Earth’s landscape, past and present.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
Learn how landscapes form and evolve over the short (<10⁴ yrs), medium (10⁵ yrs) and long-term (≥10⁶ yrs). Understand the concepts of feedback systems between tectonics, surficial processes and climate. How to use landscape archives to determine the magnitude-frequency of future events, including seismicity and climate change.

COGNITIVE SKILLS
Analysis, evaluation and interpretation of multi-component datasets. Putting subject-specific information into a broader context. Development of evidence-based reasoning

SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
Handling data from tables and graphs and web-based data archives including Google Earth and GeoMapApp. Synthesis of information from a range of sources. Ability to think in 3 dimensions.

GENERAL/TRANSFERABLE SKILLS (INCLUDING KEY SKILLS)
Comprehension of scientific data and papers. Interpreting data. Use of graphs and tables. Written presentation skills.

PREREQUISITES
A pass in Introduction to Geology

CONTENT AND ORGANISATION
The lectures examine how interaction between tectonics, heat flow, climate change, erosion and local and regional isostasy control the Earth’s surface topography.

Lecture 1: Introduction to tectonic geomorphology
Lecture 2: Topographic change: Isostasy
Lecture 3: Tectonic geomorphology of rifts and passive margins
Lecture 4: Terrain mapping and analysis
Lecture 5: Active tectonics and rivers
Lecture 6: Topographic metrics
Lecture 7: Establishing timing in a landscape.
Lecture 8: Geomorphology and climate
Lecture 9: Mountain belt evolution over the long-term
Lecture 10: Mountain belt evolution over the medium to short term

RECOMMENDED READING


MODULE EXAMINATION
3 hour Theory examination (70%); Interpretative exercises (30%)

LECTURER Professor Andy Carter
FIELD CLASS AND PROJECT MODULES
ASSESSED FIELD TECHNIQUES 4 x (15 credits). EASC053H5, EASC054H5, EASC056H6, EASC055H6

MAIN OBJECTIVES
To give students experience of techniques involved in geological fieldwork.

ORGANISATION AND CONTENT
The first three of these modules are compulsory for BSc Geology and BSc Environmental Geology students, and we strongly encourage students to attend all four fieldwork modules.

First year students who do not confirm attendance and pay the deposit for Assessed Field Techniques 1 module will be moved to the BSc Earth Science degree.

They are optional for students on the BSc Earth Science, and Planetary Science with Astronomy. They consist of the work done by students in each of three/four Easter field classes of a normal degree programme. Performance in the field (accuracy of observations and records) and quality of interpretation are assessed during and following each 10 day Easter field class by the field class leader in consultation with demonstrators (if any).

Techniques taught and assessed include geological mapping in a variety of terrains and at a variety of scales using base maps and aerial photographs; recording geological structures on maps and aerial photographs and on photographs of vertical sections; and the field description and logging of sedimentary, metamorphic and igneous rocks.

ASSESSMENT
One 15-credit module for each field class. After each field class the relevant notebooks/reports/maps etc are submitted for assessment. All assessed material from each of the four field classes must be retained by the student for presentation to the examiners in the student’s final year.

RECOMMENDED READING
The Geological Society of London Handbook series:

<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barnes</td>
<td>Basic geological mapping.</td>
</tr>
<tr>
<td>McClay</td>
<td>The mapping of geological structures.</td>
</tr>
<tr>
<td>Tucker</td>
<td>The field description of sedimentary rocks.</td>
</tr>
<tr>
<td>Thorpe &amp; Brown</td>
<td>The field description of igneous rocks.</td>
</tr>
<tr>
<td>Fry</td>
<td>The field description of metamorphic rocks.</td>
</tr>
</tbody>
</table>

SPECIAL REQUIREMENTS
Hard hat, waterproof jackets/outwear, walking boots, hand lens, field notebooks, compass, clinometer, pencils, mapping pens, tape measure, geological hammers. A GPS instrument will be useful.

LECTURERS
All members of staff are involved.
FIELD CLASS FOR PLANETARY SCIENCE  SCES048H6 (15 credits)

**MAIN OBJECTIVES**
To give Planetary Science students experience of preparing for, planning, undertaking and reporting on a field excursion.

**ORGANISATION AND CONTENT**
This module is optional for students on the BSc Planetary Science with Astronomy degree. Other qualified students may attend with the agreement of the module organiser.

It consists of work done by students firstly using remote sensing techniques to produce an individual geological interpretation of a region of a planetary surface (e.g. the island of Lanzarote in the Canary Islands), and then by the group of students visiting different locations on the selected region. The group will hold a meeting prior to commencing the excursion, to decide which locations should be visited (subject to the advice of the module organiser).

Techniques taught and assessed include geological mapping at a variety of scales using base maps, aerial photographs and/or satellite images; recording geological structures on maps and aerial photographs; and the field description of outcrops and rocks.

**ASSESSMENT**
Each student will submit an individual illustrated interpretation of the geology of the selected region before the field class (40% of the marks). After the field class, the relevant individual notebooks/reports/maps etc will be submitted for assessment in the form of a final report (60% of marks).

**PRE-REQUISITES**
Students must have attended and passed Assessed Field Techniques 1. Students will also be expected to have attended SCES035H6 (Remote sensing and planetary surfaces).

**SPECIAL REQUIREMENTS**
Appropriate jackets/hats, walking boots, hand lens, field notebooks, compass, clinometer, pencils, mapping pens, GPS.

**LECTURERS**
All members of Planetary Science staff are involved.
PROJECT  BSc EARTH SCIENCES (60 credits) SCES016D6

MAIN OBJECTIVES
To give students experience of independent work on a topic of interest within the Earth Sciences and the preparation of a scientific report. Normally taken by students who are unable to undertake a map and thesis, or for whom a project would be more appropriate. Each student will be allocated a supervisor who will be responsible for advice on all aspects of the module.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT.
Knowledge and understanding of the basic tenets of the particular area of Earth Sciences for the project. Hypothesis development and testing skills through analysis of the data obtained for their project, theoretical understanding of relevant concepts, critical assessment of results and outcomes and experience of real situations during the project work.

SUBJECT SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
Collect and analyse data relevant to the area of geology related to their project using a variety of research techniques. The student will be able to critically assess the quality of the scientific method, data, results, conclusions and implications of relevant studies.

GENERAL/TRANSFERABLE SKILLS (INCLUDING KEY SKILLS)
Scientific writing, comprehension of scientific data and papers; manipulation of data using relevant software/research techniques; independent study; IT skills and confidence in their abilities to follow a problem through to its end.

CONTENT AND ORGANISATION
Students will be expected to choose a topic in consultation with a supervisor, who will also give instructions regarding field techniques and any laboratory work that is required for the project. Most of the work will be done independently. If field work/mapping is involved, two copies of 1:10 000 maps of the field area will be supplied by the Department of Earth and Planetary Sciences. If thin sections or laboratory analyses are necessary, these will be done in the Department after consultation with the supervisor. Students may be required to pay for the cost of other materials used in the project. Time spent on the project will normally be equivalent to that expected for the map and thesis.

Students will submit a 5000 word literature review, progress report and plan for year two of the project which is due at the end of the 2nd term of year 3 and worth 25% of the final mark. In addition, students will also deliver an oral presentation worth 15% of the total mark during year 4.

The project report will normally be up to 15,000 words and is worth 60% of the final mark.

RECOMMENDED READING
Students are expected to be familiar with the literature relating to their topic. A handbook with guidelines about undertaking projects and writing reports is available from the department.

MODULE EXAMINATION
The quality of the project and report is assessed by the examiners, supplemented by an oral examination by one of the external examiners.

TIMETABLE
Students will be allocated a project and a supervisor normally early in the second year and should begin their work on the project in the summer vacation, making their own arrangements.

LECTURER: Steve Hirons or Professor Gerald Roberts
PROJECT  BSc GEOLOGY (60 credits) SCES021D6

MAIN OBJECTIVES
To give students experience of independent work on a topic of geological interest, normally including at least 18 days of field mapping and 6 days of some other type of field work (e.g., sedimentary logging) and the preparation of a scientific report. Each student will be allocated a supervisor who will be responsible for advice on all aspects of the module.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT.
Knowledge and understanding of the basic tenets of the particular area of geology for the project. Hypothesis development and testing skills through analysis of the data obtained for their project, theoretical understanding of relevant concepts, critical assessment of results and outcomes and experience of real situations during the project work.

SUBJECT SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
Collect and analyse data relevant to the area of geology related to their project using a variety of research techniques. The student will be able to critically assess the quality of the scientific method, data, results, conclusions and implications of relevant studies.

GENERAL/TRANSFERABLE SKILLS (INCLUDING KEY SKILLS)
Scientific writing, comprehension of scientific data and papers; manipulation of data using relevant software/research techniques; independent study; IT skills and confidence in their abilities to follow a problem through to its end.

CONTENT AND ORGANISATION
Students will be expected to choose a topic in consultation with a supervisor, who will also give instructions regarding field techniques and any laboratory work that is required for the project. Most of the work will be done independently. If field work/mapping is involved, two copies of 1:10 000 maps of the field area will be supplied by the Department of Earth and Planetary Sciences. If thin sections or laboratory analyses are necessary, these will be done in the Department after consultation with the supervisor. Students may be required to pay for the cost of other materials used in the project. Time spent on the project will normally be equivalent to that expected for the map and thesis.

Students will submit a 5000 word literature review, progress report and plan for year two of the project which is due at the end of the 2nd term of year 3 and worth 25% of the final mark. In addition, students will also deliver an oral presentation worth 15% of the total mark during year 4.

The project report will normally be up to 15,000 words and is worth 60% of the final mark.

RECOMMENDED READING
Students are expected to be familiar with the literature relating to their topic. A handbook with guidelines about undertaking projects and writing reports is available from the Department.

MODULE EXAMINATION
The quality of the project and report is assessed by the examiners, supplemented by an oral examination by one of the external examiners.

TIMETABLE
Students will be allocated a project and a supervisor normally early in the second year and should begin their work on the project in the summer vacation, making their own arrangements.

LECTURER: Steve Hirons or Professor Gerald Roberts
PROJECT FOR BSc PLANETARY SCIENCE WITH ASTRONOMY (60 credits) SCES016D6

MAIN OBJECTIVES
To give students experience of independent work on a topic in Planetary Sciences and the preparation of a scientific report. Each student will be allocated a supervisor who will be responsible for advice on all aspects of the module.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT.
Knowledge and understanding of the basic tenets of the particular subject for the project. Hypothesis development and testing skills through analysis of the data obtained for their project, theoretical understanding of relevant concepts, critical assessment of results and outcomes and experience of real situations during the project work.

SUBJECT SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
Collect and analyse data relevant to subject related to their project using a variety of research techniques. The student will be able to critically assess the quality of the scientific method, data, results, conclusions and implications of relevant studies.

GENERAL/TRANSFERABLE SKILLS (INCLUDING KEY SKILLS)
Scientific writing, comprehension of scientific data and papers; manipulation of data using relevant software/research techniques; independent study; IT skills and confidence in their abilities to follow a problem through to its end.

CONTENT AND ORGANISATION
Students will be expected to choose a topic in consultation with a supervisor, who will also give instructions regarding techniques and any laboratory work that is required for the project. Most of the work will be done independently. If thin sections or laboratory analyses are necessary, these will be done in the Department after consultation with the supervisor. Students may be required to pay for the cost of other materials used in the project. Time spent on the project will normally be equivalent to that expected for the map and thesis. Students will submit a 5000 word literature review, progress report and plan for year two of the project which is due at the end of the 2nd term of year 3 and worth 25% of the final mark. In addition, students will also deliver an oral presentation worth 15% of the total mark during year 4. The project report will normally be up to 15,000 words and is worth 60% of the final mark.

RECOMMENDED READING
Students are expected to be familiar with the literature relating to their topic. A handbook with guidelines about undertaking projects and writing reports is available from the department.

MODULE EXAMINATION
The quality of the project and report is assessed by the examiners, supplemented by an oral examination by one of the external examiners. Assessment will be based on a 5000 word literature review, progress report and plan for year two of the project (25% of the project); a 20 minute PowerPoint presentation (15% of the project); and a Final Report of up to 15,000 words (60% of the Project).

TIMETABLE
Students will be allocated a project and a supervisor normally early in the third year of their 4-year degree and should begin their work on the project during the first term of their third year.

LECTURER: Professor Ian Crawford; Professor Gerald Roberts, Professor Hilary
ENVIRONMENTAL GEOLOGY PROJECT (60 credits) SCES020D6

MAIN OBJECTIVES
To give students experience of independent work on a topic of environmental geological interest, normally including some field work (e.g., sampling of environmental materials) and the preparation of a scientific report.

KNOWLEDGE AND UNDERSTANDING IN THE CONTEXT OF THE SUBJECT
Knowledge and understanding of the basic tenets of the particular area of environmental geology for the project.

COGNITIVE SKILLS
Hypothesis development and testing skills through analysis of the data obtained for their project, theoretical understanding of relevant concepts, critical assessment of results and outcomes and experience of real situations during the project work.

SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS
Collection and analysis of data relevant to the area of environmental geology related to their project using a variety of research techniques. The student will be able to critically assess the quality of the scientific method, data, results, conclusions and implications of relevant studies.

GENERAL/TRANSFERABLE SKILLS (INCLUDING KEY SKILLS)
The student will gain skills such as writing, comprehension of scientific data and papers, manipulation of data using relevant software/research techniques, independent study, IT skills and confidence in their abilities to follow a problem through to its end.

CONTENT AND ORGANISATION
Students will be expected to choose a topic in consultation with a supervisor, who will also give instructions regarding field techniques and any laboratory work that is required for the project. Most of the work will be done independently. If field work/mapping is involved, two copies of 1:10 000 maps of the field area will be supplied by the Department of Earth and Planetary Sciences. If thin sections or laboratory analyses are necessary, these will be done in the Department after consultation with the supervisor. Students may be required to pay for the cost of other materials used in the project. Time spent on the project will normally be equivalent to that expected for the map and thesis.

Students will submit a 5000 word literature review, progress report and plan for year two of the project which is due at the end of the 2nd term of year 3 and worth 25% of the final mark. In addition, students will also deliver an oral presentation worth 15% of the total mark during year 4. The project report will normally be up to 15,000 words and is worth 60% of the final mark.

RECOMMENDED READING
Students are expected to be familiar with the literature relating to their topic. A handbook giving guidelines for this module is available from the department.

MODULE EXAMINATION
The quality of the project and report is assessed by the examiners, supplemented by an oral examination by one of the external examiners.

LECTURERS
Each student will be allocated a supervisor (normally Professor Charlie Bristow) who will be responsible for advice on all aspects of the module.
**MAP & THESIS SCES015D6 (60 CREDITS)**

**MAIN OBJECTIVES**
To give students experience of independent work on the geological mapping of an area and the preparation of a geological report. Students are expected to complete their Map and Thesis over two years and will start their Map and Thesis in their third year of study (second year for UCAS full-time students). Students are expected to spend a total of 6 weeks preparing a geological map of an area. The area will be chosen in consultation with a supervisor and the size of the area will depend on various factors such as topography and geological complexity.

Students will be allocated an area and a supervisor normally early in the second year and should begin mapping in the summer vacation, making their own arrangements while agreeing dates with their supervisor. In the final year a thesis (maximum length 8000 words) on the geology of the area is prepared. Most of the work is done independently, but students may be visited in the field by their supervisor who will also give advice on cartographic techniques, content of thesis, etc. Two copies of 1:10 000 maps of the area will be supplied by the Department. Each student will be allocated a supervisor who will be responsible for advice on all aspects of the module.

**COGNITIVE SKILLS**
The student will gain knowledge and understanding of the geology of the area they have studied, including the processes which have formed the rocks and the geological history. The student will develop knowledge and understanding of the 3-dimensional relationships between geological units in the field and the chronological and spatial sequence of geological events that have occurred. The student will gain knowledge of the petrology and structures of the rocks in order to develop an understanding of the processes that have formed them.

**SUBJECT-SPECIFIC PRACTICAL/PROFESSIONAL SKILLS**
The student will learn how to: (1) use geological equipment, to measure aspects of the geology, take structural measurements and navigate on a topographic map; (2) use and understand topographic maps; (3) keep a notebook of his/her method and findings; (4) produce a field map of their findings; (5) construct geological cross-sections; (6) produce a final map using pertinent drafting skills; (7) write a scientific report detailing methods and findings.

**GENERAL/TRANSFERABLE SKILLS**
The student will learn how to plan and execute an independent research project and produce a report detailing his/her study methods and results including a discussion of the implications of their findings and final conclusions. Although students are expected to work in pairs in the field, the scientific investigations should be carried out independently; students will therefore learn the how to motivate themselves during independent study and work with a partner in the field.

**RECOMMENDED READING**
Students are expected to be familiar with the literature relating to the geology of their area. A handbook outlining the nature of the module is available from the department and must be read and acted upon.


**MODULE EXAMINATION**
The map and thesis is assessed by the examiners, supplemented by an oral examination by one of the external examiners.

**FIELDWORK COORDINATOR:** Mr Steve Hirons
Submission of Map & Thesis, Project for Geology, Project for Earth Sciences, Environmental Geology Project, Project for Planetary Sciences & major assessed essays

The following statement must be inserted as part of the requirements for the submission of Project, Environmental Geology Project, Map & Thesis, and major assessed essays:

“This (essay*/report*/dissertation*) is submitted under University of London regulations as part of the examination requirements for the BSc degree in Geology/Environmental Geology/Earth Science/Planetary Science with Astronomy**. Any quotation or excerpt from the published or unpublished work of other persons is explicitly indicated and in each such instance a full reference to the source of such work is given. I have read and understood the requirements of the Birkbeck College Examinations Instructions to Candidates, including relevant University of London regulations on Examination Tests, and in accordance with those requirements submit this work as my own.

Signed........................... “

*insert as appropriate; **delete as appropriate

Submission, Mitigating, Deferral or Withdrawal for Project or Map and Thesis Submission

The following refers to policy around the submission of The Final year Project or Map and Thesis.

Please note that if you are a final year student and are unable to submit your project or Map and Thesis by the designated deadline, you must submit a mitigating circumstances form with additional documentation to Peter Gaunt. Your mitigating circumstances will be considered at the Departmental Mitigating Circumstances Board and you will be informed of the decision.

1. If mitigating circumstances are accepted you will get a deferral, be charged the exam fee and be allowed to submit next year.

2. If mitigating circumstances are submitted but not accepted students work would be marked anyway, if their mark is between 35% to 39% the work can be re-assessed but will be subject to the capping rule of 40%. If the mark is under 35% students will be required to re-take the module again next year and will be charged the fee for the module. Any subsequent mark will not be capped.

3. If students do not submit anything nor provide mitigating circumstances, students can be offered re-assessment, a NS for non-submission will be recorded and the re-assessed work would usually be submitted in the current academic year which will be capped at 40%.

4. Students can withdraw two weeks before the published submission deadline and will be re-enrolled on the module next year and be charged the usual fee. Their work will not be subject to the capping rule as they would have withdrawn from the module.

5. Students who do not withdraw, submit mitigating circumstances, do not wish to be re-assessed in the current academic year (and therefore be capped at 40%) will be recorded a NS for non-submission of work and will simply be allowed to re-enroll next year and will be charged the usual fee for the module.