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Astronomy, Earth Sciences &  
Geology, and the Natural World

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Full listings also available from <http://www.gly.bristol.ac.uk/lifelong>

## Astronomy

### **Weekly Courses**

Monthly Sky Guide: Winter 2009

**Steve Parkinson**

A brilliant beginners' guide to the seasonal changes in the heavens. Basic astronomy topics will be covered enabling you to get to grips with the wonders of the night sky – and then go out and find them.

12 weekly meetings on Tuesdays from 7 until 9 pm starting 13 January 2009, Room G12, 8-10 Berkeley Square, Bristol, BS8 1HH.

**Fee:** £90

**Credits:** Twelve credits at QCA Level 3 subject to approval

**Code:** EASCL0017/0001

## Astronomy 2009: Spring

**Rodney Hillier**

What is the history of water on Mars? What are the most distant objects we can detect in the Universe? These are just a few of the questions astronomers are trying to answer. This course will look at present-day research in Astronomy using recent publications. The treatment will be non-mathematical and will assume only a basic knowledge of astronomy.

Eight weekly meetings on Mondays from 7 until 9 pm starting 19 January 2009.

The first meeting will be held in the Mott Lecture Theatre. All further sessions will be held in the Frank Lecture Theatre, Department of Physics, HH Wills Physics Laboratories, Tyndall Avenue, Bristol, BS8 1TL.

**Fee:** £60

**Credits:** Eight credits at Level C  
subject to approval

**Code:** EASCL1004/0001

# Earth Sciences and Geology

## Weekly Courses

### Geology and Water

**Jenny Bennett BA MPhil PhD FGS**

**John Mather BSc PhD DSc CGeol FGS**

Water has always been important to us; this course will look at two different aspects. The first half will explore the development of rivers and landscapes during the Quaternary, particularly in southern Britain; the second half will look at the relationship between groundwater and the rock through which it moves.

Ten weekly meetings on Wednesdays from 10.30 am until 12 pm starting 21 January 2009, Cheap Street Church Hall, Cheap Street, Sherborne, DT9.

**Fee:** £75

**Credits:** Ten credits at QCA Level 3

**Code:** EASCL1005/0001

### Sea Monsters of the Ancient Oceans

**Judyth Sassoon BA ARCS DPhil**

Take a journey through the abyss of time and meet some of the monstrous inhabitants of the ancient oceans. Over the past 3.5 billion years, the oceans have witnessed the rise and fall of a vast array of fantastic creatures. This course will study the evolution of life in the oceans, focusing on a number of extraordinary creatures, their body plans and adaptations to the marine environment. Fossils of these bizarre animals have been used to reconstruct their anatomy, lifestyle and ecological relationships. Special emphasis will be placed on Mesozoic marine reptiles: plesiosaurs, pliosaurs, ichthyosaurs, mosasaurs. This course will also present the means by which palaeontologists have uncovered a surprisingly detailed picture of the biology of these dragons of the ancient seas.

Ten weekly meetings on Thursdays from 11.30 am until 1 pm starting 29 January 2009, Room G8, Wills Memorial Building, Queens Road, Bristol, BS8 1RJ.

**Fee:** £75

**Credits:** Ten credits at QCA Level 3

**Code:** EASCL1008/0002

## **Evolution and Vertebrate Zoology**

**Judyth Sassoon BA ARCS DPhil**

This course will examine the life history of organisms that evolved when animals first appear in the fossil record, and compare these with present day animals. The evolutionary significance of certain life forms will be discussed with special reference to recent groundbreaking studies in developmental biology and traditional embryonic palaeontology.

Ten weekly meetings on Thursdays from 7.30 until 9 pm starting 29 January 2009, Room G8, Wills Memorial Building, Queens Road, Bristol, BS8 1RJ.

**Fee:** £75

**Credits:** Ten credits at QCA Level 3

subject to approval

**Code:** EASCL1009/0001

## **Dayschools**

### **The Old Red Sandstone of the Monnow Valley**

**David Green BA FGS**

The beautiful Monnow valley rises in the Black Mountains and Golden Valley, travels past the historic sites of Grosmont and Skenfrith entering the Wye at Monmouth, cutting through the continental rocks of the Old Red Sandstone entirely. Using a number of natural and quarry exposures will help familiarise you with the component formations and facies of this terrestrial group of sediments, laid down in the aftermath of the Acadian Phase of the Caledonian (or was it Variscan?) Orogeny.

Day school from 10 am until 4 pm on Saturday 21 February 2009. Meeting place details will be sent to those enrolled on the course.

**Fee** £18

**Credits:** Two credits at QCA Level 3  
subject to approval

**Code:** EASCL0018/0001

## **Atlantic Canada: Introduction to a billion years of geologic history**

**Howard Falcon-Lang PhD**

Ever since Sir Charles Lyell famously visited the region in the mid-nineteenth century, Atlantic Canada has been a favourite place of geological pilgrimage. This dayschool will take the student on a 'virtual fieldtrip' through a billion years of history, and explain the events and processes that shaped Atlantic Canada. The spectacular story that unfolds is of drifting continents, mountain building, vast coal swamps, catastrophic climate change, the evolution of the first dinosaurs, Atlantic rifting, the last ice age and the formation of the Bay of Fundy with its extraordinary tides. Serves as a good introduction to the study tour being run in June.

Day school from 10 am until 4 pm on Saturday 28 February 2009, room G25, Wills Memorial Building, Queen's Road, Bristol.

**Fee** £18

**Credits:** Two credits at QCA Level 3

**Code:** EASCL0031/0001

## **The Geology of Tidenham Chase**

**David Green BA FGS**

The area of study will be the southernmost part of the Forest of Dean, lying just to the north of Chepstow, in the strip of land lying between the Severn and the Wye. The geology of the area is dominated by the Beachley-Clanna Anticline and Tidenham Chase Syncline, which fold the Upper Palaeozoic rocks of the Old Red Sandstone and Lower Carboniferous along NNE-SSW axes. There are a few residual patches of Triassic rocks lying on top of the older rocks. There are spectacular views of both rivers, both a correspondence and a discordance of the landscape with the geology, and good illustrations of the role of geology in determining soil and vegetation type.

Day school from 10 am until 4 pm on Saturday 14 March 2009. Meeting place details will be sent to those enrolled on the course.

**Fee:** £18

**Credits:** Two credits at QCA Level 3  
subject to approval

**Code:** EASCL0019/0001

## **Antarctica: Geology, wildlife and climate change**

**Howard Falcon-Lang PhD**

This day school will provide a 'virtual journey' to this remote continent and the opportunity to learn about its geology, wildlife, climate, early explorers and the heroic age of its exploration. You also will study the geological history of Antarctica (an actively volcanic region), the fragile marine ecosystems of krill,

penguins, seals, and whales, and learn how they are threatened by global climate change. The effects of global warming on the continental ice sheets and sea level also will be discussed. Howard Falcon-Lang has worked for the British Antarctic Survey and as a naturalist on commercial cruises to Antarctica. Day school from 10 am until 4 pm on Saturday 18 April 2009, Somerset Skills and Learning Centre, Middle Street, North Hill, Minehead, TA24 5JH.

**Fee:** £18

**Credits:** Two credits at QCA Level 3

**Code:** EASCL0003/0003

## Geology of the North Malverns

### David Green BA FGS

The rocks of North Hill and Worcestershire Beacon, the highest part of the Malvern range, are the least deformed of these late PreCambrian igneous rocks. They have the potential to give us a better insight into their conditions of formation than the similar, but tectonically sheared rocks to the south: folded Lower Palaeozoic to the west and Triassic to the east. Expect spectacular views, rocks and relationships.

Day school from 10 am until 4 pm on Saturday 16 May 2009. Meeting place details will be sent to those enrolled on the course.

**Fee:** £18

**Credits:** Two credits at QCA Level 3

subject to approval

**Code:** EASCL0020/0001

## Geology of the Glamorgan Coast (near Barry)

### David Green BA FGS

This section of Bristol Channel coast exposes sedimentary rocks of Carboniferous and Triassic age in superb cliff and wave cut platform exposures. They reveal in great detail aspects of the environments in which each were deposited and the relationships between them. Both groups of rocks contain fossils and sedimentary structures, which together with the rock types, enable us to build up a detailed picture of the changing palaeogeography.

Day school from 10 am until 4 pm on Saturday 13 June 2009. Meeting place details will be sent to those enrolled on the course.

**Fee:** £18

**Credits:** Two credits at QCA Level 3

subject to approval

**Code:** EASCL0021/0001

## Geology of the Swindon Area: Chalk at Westbury and Sarsen Stones on the Marlborough Down

### Nicholas Chidlaw BSc PhD CGeol FGS MIQ MIMMM

Many distinctive landscapes in Wiltshire owe their origin to the underlying Late Cretaceous chalk and their scattered, irregular cover of Sarsen Stones. On this field-based course, you will examine in detail the highly varied nature of much of

the chalk and see evidence for the accumulation of this very pure marine limestone in an often deep, clear tropical sea. We shall also visit an area of concentrated Sarsen Stones (owing to the disintegration of a sandstone layer overlying the chalk during the Ice Age) that contain abundant traces and silicified remains of plant roots from a hot arid desert about 45-60 million years old.

Day school from 10 am until 5 pm on Saturday 11 July 2009. Meeting place details will be sent to those enrolled on the course.

**Fee:** £18

**Credits:** Two credits at QCA Level 3  
subject to approval

**Code:** EASCL0024/0001

### **Weekend Field Courses**

#### **The Geology of the Isle of Purbeck**

**Professor John Cope DSc PhD FGS**

This attractive, largely unspoilt and varied coastline displays some of the finest sections through the Upper Jurassic and Cretaceous rocks in the United Kingdom and forms part of the World Heritage Jurassic Coast Site. The area is geographically isolated from its hinterland by a pronounced Chalk ridge, to the North of which are flat-lying soft Palaeogene rocks. Much of the weekend will be spent on the coastal sections, but short forays inland will demonstrate the relationship between the geology and the topography of Purbeck. There will be ample time for collecting rock and fossil specimens.

Weekend field school with an introductory Friday evening lecture from 7 until 9 pm followed by two days in the field. Friday 6 to Sunday 8 March 2009, Wareham Library, Wareham, Dorset, BH20 4LR.

**Fee:** £50 (Tuition only)

**Credits:** Five credits at QCA Level 3

**Code:** EASCL0014/0001

#### **The Geology of the Torbay Area**

**Professor John Cope DSc PhD FGS**

Torbay is one of the best areas in Britain for studying the fully marine facies of the Devonian rocks. Of particular note in the Torquay area are the massive Middle Devonian limestones with their rich faunas of corals and brachiopods. The effects of mountain formation were intense in South Devon and many types of folds, thrusts and faults are visible in spectacular coastal exposures.

Magnificently exposed sediments with dramatic unconformity on the Devonian rocks, add to the spectacular scenery visible today. This weekend field school will examine the geological succession and structural history at first hand.

Weekend field school, with introductory Friday evening lecture from 7 until 9 pm followed by two days in the field. Friday 24 to Sunday 26 April 2009, Torquay Museum, 529 Babbacombe Road, Torquay, TQ1 1HG.

**Fee:** £50 (Tuition only)

Five credits at QCA Level 3

subject to approval

**Code:** EASCL0016/0001

## **Over One Hundred Volcanic Vents: Fife and Lothian, Scotland**

**Nicholas Chidlaw BSc PhD CGeol FGSMIQ MIMMM**

This field course will examine the plethora of Late Carboniferous/Early Permian volcanic rocks in both coastal and inland exposures of these highly scenic and attractive counties on the east coast of central Scotland. We will also visit the famous volcanoes within the city of Edinburgh.

Four consecutive days in the field, Sunday 24 to Wednesday 27 May 2009.

Meeting place details will be sent to those enrolled on the course.

**Fee:** £80 (Tuition only)

**Credits:** Eight credits at Level C

subject to approval

**Code:** EASCL1006/0001

## **From the Forest of Dean to the Cotswolds: A linear geological walk**

**Nicholas Chidlaw BSc PhD CGeol FGS MIQ MIMMM**

This course involves a three-day walk passing eastwards across some of the most attractive scenery and varied geology in the west of England. You will learn of a geological history spanning the last 400 million years, during which the crust that became the British Isles passed from the southern tropics, across the equator to its present position. The walk will be gently-paced (around 10 km per day), with frequent stops to examine the landforms and geology.

Three consecutive days in the field, Sunday 7 to Tuesday 9 June 2009.

Early booking is advised. Meeting place details will be sent to those enrolled on the course.

**Fee:** £60 (Tuition only)

**Credits:** Six credits at QCA Level 3

**Code:** EASCL0015/0001

## Study tours

### **From the Forest of Dean to the Cotswolds: A linear geological walk**

**Nick Chidlaw BSc, PhD, CGeol, FGS, MIQ, MIMMM.**

This course involves a three-day walk passing eastwards across some of the most attractive scenery and varied geology in the west of England. You will learn of a geological history spanning the last 400 million years, during which the crust that became the British Isles passed from the southern tropics, across the equator to its present position. The walk will be gently-paced (around 10 km per day), with frequent stops to examine the landforms and geology.

Three consecutive days in the field, Sunday 7 to Tuesday 9 June 2009. Early booking is advised. Meeting place details will be sent to those enrolled on the course.

**Fee:** £60 (Tuition only)

**Credits:** Six credits at QCA Level 3

**Code:** EASCL0015/0001

## **The Volcanic Evolution of Tenerife**

**Richy Brown BSc (Hons) PhD**

Tenerife is the largest island in one of the world's major oceanic volcanic groups, the Canarian Archipelago. If measured from the sea floor, Tenerife's magnificent Mount Teide is the third tallest volcanic structure in the world. A National Park, recently recognised as a World Heritage Site, encompasses the stratovolcano and offers a cable car ride from the floor of the caldera (17 km in diameter) almost to the summit. This study tour will examine the geological evolution of this basaltic island volcano that offers a diverse and accessible assemblage of volcanic features and stunning landscapes in a relatively limited area.

Residential course from Friday 8 to Friday 15 May 2009.

**Fee:** £850 (fee includes course, flights and accommodation)

**Credits:** 15 credits at Level C

subject to approval

**Code:** EASCL1010/0001

## **The Geology of Atlantic Canada**

**Howard Falcon-Lang PhD**

Explore stunning coastal scenery and uncover a billion years' of history during a unique opportunity to discover the geology of Atlantic Canada. Each day we will open up a new chapter of geologic time with special emphasis given to the Carboniferous coal measures and fossil forests, and the thick Mesozoic successions that contain early dinosaur remains. In addition to the geology, we will experience the rich blend of French, English, Irish and Scottish cultures that makes the maritime region of Nova Scotia and New Brunswick one of Canada's most stimulating and attractive destinations.

Residential course in Eastern Canada, from Tuesday 9 to 22 June 2009.

Introductory dayschool being run in Bristol on Saturday 28 February 2009.

**Fee:** £2500 (fee includes course, flights and accommodation)

**Credits:** 30 credits at Level C

subject to approval

**Code:** EASCL0010/0001

# The Natural World

Weekly Courses

**The Wine Makers**

## **Lys Hall**

An illustrated investigation into how the different wine-making processes from the vineyard soil to the time in the bottle influence the taste of a wine. The courses accompanied by illustrative tasting of eight wines per week. Please bring two medium-sized wine glasses plus dry biscuits. Eight weekly meetings on Thursdays from 7 until 9 pm starting 15 January 2009 (with a half-term break on 12 February), Room G7, Wills Memorial Building, Queens Road, Bristol, BS8 1RJ.

**Fee:** £125 (Including wine fee of £65)

**Credits:** Eight credits at QCA Level 3

**Code:** EASCL0013/0001

## **Wine and Geology of Australia**

### **Lys Hall**

Soil and geology are very important in the creation of a wine, and many winemakers today are concentrating increasingly on giving their wines a tipicity of flavour which shows the specific conditions and soil they grew in. How does the fascinating complexity of vineyard geology affect the final flavour? Illustrated with numerous wines per session. Please bring two medium sized wine glasses, something to spit into and dry biscuits.

Three consecutive Saturday dayschools from 10 am until 3 pm starting 28 February 2009 (then 7 and 14 of March 2008), room G7, Wills Memorial Building, Queen's Road, Bristol.

**Fee:** £110 (including wine fee of £45).

**Credits:** Six credits at QCA Level 3

subject to approval

**Code:** EASCL0008/0002

## **Weekend Courses**

### **Monitoring and Survey Techniques for Woodland**

**William Dixon BSc PhD**

We will introduce and use quadrats to estimate vegetative cover for Weston Bigwood early coppice. We will conduct a canopy and understory survey and a tree species diversity estimation. The day will include an introduction to Breeding Bird Surveys and consider the future of digital camera monitoring.

Day school from 10 am until 4 pm on Saturday 28 March 2009, Gordano Valley. Meeting place details will be sent to those who have enrolled on the course.

**Fee:** £18

**Credits:** Two credits at QCA Level 3

subject to approval

**Code:** EASCL0027/0001

### **Spring Birdsong and Flowers**

**William Dixon BSc PhD**

This course aims to familiarise students with local varieties of woodland birds by sight, call and habitat. The unit is an outdoor field course, starting early in the morning, and will provide participants with the opportunity to learn to identify woodland birds such as the Nuthatch, Tree Creeper and Great Spotted Woodpecker by song, structure and jizz in situ. The latter portion of the course will be spent identifying numerous woodland flora and learning about the environments they provide.

Day school from 8 am until 2 pm on Saturday 25 April 2009, Weston Bigwood. Own transport or car-share required.

**Fee:** £18

**Credits:** Two credits at QCA Level 3

**Code:** EASCL0028/0001

## **Saltmarsh Dynamics: An eroding habitat?**

**William Dixon BSc PhD**

This course will provide a preliminary identification of Saltmarsh plants before going on to compare vegetatively two saltmarshes by quadrat estimation. We will discuss the results before undertaking saltmarsh area bird species identification.

Day school from 10 am until 4 pm on Saturday 23 May 2009, Gordano Valley. Meeting place details will be sent to those who have enrolled on the course.

**Fee:** £18

**Credits:** Two credits at QCA Level 3  
subject to approval

**Code:** EASCL0029/0001

## **Two for One: Dragonflies and warblers**

**William Dixon BSc PhD**

The morning will be spent identifying reedy type birds including Sedge, Reed and Cetti's Warblers as well as Whitethroat, Lesser Whitethroat and Blackcap. We will look for other species of this watery habitat, such as Reed Bunting and Lapwing. We may be lucky and see Hobby also.

Day school from 10 am until 4 pm on Saturday 27 June 2009, Gordano Valley. Meeting place details will be sent to those who have enrolled on the course.

**Fee:** £18

**Credits:** Two credits at QCA Level 3  
subject to approval

**Code:** EASCL0030/0001

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