

Fossils and the history of life

Start date Sunday 19 May 2019 **End date** Monday 20 May 2019

Venue Madingley Hall
Madingley
Cambridge

Tutor Dr Peter Sheldon **Course code** 1819NTX012

Director of Academic Centres Sarah Ormrod
Head of Academic Centre Administration, Zara Kuckelhaus
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To book See: www.ice.cam.ac.uk or telephone 01223 746262

Tutor biography

Dr Peter Sheldon is an Honorary Associate in the School of Environment, Earth and Ecosystem Sciences at the Open University, where he was a Senior Lecturer in Earth Sciences until 2015. He has given nearly 80 residential courses in geology, palaeontology and evolution for the University of Cambridge Institute of Continuing Education since 1979. From 2008 to 2011 he was External Examiner for Scientific Studies at Oxford University's Department for Continuing Education, where he has given over 40 day-schools since 1993. His teaching style combines fieldwork, hands-on study of real specimens of rocks, minerals and fossils, and interactive lectures. He chaired the Open University course on *Geology* and has contributed to many other OU courses, including *Fossils and the History of Life*, *Evolution*, *Earth's Physical Resources*, *Discovering Science*, *The Geological History of the British Isles* and *Earth Science*.

Course programme

Sunday 19 May 2019

Please plan to arrive between 10:00 and 12:00. You can meet other course members in the bar. Tea and coffee making facilities are available in the study bedrooms.

13:00	Lunch
14:30 – 16:00	Fossil preservation processes. Key ideas in palaeontology and evolution, and some major fossil groups.
16:00	Tea
16:30 – 18:00	The earliest evidence of life, the Cambrian explosion and evolutionary events in the first part of the Palaeozoic Era.
18:30	Dinner
20:00 – 21:30	Further evolution in the Palaeozoic Era. Mass extinction at the end of the Permian Period, 250 million years ago.

Monday 20 May 2019

07:30	Breakfast
09:00 – 10:30	Practical session (45 minutes), studying fossil specimens in the teaching room. Life in the Mesozoic Era – from ammonites and belemnites to dinosaurs and pterosaurs. (45 minutes).
10:30	Coffee
11:00 – 12:30	Further life in the Mesozoic Era. Mass extinction by meteorite impact at the end of the Cretaceous Period?
12:45	Lunch
14:00 – 15:30	The Cenozoic Era: ups and downs of the last 65 million years. The evolutionary radiation of mammals. Hominid evolution and the influence of humans on the biosphere.

Course syllabus

Aims:

- 1) To provide a wide-ranging introduction to this inspiring subject for beginners, giving students a broad perspective on the history of life and the evidence for it.
- 2) To stimulate a continuing interest in fossils and the history of life.

Content:

Topics include:

- how fossils get preserved
- how to recognise some major fossil groups
- key ideas about evolution and the fossil record
- an overview of the history of life
- mass extinctions and their significance
- recent finds and remaining mysteries

There will also be a chance to study many real fossils put out in the teaching room.

No previous background in palaeontology and geology is needed for the course and no reading is required in advance.

You are very welcome to bring along your own fossil specimens which you would like to be identified or which you think are of special interest.

Presentation of the course:

Presentation of the course will involve richly illustrated lectures with plenty of opportunity to ask questions and discuss interesting points. There will also be a practical session in which students can pick up and personally examine a large number of fossils put out on tables in the teaching room.

As a result of the course, within the constraints of the time available, students should be able to:

1. Explain the various ways in which organisms can become preserved in the fossil record.
2. Identify some of the most common types of fossil organisms, and suggest the geological periods and environments they indicate.
3. Outline some of the key events in the history of life, including mass extinctions and evolutionary radiations.

Reading:

No reading is required in advance and no books need to be bought (or consulted) for the course. Many useful books on fossils, evolution, geology and palaeontology will be available for people to look at during the course, and a detailed and extensive booklist will be provided.

Website addresses:

Among the many excellent websites you may wish to explore if you have access to the Internet are the following, which have links to a vast number of other relevant sites:

<http://www.nhm.ac.uk> - The Natural History Museum, London.

<http://www.ucmp.berkeley.edu> - Many exhibits and palaeontology/evolution links.

<http://www.si.edu> - The Smithsonian Institution.

<http://www.amnh.org> - The American Museum of Natural History.

<http://www.geolsoc.org.uk> - The Geological Society of London.

<http://www.bgs.ac.uk> - British Geological Survey.

Note Students of the Institute of Continuing Education are entitled to 20% discount on books published by Cambridge University Press (CUP) which are purchased at the Press bookshop, 1 Trinity Street, Cambridge (Mon-Sat 9am – 5:30pm, Sun 11am – 5pm). A letter or email confirming acceptance on to a current Institute course should be taken as evidence of enrolment.

Information correct as of: 22 March 2019