Snowdonia can truly be said to be a landscape shaped by the contrasting forces of fire and ice. This geology course visits the site of a disappearing ocean and observes sediments laid down in an ocean basin. We will see lavas produced both on the sea bed and as a result of erupting volcanoes. Add to this the contortions caused by mountain building, widespread mineralisation, and massive glaciation and the diversity of Snowdonia’s geological past becomes apparent.

In Snowdonia, rocks are exposed ranging in age from Pre-Cambrian to Upper Palaeozoic. Central Snowdonia consists mainly of rocks of Ordovician age, which are a mixture of volcanic rocks, sediments and intrusive igneous rocks. The Nant Ffrancon Valley and Llanberis Pass cut convenient sections through the rock outcrops around Bethesda and Llanberis itself and mixed Ordovician volcanics and sediments occur in the heart of the mountains. In the far west, on the Llêyn Peninsula, the rocks are quite different, consisting of a unique series of Pre-Cambrian rocks associated with plate tectonics some 600 million years ago. All of Snowdonia has been strongly influenced by extensive glaciation and the evidence for both transport and deposition is all around. Some of the classic locations to examine the effects of glaciation can be found in and around Snowdonia.

The course will involve field examination of these classic rock sequences set amidst some of the most spectacular scenery in Britain. In the evenings, the days’ observations will be set in context and their significance discussed. It is also possible that a number of short evening excursions may be undertaken.

The course is suitable for both the enthusiastic amateur and those with a more detailed interest. Two of the days will involve mountain walking (maximum of 8 km per day). The other days will be lower level walking, usually on good paths.

Rhyd-y-creuau Field Centre is situated in the Conwy Valley on the eastern edge of the Snowdonia National Park about two kilometres north of the village of Betws-y-coed. To the west of the field centre lies the spectacular mountain scenery of Snowdonia with fourteen mountain peaks over 3000 foot high, dissected by impressive glacial valleys. To the north lie the small coastal settlements of Llandudno, Conwy and Bangor, whilst to the far west there is the spectacular Llêyn Peninsula.
**Course Description**

<table>
<thead>
<tr>
<th>Day</th>
<th>Schedule and Details</th>
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<tbody>
<tr>
<td>Friday</td>
<td>4.00 – 5.15 pm: Arrival and Welcome. 5.45 pm: Centre Introduction 6.00 pm: Dinner. 7.00 pm: Course Introduction</td>
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<tr>
<td>Saturday</td>
<td>Cwm Idwal. Full day spent looking at landforms and volcanic Geology in and around the Cwm Idwal Nature Reserve. We will park on the A5 close to the Ogwen Youth Hostel and spend the day in the main part of Cwm Idwal. If the weather is good there may an opportunity, for anyone who wants to, to visit the upper parts of Cwm Idwal (The Devil’s Kitchen).</td>
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<tr>
<td>Sunday</td>
<td>Geological Transect NW-SE of Llanberis. Full day spent following the line of the A4086 from Fachwen, via Llanberis to Nant Peris. All lowland walking as we trace the upper Pre-Cambrian and Cambrian succession through the heart of the North Wales Slate Belt.</td>
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<tr>
<td>Monday</td>
<td>The far West of North Wales, the Lleyn peninsula. A long drive to the far western point of North Wales where we will stop at Aberdaron to look at the Pre-Cambrian rocks of the Mona Complex. From here we will go to the very tip of the peninsula to see the site of the late Pre-Cambrian subduction zone. If time permits we will stop at Morfa Nefyn on the North Lleyn coast to see classic pillow lavas along with their Included Jaspers.</td>
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<tr>
<td>Tuesday</td>
<td>The Nant Ffrancon Valley to look at landforms and Ordovician Geology. Section along the North shore of Llyn Ogwen in the morning ending with a look at the lower slopes of Tryfan. A walk down the upper section of the old A5 in the afternoon looking at the dramatic Nant Ffrancon Valley.</td>
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<tr>
<td>Wednesday</td>
<td>Geology around Capel Curig and the Gwydir Forest. A walk on the dramatic pinnacles overlooking the village of Capel Curig in the morning followed by a trip into the forests above Betws-y-Coed in the afternoon to look at the Crafnant Volcanic rocks and the long disused lead mining areas. If the weather is clear we should get some excellent views into central Snowdonia from here.</td>
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<tr>
<td>Thursday</td>
<td>Snowdon. A trip to the summit of Snowdon, at 1060 meters the highest peak in Wales. A ticket has been booked to the summit where the views on a clear day are spectacular. There is an option to return on the train or walk down the very good path to Llanberis tracking much of the Ordovician and Cambrian sequence and taking a short detour into the spectacular Cwm Dur Arddu.</td>
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<tr>
<td>Friday</td>
<td>Depart after breakfast, with a packed lunch for your return journey.</td>
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</table>
Detailed geological knowledge is not a requirement for this course, but a basic background would be helpful. There are no specific texts that David would recommend, although a good geological dictionary might be of use, as geology is full of obscure terminology. If anyone would like to read more about the glaciation, especially in Cwm Idwal and the Nant Ffrancon Valley, the Geographical Association does some good, detailed publications. A geological map would be useful if you have one, otherwise these will be made available at the Centre. Five of the days are going to be located in Snowdonia, an area covered by the 1:25,000 Explorer OL17 map of Snowdon and the Conwy Valley. The other day will be on the Llŷn Peninsula, which is covered by the 1:50,000 Landranger map sheet 123. David will have both of these maps with him during the course. The FSC publications: A Guide to Common Rocks (OP78) (2003), A Guide to Common Minerals (OP84) (2004), and A Guide to Common Fossils (OP92) (2005) are all very good, and will be available from the Centre shop during the course.

**About the Tutor**

**David Cronshaw** is a former Geology Tutor at FSC Preston Montford Centre. He has lead Scenery and Geology courses at several FSC Centres. David undertook his P.H.D. research on the Geology of Snowdonia, so knows the area very well. He now teaches Geography at a Lancashire school.

**Course times**

Course participants are requested to arrive on the first day at our reception for registration from 4.00 - 5.15pm. An introductory talk to the Centre is at 5.45pm. Dinner is at 6pm, followed by an introduction to the course. Departure is after breakfast on the final day.

The non-resident fee includes all tuition, packed lunches and evening meals.
What to Bring

- Warm clothing is essential.
- Sun cream and sun hat (hopefully these will be essential!)
- Waterproof jacket and waterproof trousers (can be borrowed from the Centre).
- Outdoor footwear (walking boots and wellies can be borrowed from the Centre).
- Day rucksack, warm hat and gloves (can be borrowed from the Centre).
- A torch, water bottle, thermos flask and lunch box.
- Also the following may be of use: notebook and pencil, a camera, a hand lens (useful if you have one), geological hammer (could be useful if you have one, but as most sites are within the National Park, hammering of exposures is discouraged).

We will provide specialist equipment, but if you have your own you are welcome to bring it.

Want to stay a little longer?

Extra nights
If you are interested in staying at the Centre for additional nights after the course, please contact the Centre for availability and costs which start from £23 for B&B, or £38 full board (we can confirm B&B availability 4 weeks prior to the course).

Partner Rate
For those paying the sole occupancy course fee, we are offering their non-participating partners a special rate of £35 per night for dinner, bed and breakfast, to share a twin room. This offer is subject to availability.

How to Book

Telephone the Centre on 01690 710494, email us at enquiries.rc@field-studies-council.org or complete the online form on the FSC website at: www.field-studies-council.org