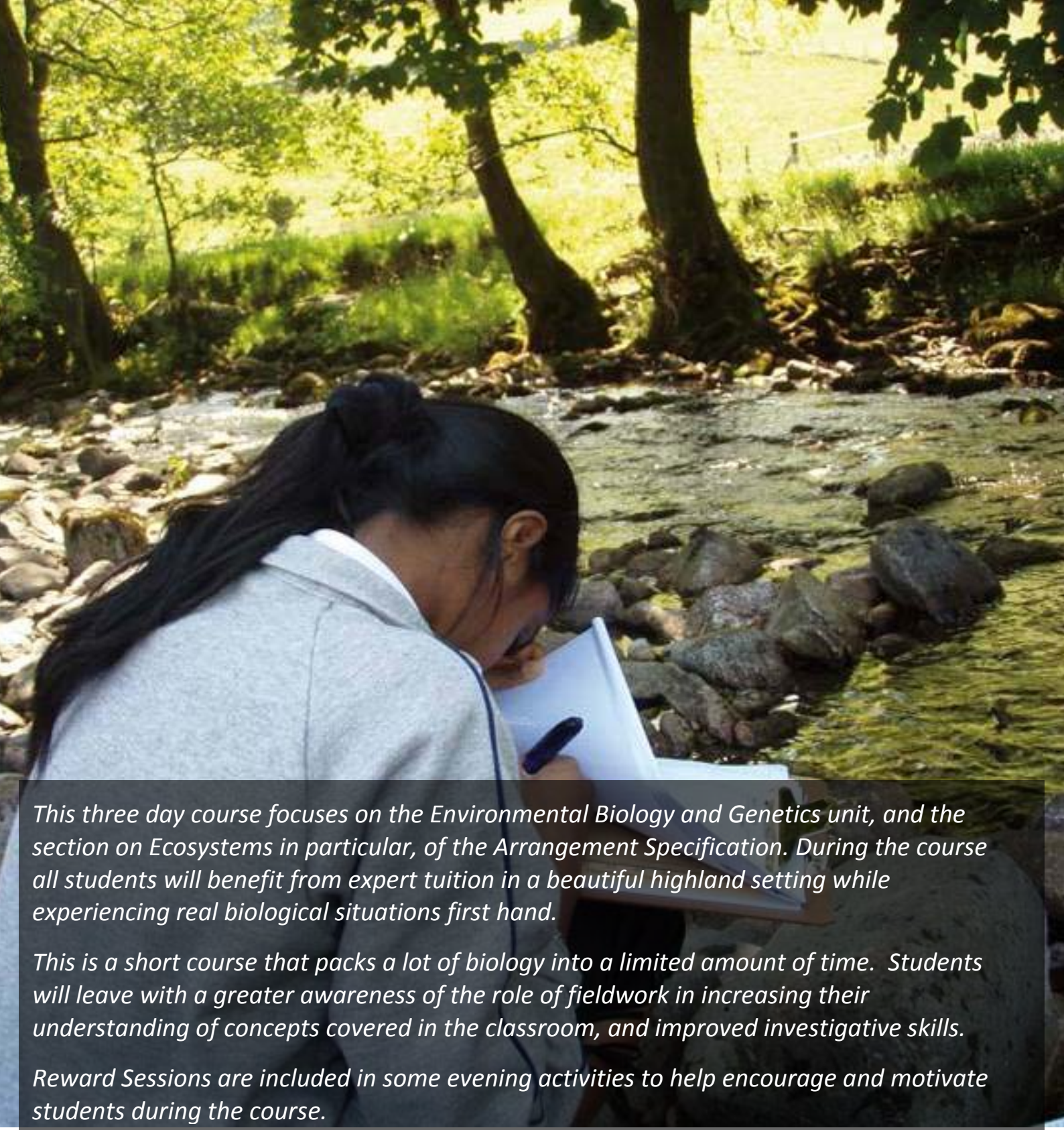


# Intermediate 1 and 2 Biology

## *Ecosystems in Action, 3days*



*This three day course focuses on the Environmental Biology and Genetics unit, and the section on Ecosystems in particular, of the Arrangement Specification. During the course all students will benefit from expert tuition in a beautiful highland setting while experiencing real biological situations first hand.*

*This is a short course that packs a lot of biology into a limited amount of time. Students will leave with a greater awareness of the role of fieldwork in increasing their understanding of concepts covered in the classroom, and improved investigative skills.*

*Reward Sessions are included in some evening activities to help encourage and motivate students during the course.*

**FSC**

BRINGING  
ENVIRONMENTAL  
UNDERSTANDING TO ALL

*FSC standard courses are fixed length with clearly stated outcomes and links with SQA Arrangements.*

Please visit

<http://www.field-studies-council.org/outdoorclassroom/scotland/intermediate1and2biology.aspx>  
for alternative intermediate 1 and 2 courses

**COURSE LENGTH**

3 Days (2 nights with 6 teaching sessions)

Monday-Friday, Wednesday-Sunday

Groups would normally arrive in time to be taught in the afternoon of the first day and would then be taught on that evening and for one full day subsequently. Groups depart immediately after the morning session on the day of departure.

Day 1	Day 2	Day 3
Arrive	Morning, afternoon & evening sessions	Morning session
Afternoon & evening sessions		Depart after Lunch

**COURSE TIMETABLE**

DAY	MORNING	AFTERNOON	EVENING
1	<p><b>Arrival</b> (approx. 12 - 1pm)</p> <p>Welcome and outline the challenges ahead</p> <ul style="list-style-type: none"> <li>• Tour of centre</li> <li>• Settle into rooms</li> <li>• Allocate kit (i.e. waterproofs)</li> </ul> <p><b>Introduction to Fieldwork</b> Brief introductory discussion to explore:</p> <ul style="list-style-type: none"> <li>• The importance of fieldwork in biology</li> <li>• Biological sampling methods and techniques</li> <li>• Aims of the three day course</li> </ul>	<p><b>Pond ecosystem study</b> Students undertake a guided investigation of the pond to:</p> <ul style="list-style-type: none"> <li>• Practice freshwater sampling techniques</li> <li>• Identify the components affecting the pond ecosystem</li> <li>• Use keys to identify freshwater invertebrates</li> <li>• Discuss ways organisms are adapted to survival in a pond.</li> </ul>	<p><b>Reward Session: Small Mammal trapping</b> Students will set Longworth traps in order to trap and study small mammal species of the area to:</p> <ul style="list-style-type: none"> <li>• Identify and discuss the ecology of each species</li> <li>• Discuss the control of mammal population through competition for discourse</li> </ul>
2	<p><b>River ecosystem study</b> Students undertake river investigation to:</p> <ul style="list-style-type: none"> <li>• Identify components affecting the river ecosystem</li> <li>• Identify pollution sources</li> <li>• Collect data uses appropriate sampling techniques for both biotic and abiotic factors</li> <li>• Identify freshwater species – plants and animals</li> <li>• Measure pH and Oxygen saturation levels along with river velocity</li> </ul>	<p><b>Follow up session</b></p> <ul style="list-style-type: none"> <li>• Use microscopes and keys to identify species</li> <li>• Identify ways in which organic pollution can affect the distribution of organisms and compare the ways in which organisms are adapted to survival in freshwater (river &amp; pond) environments</li> <li>• Identify sources of error in data collection</li> </ul>	<p><b>Reward Session: Egg Challenge!</b> Team building challenge where students design a contraption to protect a raw egg from certain destruction. Challenge aims to</p> <ul style="list-style-type: none"> <li>• Help learning about an effective design process</li> <li>• Improve their team and communication skills</li> </ul>
3	<p><b>Food Chains and Webs</b> Revision session of the concepts, followed by fieldwork to investigate woodland leaf community to:</p> <ul style="list-style-type: none"> <li>• Identify producers, consumers, and decomposers in ecosystems</li> <li>• Illustrate trophic levels and pyramids of numbers</li> <li>• Identify species using identification keys.</li> </ul>	Lunch and Depart	<p><u>High Quality teaching</u> The teacher delivering the content plays a vital role in ensuring successful learning outcomes are achieved.</p> <p>This is why every FSC Centre has taken great care in developing a qualified team of highly trained and CRB checked field teachers working full time, all year round.</p> <p>Not only are they experts, they are gifted teachers with a real passion for the subject being taught. FSC field teachers are the reason why many schools return year after year.</p>

**COURSE CONTENT**

Includes:

- Investigations into freshwater ecosystems and dynamics – energy flow, food chains and food webs
- Looking at factors affecting biodiversity
- Biological sampling methods and fieldwork techniques
- Data collection using a range of fieldwork techniques
- Analysis, presentation and interpretation of data
- Reward activities including a choice of ropes challenge, orienteering, team building and problem solving.

**ARRANGEMENT LINKS****Unit 2: Environmental Biology and Genetics****a) Ecosystems**

- 1 Energy Flow
  - i) Components of an Ecosystem
  - ii) Food chains and food webs- roles of producers, consumers and decomposers
  
- 2 Factors affecting the variety of species in an ecosystem
  - i) The importance of biodiversity at species level
  - ii) Factors affecting biodiversity

**External Recognition of Quality**

All our centres have been awarded the Quality Badge by The Council for Learning Outside the Classroom. The badge is awarded to organisations that have demonstrated that they consistently deliver high quality teaching and learning experiences and manage risk effectively. This means that you will have to complete less paperwork when visiting our centres.

**Protecting fieldwork opportunities for everybody**

Growing pressures on outdoor learning has led the FSC to take on an important role; championing the rights and opportunities for people of all ages to experience the environment at first hand.

The FSC has led in campaigns to reverse the continuing decline in fieldwork within secondary schools and to build opportunities for out-of-classroom learning.

As a registered charity, the FSC receives no statutory funding. It relies solely on fees charged for courses and membership. Therefore, by visiting an FSC Centre not only are you receiving a high quality educational experience for your students, you are also helping to protect fieldwork opportunities for everybody.

## FSC KINDROGAN

Located in rural Perthshire, at the edge of the Cairngorms National Park FSC Kindrogan is 11 miles from Pitlochry's mainline train station and close to the A9. The Centre itself is set in wooded grounds on the banks of the River Ardle and lies within easy reach of some of the most inspiring landforms in the Scottish Highlands and a rich range of wildlife habitats.



### TO BOOK THIS COURSE, SIMPLY

1. Choose the time of the year you would like to attend
2. Check [availability online](#) or contact FSC Kindrogan

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for alternative intermediate 1 and 2 courses

The FSC prides itself on being flexible; the course content can be tailored to meet your needs. Alternatively, we can work with you to create a fully bespoke course to meet your exact requirements.

FSC offers a number of courses covering [biology field trips](#), [biology fieldwork](#), [Intermediate biology](#), as well as [geography fieldwork](#) and [cross curricular fieldwork](#). Please visit our website for further information.