This course prepares students for Topic 1. Geomorphic processes of transportation and deposition in a coastal environment of the geographical investigation. During this day students will follow a route of enquiry to investigate how transportation and deposition have affected Bundoran Beach. Students will be introduced to a range of techniques which will give experience of practical geographical techniques as well as sharpen their data analysis and interpretation skills.

Please visit [http://www.field-studies-council.org/outdoorclassroom](http://www.field-studies-council.org/outdoorclassroom) for alternative Leaving Certificate courses.
COURSE LENGTH

Sessions from 9.30am-4.00pm

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>9:30am-1:00pm</td>
<td>Morning session</td>
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<tr>
<td>1:00pm-1:30pm</td>
<td>Lunch</td>
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<tr>
<td>1:30pm-4:00pm</td>
<td>Afternoon session</td>
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<tr>
<td>4:00pm</td>
<td>Depart</td>
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Extensions can be arranged, including evening meals and an overnight stay. This makes more time available for follow up discussions and analysis; ensuring students make the most of this outdoor learning opportunity.

COURSE CONTENT

**Definitions and Concepts**
- Deposition
- Transportation
- Longshore drift
- Wave frequency
- Energy
- Refraction
- Load
- Sediment

**Sampling and Experimental Techniques**

- The students work in groups of 4 – 6. The students visit 5 sites along the shore from North to South. The following coastal parameters are measured.
- Beach profile – tape measure, ranging pole, clinometer. 1 transect at each site.
- Wind direction/speed – anemometer, compass – 1 measurement at each site.
- Wave direction/frequency/height –stop-watch. 1 measurement at each site.
- Longshore Drift – float/buoy, stop-watch, tape. 1 measurement at each site.

**Whole Class Measurements**
- Sediment size – 3 samples are collected from each site, dried, sieved and weighed.
- Meteorological data – Detailed weather and surf forecast analysed in relation to data collected

This course of study takes place on Bundoran Beach, Co Donegal. The beach is located approximately 250m north of Bundoran Main Street. It is a sandy beach facing Donegal Bay and the Atlantic bounded on the North and South by rocks and on the east by the promenade roadway. The beach is constantly being modified by the processes of transportation and deposition by waves and currents. The amount of sand in the beach system remains fairly constant but the profile changes with the season. Journey time is approximately 40 minutes from the centre.
LEARNING OUTCOMES/OBJECTIVES

<table>
<thead>
<tr>
<th>Learning Objectives</th>
<th>Learning Outcomes</th>
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<tr>
<td>• Provide students with the opportunity to observe, identify and measure the dominant coastal processes occurring at Bundoran beach, concentrating on transportation and deposition</td>
<td>By the end of a course we expect all students to:</td>
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<tr>
<td>• Investigate the formation of storm ridges and sloping beach profiles</td>
<td>• Use and be able to recall several techniques to measure beach parameters</td>
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<td>• Investigate the physical characteristics of the changing beach profiles along the bay</td>
<td>• Recognise a range of processes operating in a coastal landscape</td>
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<td>• Identify a summer and winter beach and some of its associated characteristics</td>
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<td>We also hope that students will:</td>
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<td>• Recognise a range of processes operating at the coast and how some of these relate to the formation of the beach profile</td>
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RESULTS AND CONCLUSIONS

The results and conclusions depend on the river conditions on the day of the fieldwork as well as on the specific site measured. The following are examples of likely outcomes:

- The profile measurements show that the beach is steeper at the south and smoothly sloping at the north. The southern section is representative of a winter storm beach where it has shelter from the summer tides. This indicates that deposition is occurring during the winter whilst the northern section shows seasonal transportation of the beach.
- The sediment measurements indicate that there is some sorting of beach material by wave action in both downshore and longshore directions. Larger grains will be found towards the back of the beach and on the southern ridges. The larger the material the more stable it is and therefore steeper beach slopes will be produced.
- The lateral shift in beach material will be observed by changing beach height along the bay and the dominant drift direction will be measured by plotting buoy/float movement. The direction and rate could be determined in this way and link to other factors i.e. profile, tidal or wind conditions.

Please note: It is not usually possible for the students to analyse their own results on a day visit due to time constraints. The students will be able to look at likely outcomes and explanations. A longer stay (extended day or two day visit) will allow the students to draw conclusions from their data and complete their geographical investigation report.
**FSC DERRYGONNELLY**

Located in the unspoilt West Fermanagh countryside, FSC Derrygonnelly is 10 miles from Enniskillen, 20 miles from Ballyshannon and only 15 miles from the Donegal coast. The River Sillees runs through the centre grounds and an excellent variety of habitats including rocky shores, freshwater, sand dunes, rivers, bog and heathland are within easy reach.

**PRICES**

Prices start at €21/£17 per student. For more information please contact the centre directly.

**TO BOOK THIS COURSE, SIMPLY:**

1. Choose the time of the year you would like to attend
2. [Check availability online](http://www.field-studies-council.org/outdoorclassroom) or contact FSC Derrygonnelly

For alternative Leaving Certificate courses, please visit:

[http://www.field-studies-council.org/outdoorclassroom](http://www.field-studies-council.org/outdoorclassroom)

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.