Environmental Science
2+2
Why choose the 2+2 at the University of Liverpool?

Our story began in 1881... The University of Liverpool became one of the first civic universities. The original redbrick.

Nearly 140 years later, we are still as original as ever – offering different viewpoints and daring ideas. Unique perspectives and a city bursting with character. We are uncovering world firsts through our pioneering research and helping you to forge your own original path to success. Studying in Liverpool will provide you with an amazing, life-changing university experience that will help you to achieve your ambitions.

Internationally recognised
- Ranked 181st in the QS World University Rankings (2021)
- Ranked 101-150 in the Academic Ranking World Universities (2021)
- 20th in the UK for research power with 7 subjects ranked in the top 10 in the UK’s Research Excellence Framework (both Chemistry and Computer Science ranked #1 in the UK for 4* & 3* research THE 2014).

Benefits of studying in the UK
- Develop communication skills, flexibility, adaptability, empathy and a global outlook – attributes which are highly sought by employers
- You may not need to take an IELTS when applying for postgraduate study at some universities in the UK
- Opportunity to explore the UK and Europe.

Graduate outcomes for 2+2 students
- 87% of all 2+2 graduates in Liverpool achieved a 1st or 2:1 upon graduation
- 80% of 2+2 graduates in Liverpool who were in further study after graduating from the University of Liverpool were enrolled in QS Top 100 Universities (DHLE 2020, University of Liverpool analysis of unpublished data)
- One of the top 25 UK universities targeted by leading graduate employers (High Fliers 2020).

Support services
- Happy students are successful students. In order to help you achieve your ambitions, the University of Liverpool has a wide range of services to support you throughout your studies, including:
  - Academic advisors
  - International advice and guidance
  - English Language Centre
  - Careers Studio
  - Student services (Health, Counselling, etc)
  - Guild of Students
  - Sports and Fitness centre
  - Libraries
  - On-campus accommodation.

The university offers great facilities, the 24-hour library, informational Career Centre and the gym. The campus is a very friendly, passionate place with a good balance of studying and socialising.

Siqi Li
2+2 alumna in Communications and Media
Environmental Science at Liverpool

Understanding the complex interactions between the physical and biological environment is essential if we are to find solutions to the increasing global environmental challenges that face us today. This practical degree, focusing on real-world issues, will prepare you to play your part in tackling those challenges.

Unrivalled diversity and choice
Studying Environmental Science at Liverpool will provide you with an in-depth understanding of both naturally and human induced environmental issues impacting the world today. The key strength of our programme is the unique breadth of staff expertise in the School of Environmental Sciences.

This allows you to choose from an extensive range of modules delivered by experts in their field, using state-of-the-art equipment and techniques.

Students’ choices are guided by one of five ‘module pathways’ themed around:
- Digital
- Ecology
- Oceans
- Sustainability
- Earth.

These pathways ensure that our students graduate with the specialist skills and knowledge needed for their future careers, while also having the benefit of a wide-ranging education in environmental science.

Award-winning teaching facilities
You will learn through a combination of individual and group work, including practicals in our purpose built £28 million Central Teaching Laboratories. Laboratory practicals provide a firm grounding in the latest techniques and technologies in environmental science.

Emphasis on fieldwork
From your first week to your final year, field classes are an integral part of your learning, giving you a chance to experience the environments that you are learning about, and practice using industry-standard sampling and surveying approaches. In addition to making the most of Liverpool’s coastal location, you will also have the opportunity to undertake fieldwork in the Peak District, as well as options in locations such as Portugal, Iceland and California.

Future Ready
Focussing on applied skills that are relevant to careers in our sector, you will gain expertise in monitoring, modelling and managing the environment. This will help you to get your first graduate job or move on to further study.

Environmental Science F750, is accredited by the Institution of Environmental Sciences, recognising the high quality of our programme.

Fieldwork requirements
A number of the School’s degree programmes involve laboratory and field work. The field work is carried out in various locations, ranging from inner city to coastal and mountainous environments. For students with disabilities reasonable adjustments will be considered to address barriers to access.

Languages at Liverpool
Studying a programme within Environmental Science allows you to study a language as an extra-curricular course, on top of your degree. See liverpool.ac.uk/ languages for more information.

How you learn
Our degree focuses on applied skills that are relevant to careers in environmental science, providing you with expertise in monitoring, modelling and managing the environment. Lectures, fieldwork and laboratory work are assessed through a wide range of different assessment approaches, allowing you to achieve your potential. These include “real world” assessments (eg writing of industry style briefing notes), oral presentations and report writing preparing you with a range of experience and skills required in the workplace.

Each student is assigned a member of academic staff as their advisor, to provide both pastoral care and to help you develop job application skills such as CV and cover letter writing, and conduct mock interviews.

To help students meet the intellectual and practical challenges of studying environmental science, we use a student-centred approach, involving a range of learning experiences. These include:
- An emphasis on active, problem-based learning (learning by doing)
- Small tutorial groups (typically 6-8 students) through all years.
- Supervised independent and group project work, including a final year independent research-based dissertation, supervised by a dedicated expert in the field.

The University of Liverpool provides an absolutely rich teaching and learning environment in terms of well-equipped laboratories and advanced facilities which are provided for students to use. The modules settings are quite flexible and I could choose according to my interests.

Yijin Guo, 2+2 alumnus in Environmental Science
Our Institution of Environmental Sciences (IES) accredited programme ensures that you are fully qualified to enter dynamic professions on graduation.

Our programme is varied, interdisciplinary, and has a strong practical focus linked to industry, meaning that Liverpool graduates enter a wide range of careers in the public, private and voluntary sectors.

My favorite memory of my University of Liverpool course is the field trips to both the Peak District and Santa Cruz.

Xi Mi, 2+2 alumnus in Environmental Science
Core and selected optional modules overview Year Two

<table>
<thead>
<tr>
<th>Module title</th>
<th>Semester</th>
<th>Credit</th>
<th>Module description</th>
</tr>
</thead>
<tbody>
<tr>
<td>An introduction to environmental history</td>
<td>1</td>
<td>15</td>
<td>Introduces students to the rapidly developing field of environmental history and forms a basis for more advanced environmental courses in Year Three.</td>
</tr>
<tr>
<td>Biodiversity practical skills</td>
<td>1</td>
<td>7.5</td>
<td>Develops your ability to acquire, present, critically evaluate and interpret qualitative and quantitative data related to biological specimens.</td>
</tr>
<tr>
<td>Bird ecology, identification and conservation</td>
<td>1</td>
<td>7.5</td>
<td>This field-based module aims to provide experience in many current techniques and methods used to identify, monitor and manage birds in the UK.</td>
</tr>
<tr>
<td>Catchment hydrology</td>
<td>1</td>
<td>15</td>
<td>Investigates the main hydrological processes operating in drainage catchments in terms of their measurement, operation and controlling factors.</td>
</tr>
<tr>
<td>Changing environments</td>
<td>1</td>
<td>15</td>
<td>Provides a critical insight into the global changes currently impacting the Earth over decades to millennial timescales.</td>
</tr>
<tr>
<td>Climatology</td>
<td>2</td>
<td>15</td>
<td>Provides knowledge and understanding across a number of areas of meteorology and weather, covering physical processes.</td>
</tr>
<tr>
<td>Ecology practical skills</td>
<td>2</td>
<td>7.5</td>
<td>This practical module provides you with an opportunity to experience and gain familiarity with a range of scientific, practical techniques that are used to study the terrestrial environment and its biota.</td>
</tr>
<tr>
<td>Environmental science field class</td>
<td>2</td>
<td>15</td>
<td>Provides experience in designing, executing, analysing and presenting (orally and in a report) a research project in the environmental sciences.</td>
</tr>
<tr>
<td>Environmental sustainability</td>
<td>1</td>
<td>15</td>
<td>Students will be introduced to current thinking in relation to sustainable development and locate environmental sustainability within this broader framework of ideas. They will also develop an understanding of the role of the public and private sectors in promoting environmentally sustainable development in an urban setting.</td>
</tr>
<tr>
<td>Geographic information systems for human geography</td>
<td>2</td>
<td>15</td>
<td>Develops your understanding and practical ability to apply GIS in the handling and analysis of spatial data in a human geography context.</td>
</tr>
<tr>
<td>Geomorphology: ice, sea and air</td>
<td>2</td>
<td>15</td>
<td>You will develop an understanding of major geomorphic systems and how they create terrestrial landforms.</td>
</tr>
<tr>
<td>Key skills for environmental data analysis</td>
<td>1</td>
<td>15</td>
<td>Develops knowledge, training and skills in manipulating, plotting and interpreting environmental data sets using the industry-standard Matlab software.</td>
</tr>
</tbody>
</table>

Other Year Two optional modules
In addition to the modules outside of your chosen pathway, students can also choose from:
- An introduction to environmental history (ENVS223)
- Changing environments (ENVS214)
- Climatology (ENVS231)
- Marine ecology and resource exploitation (ENVS251)
- Marine pollution (ENVS232)
- Soils, slopes and the environment (ENVS238)

Year Three
Your final year dissertation is the only compulsory module for all pathways. You will also have two additional compulsory modules, determined by your selected pathway. You will be able to choose optional modules from the other pathways’ compulsory modules or the list of optional modules. Depending on your pathway, you may have the option to take one of our overseas field courses.

Core modules
- Geography dissertation (ENVS321) or Geography work-based dissertation (ENVS323).

Digital pathway
- Geographic data science (ENVS363)
- Simulating environmental systems (ENVS397).

Ecology pathway
- Year Three core
- Advanced topics in ecology (LIFE337)
- Conservation biology (LIFE326).

Oceans pathway
- Year Three core
- Coastal environments (ENVS376)
- Contemporary issues in ocean and climate sciences (ENVS366).

Sustainability pathway
Year Three core (choose two from):
- Climate change – a critical review (ENVS389)
- Human-environmental interactions (ENVS315)
- Natural hazards and society (ENVS319).

Earth pathway
Year Three core
- Coastal environments (ENVS376)
- Fluvial environments (ENVS372).

Other Year Three optional modules
In addition to the modules outside of your chosen pathway, you can also choose from:
- Marine ecology: theory and applications (ENVS383)
- Politics of the environment (ENVS325)
- Science communication (ENVS393) (Limited availability)
- Ocean dynamics (ENVS332)
- Surviving the marine environment (ENVS300).

See pages 07-10 for module descriptions.

STAFF PROFILE
Professor Douglas Mair

Professor Mair is a professor of glaciology and the Head of the School of Environmental Sciences. He undertook his PhD at the University of Cambridge investigating the influence of subglacial hydrology on the dynamics of a temperate valley glacier. He continued studying glacier ice dynamics and basal processes to obtain a better understanding of the basal and internal processes which influence glacier motion over seasonal and annual periods, but particularly during early melt season “spring events”.

In addition to publishing in prestigious journals, Professor Mair teaches a variety of modules within Environmental Science.

Please note: modules are illustrative only and subject to change.

Continued over...
## Core and selected optional modules overview Year Two (continued)

<table>
<thead>
<tr>
<th>Module title</th>
<th>Semester</th>
<th>Credit</th>
<th>Module description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marine ecophysiology, ecology and exploitation ENVS251</td>
<td>2</td>
<td>15</td>
<td>Provides you with essential background in marine ecology, ecophysiology and resource exploitation required for study at higher levels.</td>
</tr>
<tr>
<td>Marine pollution ENVS232</td>
<td>1</td>
<td>15</td>
<td>This module will focus on the current state of our seas in relation to the various stressors, what are the causes and how do they affect the marine system.</td>
</tr>
<tr>
<td>Oceanography, plankton and climate ENVS245</td>
<td></td>
<td></td>
<td>In this module we take you from the micron scales of the tiniest plankton up to the scale of the open ocean to illustrate the fundamental links between the ocean's physical and biogeochemical processes, plankton communities and Earth's climate.</td>
</tr>
<tr>
<td>Population and community ecology LIFE214</td>
<td>2</td>
<td>15</td>
<td>Introduces the concepts and principles underlying the dynamic interactions between species within communities and populations.</td>
</tr>
<tr>
<td>Research skills ENVS203</td>
<td>1 and 2</td>
<td>15</td>
<td>Provides you with training in research methods and analysis techniques.</td>
</tr>
<tr>
<td>Soils, slopes and the environment ENVS238</td>
<td>2</td>
<td>15</td>
<td>You will gain an understanding of the fundamental properties and characteristics of slopes and soils.</td>
</tr>
<tr>
<td>Statistics for environmental scientists ENVS222</td>
<td>2</td>
<td>15</td>
<td>Provides training in statistics for environmental scientists.</td>
</tr>
<tr>
<td>Understanding marine and terrestrial spatial ecology using GIS ENVS295</td>
<td>2</td>
<td>15</td>
<td>This module aims to introduce students to the nature, operation and application of Geographical Information Systems (GIS) relevant to ecologists and marine biologists.</td>
</tr>
</tbody>
</table>
Core and selected optional modules overview Year Three (continued)

<table>
<thead>
<tr>
<th>Module title</th>
<th>Semester</th>
<th>Credit</th>
<th>Module description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ocean dynamics <strong>ENVS332</strong></td>
<td>1</td>
<td>15</td>
<td>Enables you to gain a high level understanding of ocean and atmospheric dynamics and background state of the atmosphere and ocean.</td>
</tr>
<tr>
<td>Politics of the environment <strong>ENVS325</strong></td>
<td>1</td>
<td>15</td>
<td>Critically evaluates the political responses to the growing impact that environmental issues and the concept of sustainability are having on decision making at all levels of governance (international, national and local).</td>
</tr>
<tr>
<td>Science communication <strong>ENVS393</strong></td>
<td>1 and 2</td>
<td>15</td>
<td>Provides key transferable skills to undergraduates including communication, presentation, practical classroom skills and team working.</td>
</tr>
<tr>
<td>Simulating environmental systems <strong>ENVS397</strong></td>
<td>2</td>
<td>15</td>
<td>This module aims to train students in the concepts and techniques required to construct and use numerical forward models of Earth surface systems using high-level programming languages such as Matlab and Python.</td>
</tr>
<tr>
<td>Surviving the marine environment: adaptation, behaviour and conservation <strong>ENVS310</strong></td>
<td>1</td>
<td>15</td>
<td>Develops a broad understanding of contemporary theory in behavioural ecology, evolutionary biology and ecophysiology, with special reference to the marine environment.</td>
</tr>
</tbody>
</table>

Please note: modules are illustrative only and subject to change.

Student experience, support and next steps

**Careers and Employability**
The University's Careers and Employability Centre, offers career development sessions, including drop-in sessions and a rehearsal ‘assessment centre’ experience to aid applications for graduate jobs and internships.

Specific careers and employability support is provided as part of ENVS203 which introduces and develops skills associated with geographical and environmental science research.

**School support**
All students are assigned a named academic member of staff as their Academic Advisor. This member of staff acts as your first point of contact for any academic, personal or welfare issues that may arise. They are here to help you fulfil your academic potential during the course of your studies.

The Student Experience Team provides support and advice to students and serve as the main administrative point of contact between you and the School. Our dedicated team of administrators are the first port of call for all student enquiries and provides advice and guidance for any students experiencing difficulties. The Learning and Teaching Support Advisors work closely with Senior Academic Tutors and Academic Advisors to ensure that students who are struggling with personal or health problems, or with their academic studies, receive appropriate and timely support.

**In-sessional English support**
The English Language Centre also provide an extensive, vibrant and innovative programme of English language support for students who are already studying at the University but whose first language is not English. Classes are free of charge, taught by highly-experienced, approachable English tutors, who are fully committed to helping you develop your language skills. In-sessional English support is provided throughout the academic year.

**Academic skills development with KnowHow**
KnowHow provides a range of resources from making the most out of group work to improving your academic writing skills. KnowHow offers a wide range of academic skills materials and workshops to help you gain the most from your studies. Most of our workshops and events are held in the KnowHow space in the Sydney Jones Library, and many are available online, alongside training materials from Linkedin Learning.

**Next steps**
Prior to your arrival, you will be able to access your Welcome Week Timetable via the School website (liverpool.ac.uk/environmental-sciences/welcome). Welcome Week is a full week of events which includes introduction to your programme, a guided session on module choice with your programme director, campus and city tours, a school welcome and opportunities to meet the other students in your cohort ahead of the start of teaching.

A module guidance session will give you the opportunity to talk with your programme director about your programme and module selection. Programme structures are available for you to access via the School website ahead of your arrival in Liverpool. You will then be asked to register for your modules on Liverpool Life, the University’s information portal for current students.
Find out more
liverpool.ac.uk/study

Accommodation: liverpool.ac.uk/accommodation
Fees and student finance: liverpool.ac.uk/money
Life in Liverpool: liverpool.ac.uk/study/undergraduate/welcome-to-liverpool
Student Welfare Advice and Guidance: liverpool.ac.uk/studentsupport

Enquiries
Two Plus Two Team
two-plus-two@xjtlu.edu.cn

Environmental Science
The University of Liverpool
Jane Herdman Building
Liverpool L69 3GP
liverpool.ac.uk/environment
@ env_sci
facebook/environmentalsciencesliverpool