Programme Information & PLOs

Title of the new programme – including any year abroad/ in industry variants

BSc Environmental Science

Level of qualification

Please select:	Level 6

Please indicate if the programme is offered with any year abroad / in industry variants	**Year in Industry** Please select Y/N	Yes
	Year Abroad Please select Y/N	Yes

Department(s): Where more than one department is involved, indicate the lead department

Lead Department	Environment Department
Other contributing Departments:	

Programme Leader

Dr Sylvia Toet

Purpose and learning outcomes of the programme

Statement of purpose for applicants to the programme

The Environmental Science degree from the Environment Department at the University of York will equip you with key skills to enable you to evaluate environmental problems and develop sustainable solutions. Your lecturers are experts in fields such as ecotoxicology, atmospheric chemistry, terrestrial and aquatic ecology, biogeochemistry and environmental policy. You will be trained to critically review relevant literature in a range of key environmental areas, and design and execute research both locally and overseas to address environmental problems using appropriate field, survey and laboratory methods. By your final year of study you are well equipped to undertake an independent research project utilising our state-of-the-art research faciltiies. You will become proficient in using key digital learning technologies used by professional environmental scientists such as web-based literature search tools, geographical information systems and statistical packages. The degree will also allow you to develop strong group working and project leadership skills through targetted team building exercises and training. Graduates from this degree are solution-oriented, inter-disciplinary thinkers who can communicate effectively, verbally and in writing, to a range of audiences, the key environmental challenges facing humanity and their solutions. By the end of the degree you will be able to evidence achievements in a wide range of key employability skills that will open up opportunities for careers in research, environmental consultancy, ecology and conservation and teaching.

Programme Learning Outcomes Please provide six to eight statements of what a graduate of the programme can be expected to do.
Taken together, these outcomes should capture the distinctive features of the programme. They should also be outcomes for which progressive achievement through the course of the programme can be articulated, and which will therefore be reflected in the design of the whole programme.

PLO	On successful completion of the programme, graduates will be able to:
1	Debate, interpret and explain current and emerging issues in environmental science occurring on a range of scales using appropriate methods and norms, and engage critically with best evidence on the impacts and management of climate, environmental and land use change, pollution and development [Knowledgeable and Aware]
2	Obtain, synthesise and critically evaluate complex information on environmental science and related areas from a wide range of reliable sources [Independent learner]
3	Cut across disciplinary boundaries to link knowledge and experience from a wide range of natural, physical and social sciences to understand the complex interactions occurring within and between natural and human environments [Interdisciplinary thinker]

4	Plan, design and execute research as an individual or as part of a team to address environmental questions and problems using critically-selected field, survey and laboratory methods at appropriate temporal and spatial scales [Creator of new knowledge]
5	Critically analyse and interpret qualitative and quantitative data using appropriate scientific and technological information and tools such as geographical information systems (GIS) and statistical packages to draw meaningful conclusions from research in the field of environmental science [Analytical]
6	Effectively communicate knowledge, complex ideas and persuasive arguments to professional and non-specialist audiences using verbal, written, visual and digital media [Effective communicator]
7	Recommend sustainable solutions to environmental problems that consider the broader social, political and environmental contexts, and the ethical implications of their application by applying knowledge, theories and approaches from environmental science and related disciplines [Problem solver]
8	Work responsibly as part of a team or as a team-leader to set challenging yet attainable goals and make an important contribution to defining the way in which our environment functions, understanding how it will respond to human activities and developing sustainable solutions [Team player]

Programme Learning Outcome for year in industry (where applicable)
For programmes which lead to the title 'with a Year in Industry' – typically involving an additional year – please provide either a) amended versions of some (at least one, but not necessarily all) of the standard PLOs listed above, showing how these are changed and enhanced by the additional year in industry b) an additional PLO, if and only if it is not possible to capture a key ability developed by the year in industry by alteration of the standard PLOs.

We have altered a number of PLOs relevant to our Year in Industry programme and so have provided a separate proforma for this programme.

Programme Learning Outcome for year abroad programmes (where applicable)
For programmes which lead to the title 'with a Year Abroad' – typically involving an additional year – please provide either a) amended versions of some (at least one, but not necessarily all) of the standard PLOs listed above, showing how these are changed and enhanced by the additional year abroad or b) an additional PLO, if and only if it is not possible to capture a key ability developed by the year abroad by alteration of the standard PLOs.

Explanation of the choice of Programme Learning Outcomes Please explain your rationale for choosing these PLOs in a statement that can be used for students (such as in a student handbook). Please include brief reference to:

i) Why the PLOs are considered ambitious or stretching?

The learning outcomes for our Environmental Science degree have been designed so that the programme equips you will the skills, knowledge and confidence to work independently to effectively improve our understanding of the environment around us, and both evaluate and recommend solutions to its problems. The programme requires you to be critical in terms of the information you use and the research tools you employ, persuasive and clear in the ways in which you communicate to a wide range of academic, corporate and non-specialist audiences, and interdisciplinary in your approaches towards understanding and managing the environment.

ii) The ways in which these outcomes are distinctive or particularly advantageous to the student:

The programme outcomes capture the key employability skills that graduates of an Environmental Science degree will be asked to demonstrate when applying for successful and rewarding careers in this field of work. By providing you with a clear pathway towards achieving these learning outcomes through Key Points Training (KPT) and plentiful opportunities to use and practice these skills you will be able to draw on specific examples of work that you have undertaken to evidence your accomplishments to potential future employers. Through interactions with external environmental and industrial organisations you will see how the skills embedded in our programme outcomes can be used in the workplace.

iii) How the programme learning outcomes develop students' digital literacy and will make appropriate use of technology-enhanced learning (such as lecture recordings, online resources, simulations, online assessment, 'flipped classrooms' etc)?

a. Digital literacy - Through our Environmental Science degree you will develop the key digital skills needed for effective communication, finding and using reliable sources, and analysing quantitative and qualitative datasets. You will receive training in the use of the relevant digital tools such as literature search tools (e.g. Web of Science), statistical packages (e.g. SPSS, R) and Geographical Information Systems (GIS) at key points throughout your degree and be provided with opportunities to use them in a range of applications. This will ensure that when you graduate you are ready to effectively apply these tools in a work-based setting; b. Technology-enhanced learning - We have developed an online site (the KPT Skills Hub) that you can use to develop key skills, and improve and progress throughout your degree. The online Skills Hub complements the teaching you will receive during contact hours and also gives you flexibility to work on key skills development in your own time.

iv) How the PLOs support and enhance the students' employability (for example, opportunities for students to apply their learning in a real world setting)?
The programme's employablity objectives should be informed by the University's Employability Strategy:

http://www.york.ac.uk/about/departments/support-and-admin/careers/staff/

The programme outcomes capture the key employability skills that graduates of an Environmental Science degree will be asked to demonstrate when applying for successful and rewarding careers in this field of work. By providing you with a clear pathway towards achieving these learning outcomes through Key Points Training (KPT) and plentiful opportunities to use and practice these skills you will be able to draw out specific examples of work that you have undertaken to evidence your accomplishments to potential future employers. Through interactions with external environmental and industrial organisations you will see how the skills embedded in our programme outcomes can be used in the workplace. (*note same text as in box ii as I think the link to employability is the major benefit to students*)

vi) How will students who need additional support for academic and transferable skills be identified and supported by the Department?

In every case Key Points Training is linked to a key piece of assessment. The result of this assessment will signpost to you and to the department how you are progressing towards the programme outcomes as you move through your degree. We have developed an online resource (the KPT Skills Hub) that you can use outside of contact hours to support your effective development of the skills needed to be successful in your chosen degree programme. Our programmes are also designed so that you have a wide range of opportunities to use and practice key skills developed in KPT training in a number of other core and optional modules.

vii) How is teaching informed and led by research in the department/ centre/ University?

We are a research-active department and share our latest research findings and methods with you through our teaching. Throughout your degree you will be actively involved in designing and undertaking research projects aimed at both understanding the world around us and solving environmental problems. All of our courses include fieldtrips that allow you to see how the theory and knowledge you have been taught in lectures apply in a range of national and international settings. Through tutorials and seminars you will gain experience in discussing cutting-edge research and develop key communication skills. Lectures are supplemented by guest speakers from the environmental think-tank the Stockholm Environment Institute (SEI), and a range of external environmental and industrial organisations, exposing you to potential areas of future employment throughout your degree.

Stage-level progression
Please complete the table below, to summarise students' progressive development towards the achievement of PLOs, in terms of the characteristics that you expect students to demonstrate at the end of each year. This summary may be particularly helpful to students and the programme team where there is a high proportion of option modules.

Note: it is not expected that a position statement is written for each PLO, but this can be done if preferred (please add information in the 'individual statement' boxes). For a statement that applies across all PLOs in the stage fill in the 'Global statement' box.

Stage 0 (if your programme has a Foundation year, use the toggles to the left to show the hidden rows)	
Stage 1	
On progression from the first year (Stage 1), students will be able to:	*Engage with theory, knowledge and emerging issues in Environmental Science and be able to undertake research as part of a group*

PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8
Interpret and explain fundamental concepts and current and emerging issues in environmental science	Identify and synthesise reliable, relevant sources in a coherent form for information needs	Understand the importance of interdisciplinarity in environmental science, including the complex interactions occurring within and between the natural and human environments	Collect high quality environmental data using a range of approaches and design and undertake guided research as part of a group	Carry out fundamental calculations, organise and summarise datasets and analyse and interpret environmental data with guidance using basic statistical analysis and programmes	Communicate effectively in essays, scientific reports, presentations and other forms of visual communication, and confidently participate in class discussions	Understand and explain a range of solutions to environmental problems	Work effectively as part of a team in laboratory, fieldwork and classroom settings
Stage 2							
On progression from the second year (Stage 2), students will be able to:	*Use theoretical and practical knowledge to design and undertake research as part of a group, and critically evaluate sustainable solutions to environmental problems*						
PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8
Interpret, explain and critically evaluate advanced concepts in environmental science, and use this knowledge to debate sustainable solutions to environmental problems	Critically evaluate sources to develop ideas in written work and other forms of communication	Independently design field and laboratory studies and generate ideas that incorporate approaches and ideas from a range of academic disciplines	Design and undertake research as part of group, including the formulation of research questions	Apply fundamental calculations to environmental problems, and analyse and interpret large environmental datasets independently using advanced statistical analysis	Develop persuasive arguments in written work, verbally and through other forms of communication including newspaper articles and videos	Critically evaluate solutions to environmental problems	Work effectively as part of a team or as a team leader in laboratory, fieldwork and classroom settings

Programme Structure

Module Structure and Summative Assessment Map

Please complete the summary table below which shows the module structure and the pattern of summative assessment through the programme.

'Option module' can be used in place of a specific named option. If the programme requires students to select option modules from specific lists these lists should be provided in the next section.

From the drop-down select 'S' to indicate the start of the module, 'A' to indicate the timing of each distinct summative assessment point (eg. essay submission/ exam), and 'E' to indicate the end of the module (if the end of the module coincides with the summative assessment select 'EA') . It is not expected that each summative task will be listed where an overall module might be assessed cumulatively (for example weekly problem sheets).

If summative assessment by exams will be scheduled in the summer Common Assessment period (weeks 5-7) a single 'A' can be used within the shaded cells as it is understood that you will not know in which week of the CAP the examination will take place.

Stage 0 (if you have modules for Stage 0, use the toggles to the left to show the hidden rows)

Stage 1

Credits	Module		Autumn Term										Spring Term										Summer Term									
	Code	Title	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
10		Frontiers in Environmental Research											S						A	A		EA										
20		Data analysis for Environmental Research	S									A										EA										
20	ENV00002C	Ecological Principles for the Environment	S							A								A				E					A	A	A			
10	ENV00018C	Environment, Development and Society	S									E	A																			
20	ENV00001C	Dynamic Earth	S																			E					A	A	A			
20		Concepts in ES	S														A					EA										
20	ENV00007C	Field Project (EG, ES)																		S					E	A						
Stage 2																																
Credits	**Module**		**Autumn Term**										**Spring Term**										**Summer Term**									
	Code	**Title**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
10	ENV00002I	Climate Change: Science, Observations and Impacts											S								A	E										
10	ENV00016I	Environmental Systems Project	S				A					EA																				
20	ENV00024I	Ecosystem Processes	S										A					A				E					A	A	A			
20	ENV00019I	Environmental Geochemistry	S									A										E					A	A	A			
20	ENV00010I	Residential Field Course																		S			E	A	A							
20	ENV00013I	Energy and the Environment	S												A							E					A	A	A			
10	ENV00020I	Biogeography											S									EA										

20	ENV00003I	Earth Processes and Landforms	S																			E		A			A	A	A			
10	ENV00012I	Geographical Information Systems	S									EA																				
10	BIO00005I	Environmental Ecology											S											E			A	A	A			
10	ENV00001I	Ocean Management and Conservation											S									E					A	A	A			
Stage 3																																
Credits	**Module**		**Autumn Term**										**Spring Term**										**Summer Term**									
	Code	**Title**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
40	ENV00011H	3rd Year Research Project	S																						EA							
20	ENV00034H	Atmosphere and Ocean Science	S											A								E					A	A	A			
20	ENV00039H	Pollution Monitoring, Assessment and Control	S								A										A	E					A	A	A			
20	ENV00036H	Biodiversity and Society	S			A																E					A	A	A			
20	ENV00040H	Land Use Change and Management	S																			E					A	A	A			
20	ENV00037H	Environmental Politics	S																			EA										
20	ENV00041H	Environmental Hazards	S																	A		E					A	A	A			
20	ENV00026H	Glaciology and Volcanism in Iceland	S								A	E																				

Optional module lists If the programme requires students to select option modules from specific lists these lists should be provided below. If you need more space, use the toggles on the left to reveal ten further hidden rows.

Option List A	Option List B	Option List C	Option List D	Option List E	Option List F	Option List G	Option List H

Energy and the Environment	Biodiversity and Society	Atmosphere and Ocean Science					
Biogeography	Land Use Change and Management	Pollution Monitoring, Assessment and Control					
Earth Processes and Landforms	Environmental Hazards						
Geographical Information Systems	Glaciology and Volcanism in Iceland						
Ocean and Coastal Management							
Environmental Ecology							

Management and Admissions Information

This document applies to students who commenced the programme(s) in:	2017/18

Interim awards available Interim awards available on undergraduate programmes (subject to programme regulations) will normally be: Certificate of Higher Education (Level 4/Certificate), Diploma of Higher Education (Level 5/Intermediate), Ordinary Degree and in the case of Integrated Masters the Bachelors with honours. Please specify any proposed exceptions to this norm.

Certificate of Higher Education (Level 4/Certificate)
Diploma of Higher Education (Level 5/Intermediate)

Admissions Criteria

TYPICAL OFFERS
A levels
AAB
AAB/ABB for L7F6,
L7F7, L7F8, L7F9
IB Diploma Programme
34 points
35/34 points for L7F6,
L7F7, L7F8, L7F9
BTEC Extended Diploma
DDM
DDD/DDM for L7F6,
L7F7, L7F8, L7F9
O

Length and status of the programme(s) and mode(s) of study

Programme	**Length (years)**	**Status (full-time/part-time)** Please select	**Start dates/months** (if applicable – for programmes that have multiple intakes or start dates that differ from the usual academic year)	**Mode**				
				Face-to-face, campus-based		**Distance learning**		**Other**
BSc (Hons) Environmental Science	3	Full-time		Please select Y/N	Yes	Please select Y/N	No	n/a

Language(s) of study

English.

Language(s) of assessment

English.

Programme accreditation by Professional, Statutory or Regulatory Bodies (PSRB)

Is the programme recognised or accredited by a PSRB

Please Select Y/N:	Yes	if No move to next Section if Yes complete the following questions

Name of PSRB

Institute of Environmental Sciences, CHES

Are there any conditions on the approval/ accreditation of the programme(s)/ graduates (for example accreditation only for the full award and not any interim award)

Additional Professional or Vocational Standards

Are there any additional requirements of accrediting bodies or PSRB or pre-requisite professional experience needed to study this programme?

Please Select Y/N:		if Yes, provide details

(max 200 words)

University award regulations

The University's award and assessment regulations apply to all programmes: any exceptions that relate to this programme are approved by University Teaching Committee and are recorded at the end of this document.

Are students on the programme permitted to take elective modules?

(See: https://www.york.ac.uk/media/staffhome/learningandteaching/documents/policies/Framework%20for%20Programme%20Design%20-%20UG.pdf)

Please Select Y/N:		

Careers & Placements - 'With Placement Year' programmes

Students on all undergraduate and integrated masters programmes may apply to spend their third year on a work-based placement facilitated by Careers & Placements. Such students would return to their studies at Stage 3 in the following year, thus lengthening their programme by a year. Successful completion of the placement year and associated assessment allows this to be recognised in programme title, which is amended to include 'with Placement Year' (e.g. BA in XYZ with Placement Year'). The Placement Year also adds a Programme Learning Outcome, concerning employability. (See Careers & Placements for details).

In exceptional circumstances, UTC may approve an exemption from the 'Placement Year' initiative. This is usually granted only for compelling reasons concerning accreditation; if the Department already has a Year in Industry with criteria sufficiently generic so as to allow the same range of placements; or if the programme is less than three years in length.

Programme excluded from Placement Year?	Yes	If yes, what are the reasons for this exemption: Environment has an existing 'Year in Industry' which has an assessment mechanism & placement criteria that are very similar to the Careers With Placement Year.

Study Abroad (including Year Abroad as an additional year and replacement year)

Students on all programmes may apply to spend Stage 2 on the University-wide North America/ Asia/ Australia student exchange programme. Acceptance onto the programme is on a competitive basis. Marks from modules taken on replacement years count toward progression and classification.

Does the programme include the opportunity to undertake other formally agreed study abroad activities? All such programmes must comply with the Policy on Study Abroad

https://www.york.ac.uk/staff/teaching/procedure/programmes/design/__

Please Select Y/N:	No	

Additional information

Transfers out of or into the programme

ii) Transfers into the programme will be possible? (please select Y/N)	No	
Additional details:		
ii) Transfers out of the programme will be possible? (please select Y/N)	No	
Additional details:		

Exceptions to University Award Regulations approved by University Teaching Committee

Exception Please detail any exceptions to University Award Regulations approved by UTC	**Date approved**

Date on which this programme information was updated:

23/01/2017

Please note:

The information above provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if they take full advantage of the learning opportunities that are provided.

Detailed information on the learning outcomes, content, delivery and assessment of modules can be found in the module descriptions.

The University reserves the right to modify this overview in unforeseen circumstances, or where the process of academic development, based on feedback from staff, students, external examiners or professional bodies, requires a change to be made. Students will be notified of any substantive changes at the first available opportunity.

Programme Map

Please note: the programme map below is in interim format pending the development of a University Programme Catalogue.

Programme Map: Module Contribution to Programme Learning Outcomes

This table maps the contribution to programme learning outcomes made by each module, in terms of the advance in understanding/ expertise acquired or reinforced in the module, the work by which students achieve this advance and the assessments that test it. This enables the programme rationale to be understood:

· Reading the table vertically illustrates how the programme has been designed to deepen knowledge, concepts and skills progressively. It shows how the progressive achievement of PLOs is supported by formative work and evaluated by summative assessment. In turn this should help students to understand and articulate their development of transferable skills and to relate this to other resources, such as the Employability Tutorial and York Award;

· Reading the table horizontally explains how the experience of a student at a particular time includes a balance of activities appropriate to that stage, through the design of modules.

Stage	Module		Programme Learning Outcomes							
			PLO1	**PLO2**	**PLO3**	**PLO4**	**PLO5**	**PLO6**	**PLO7**	**PLO8**
			Debate, interpret and explain current and emerging issues in environmental science occurring on a range of scales using appropriate methods and norms, and engage critically with best evidence on the impacts and management of climate, environmental and land use change, pollution and development [Knowledgeable and Aware]	**Obtain, synthesise and critically evaluate complex information on environmental science and related areas from a wide range of reliable sources [Independent learner]**	**Cut across disciplinary boundaries to link knowledge and experience from a wide range of natural, physical and social sciences to understand the complex interactions occurring within and between natural and human environments [Interdisciplinary thinker]**	**Plan, design and execute research as an individual or as part of a team to address environmental questions and problems using critically-selected field, survey and laboratory methods at appropriate temporal and spatial scales [Creator of new knowledge]**	**Critically analyse and interpret qualitative and quantitative data using appropriate scientific and technological information and tools such as geographical information systems (GIS) and statistical packages to draw meaningful conclusions from research in the field of environmental science [Analytical]**	**Effectively communicate knowledge, complex ideas and persuasive arguments to professional and non-specialist audiences using verbal, written, visual and digital media [Effective communicator]**	**Recommend sustainable solutions to environmental problems that consider the broader social, political and environmental contexts, and the ethical implications of their application by applying knowledge, theories and approaches from environmental science and related disciplines [Problem solver]**	**Work responsibly as part of a team or as a team-leader to set challenging yet attainable goals and make an important contribution to defining the way in which our environment functions, understanding how it will respond to human activities and developing sustainable solutions [Team player]**
Stage 1	Frontiers in Environmental Research	Progress towards PLO	Develops knowledge, understanding and awareness	Practice in finding and using sources	Develops awareness of the importance of interdisciplinarity			**KPT in essay writing and in verbal presentation**	Develops awareness of environmental problems and their solutions	Practice in working as a group

		By working on (and if applicable, assessed through)	Tutorials on research papers on **current topics in environmental science**	Opportunity to discuss tutorial papers as a group. Finding and using relevant literature for the essay (assessed)	Studying tutorial papers that cut across key disciplines in environmental science			Training in structuring an essay and preapring an essay on a topic raised in one of the tutorial papers (assessed essay). Preparation on a key topic in environmental science (assessed)	Reading papers in a range of current issues in environmental science	Discussing tutorial papers as a group	
Stage 1	Concepts in ES	Progress towards PLO	Develops knowledge, understanding and awareness	**KPT in finding and using sources**		**KPT on research process. Practice in primary data collection**	**KPT in fundamental calculations for environmental science. Practice in data handling and statistical analysis**			Practice in working as a group	
		By working on (and if applicable, assessed through)	Studying the fundamental principles that underlie environmental functioning	Training in literature searching and using sources in preparation of a summative lab report.		Training in laboratory experimental design and field sampling strategies primary data are collected during field and laboratory practicals	Training in the use of fundamental calculations needed for environmental science. Collating and analysing data collected in the laboratory and in the field.			Working as a group during field and laboratory practicals	
Stage 1	Data Analysis for Environmental Research	Progress towards PLO				Exposure to different approaches of data collection	**KPT in data handling and analysis**				
		By working on (and if applicable, assessed through)				Working with datasets collected by staff in their research. Dataests will be introduced by staff in short videos.	Organising and analysing datasets collected and introduced by individual staff members (assessed by small tasks collated into a portfolio)				
Stage 1	Ecological Principles for the Environment	Progress towards PLO	Develops knowledge, understanding and awareness	Practice in finding and using sources	Develops awareness of the importance of interdisciplinarity	Practice in primary data collection	Practice in data handling and statistical analysis	**KPT in scientific report writing**		Practice in working as a group	
		By working on (and if applicable, assessed through)	Lectures and practicals on **ecological theories and skills** (assessed by exam)	***Independent study:*** finding sources on ecological theories in preparation for scientific report assessments	Lectures and practicals on **ecological problems and how society can manage** and affect these (assessed by scientific reports)	***Lecturer-defined practicals:*** *primary data are collected on ecology-based field studies*	***Statistics:*** *Analysis and interpretation of ecological data (assessed in scientific report)*	Write up of scientific reports on ecological research as summative assessments		Groupwork during data collection during field practicals.	

Stage 1	Environment, Development and Society	Progress towards PLO	Develops knowledge, understanding and awareness	Practice in finding and using sources	Develops awareness of the importance of interdisciplinarity			Practice in verbal communication	Develops awareness of environmental problems and their solutions	Practice in working as a group	
		By working on (and if applicable, assessed through)	Discussions and debates on a range of **developmental and sustainability issues**. The topics serve as a platform during the tutorial sessions to critically engage with theory covered during the lecture sessions (assessed by exam)	***Independent study and in-class discussions:*** *Identifying literature from a range of sources and synthesise the information in a coherent form to be used during discussion sessions and exam assessment*	Preparation for seminars that involve literature search and reviewing articles from a range of disciplines e.g development studies, environmental sciences and human geography			Preparing a power point presentation as a group, debates and discussions on sustainability issues during seminars	Seminar discussion topics which are structured to encourage problem based learning on s**ustainability problems** and how they are entwined in legal, social, and ethical issues are set and solutions for which are discussed during the discussion sessions	Working as a part of a team during seminar discussions	
Stage 1	Dynamic Earth	Progress towards PLO	Develops knowledge, understanding and awareness			Practice in primary data collection				Practice in working as a group	
		By working on (and if applicable, assessed through)	Studying **how the planet 'works' through an introduction to the spheres** (exam assessment)			***Lecturer-defined practicals:*** *primary data are collected during lab practicals and a field trip to the North Yorks Moors focussing on rock identifications and ocean processes.*				Working as a part of a team during lab and field studies	
Stage 1	Field Project (EG & ES)	Progress towards PLO	Develops knowledge, understanding and awareness	Practice in finding and using sources	Develops awareness of the importance of interdisciplinarity	Practice in primary data collection	Practice in data handling and statistical analysis	Practice in scientific report writing, note-keeping and **KPT in poster preparation**	Develops awareness of environmental problems and their solutions	**KPT training in team working**	

		By working on (and if applicable, assessed through)	Field observation, data collection and discussion on **land use, natural hazards, climate change** (assessed by poster, project report and field note book) and flood control course (assessed by contribution mark for flood control course)	***Independent study:*** *Independent research for preparation of poster (range of potential topics spanning ES/EG). Independent research for summative project report.*	Studying topics that encompass both **geographical and environmental science** themes (assessed in report)	***Mostly lecturer-defined research projects but some student-led aspects:*** *Planning and executing field project and daily mini-projects (assessed by field note book)*	**Statistics:** Analysing and interpreting project dataset. Analysing and interpreting poster marks data in computer practical (assessed by report)	***Visual communication:*** preparing a poster (summative assessment). ***Written communication:*** preparing a summative project report. ***Mixed visual and written communication:*** preparing an assessed field notebook. ***Verbal communication***: presentation of flood control strategy to Yorkshire Water and the Environment Agency (assessed via contribution mark for flood control course)	Developing a project report which asks students to use their field data to make land management recommendations. Preparing a flood control strategy for York.	Extensive teamwork in preparing a poster before field trip, in daily mini-projects on field trip and in collecting field data for project report. Working as a team and teamwork training during the flood control course. Assessed by summative contribution mark for flood control course.	
Stage 2	Climate Change: Science, Observation and Impacts	Progress towards PLO	Develops knowledge, understanding and awareness	Practice in finding and using sources	Develops awareness of the importance of interdisciplinarity	Develops skills in data collection and handling, and research project design	Develops skills in scientific modelling	Develops skills in written comunication	Develops awareness of environmental problems and their solutions, and provides experience in designing sustainable solutions	Practice in working as a group	

		By working on (and if applicable, assessed through)	Studying the **public perception, best evidence of impacts, mitigation and adaptations to climate change including recommendations for future emissions reductions in carbon.**	***Independent study:*** Scientific report is an independent piece of work that involves obtaining, synthesising and critically evaluating complex information on climate change from a wide range of reliable sources	Media seminar which involves students thinking about something other than the science of climate change and how the need to sell papers affects reporting. The scientific report involves working across disciplinary boundaries. As well as considering the scientific aspects behind climate change, students also consider the social, political and economic aspects.	***Student-led research projects, groups:*** For a scientific report, students plan, design and execute research as an individual to address climate change using modelling software	***Modelling***: For a report, they use quantitative data to make recommendations for emissions control in the future. This includes carrying out a set of model runs where it is possible to generate large amounts of data, so critical evaluation of the results to provide a coherent report is key.	***Written:*** effectively communicating knowledge, complex ideas and persuasive arguments for a summative written report. Design and write an eye-catching yet scientifically informative summative newspaper article on climate change.	A report recommending sustainable solutions to climate change considering the broader social, political and environmental contexts, and the ethical implications of their application by applying knowledge, theories and approaches from the module and wider degree	***Groupwork:*** Work responsibly as part of a team or as a team-leader to design and write an eye catching yet scientifically informing newspaper article on climate change	
Stage 2	Environmental Geochemistry	Progress towards PLO				Develops skills in data collection and handling	Develops skills in performing scientific calculations			Develops team-working skills	
		By working on (and if applicable, assessed through)				***Lecturer-led laboratory practicals:*** A range of laboratory practicals and calculation methods that students may choose to apply in their 3rd / 4th year projects	***Calculations:*** A range of laboratory and paper based practicals in which environmental science data is analysed to gain insight and information about various topics relevant to environmental science. Assessed by summative coursework and exam.			***Groupwork:*** Working in groups to carry out laboratory practicals	
Stage 2	Environmental Systems Project	Progress towards PLO	Develops knowledge, understanding and awareness	Practice in finding and using sources		Develops skills in data collection and handling, and research project design	Develops data handling and analysis skills	Devlops skills in oral and written comunication	Develops awareness of environmental problems and provides experience in critically evaluating sustainable solutions	Practice in working as a group	

		By working on (and if applicable, assessed through)	Undertaking research for group project on the **impacts of development on the environment** (assessed in a summative verbal assessment and scientific report)	***Independent study:*** *Literature search for project report exploring one aspect of human impacts on the environment (assessed in scientific report)*		***Student-led research projects, groups:*** *Designing a field/ lab project as part of a group. Defining a research question, aim and objectives, sampling strategy, collecting data in the field/ lab, analysing the data and communicating the findings. Assessed in verbal presentation of a research plan.*	***Statistics:*** *Analysis of field/lab data. Use of SPSS. Independent design of data analysis. Assessed in summative assessments: verbal presentation of a research plan and scientific report.*	***Oral****: Individual presentation of a research plan;* ***Written:*** *Individual project write-up as a scientific report on data collected in group project. Reportincludes a technical summary for a non-specialist audience (University of York Estates).*	Students are asked to propose sustainable solutions to **mitigating the impacts of development** on the environment. Assessed in a summatively assessed scientific report.	Working as a group to design and perform research project	
Stage 2	Ecosystem Processes	Progress towards PLO	Develops knowledge, understanding and awareness	Practice in finding and using sources	Develops awareness of the importance of interdisciplinarity	Develops skills in data collection and handling, and research project design	Develops data handling and analysis skills and experience in performing scientific calculations	Develops skills in written and oral comunication	Develops awareness of environmental problems and their solutions	Develops team-working skills	
		By working on (and if applicable, assessed through)	Preparation of lectures, seminars, practicals (and reports) and exam on **key ecosystem processes involving microbes, plants and soils,** and their responses to human activities. Assessed by exam and scientific reports.	***Independent study and in-class discussions:*** Literature search for summative lab reports and seminars on microbial, soil and plant ecology	Seminar preparation and discussions on current ecological topics	***Student-led research projects, groups:*** Design of research carried out in field/lab practicals on environmental control of microbial and plant growth (group work). Assessed by scinetific reports.	***Calculations***: various key plant and soil variables, microbial growth rate. ***Statistics:*** Descriptive and inferential statistical analysis of data sets collected in field and lab using Excel and SPSS. Assessed in summative scientific reports.	***Written:*** Write-up of research results as summative scientific reports; ***Oral:*** Seminar discussions and presentation	Designing and undertaking field /laboratory experiments on **impacts of land use change** and **propose management recommendations to improve plant community development.** Assessed in summative scientific report on controls on plant growth.	***Group work:*** lab practicals and seminars	
Stage 2	Residential Field Course	Progress towards PLO	Develops knowledge, understanding and awareness		Develops awareness of the importance of interdisciplinarity	Develops skills in data collection and handling, and research project design	Develops data handling and analysis skills	Develops skills in oral and written comunication	Develops awareness of environmental problems and their solutions	Practice in working as a group	

		By working on (and if applicable, assessed through)	Day trips to sites in Tenerife to understand the **ecology of the island; anthropogenic pressures and how the island is responding to these**. Assessed by an exam.		Open exam questions which require students to draw upon wide range of information picked up through the week	***Student-led research projects, groups:*** Two day group research project. Assessed by field notebook.	***Statistics:*** Statistical analysis of data generated during the group project	***Oral:*** Presentation of the group project to peers and lecturers; ***Written:*** keeping a field notebook	Studying anthropogenic pressures on an island environment and how it is responding to these (assessed in exam)	***Groupwork:*** Working in a group of around six students to design and deliver a research project and present the results to their peers. Assessed by group presentation.	
Stage 2	Geographical Information Systems	Progress towards PLO	Develops knowledge, understanding and awareness		Develops awareness of the importance of interdisciplinarity	Develops skills in data collection and handling, and research project design	Develops data handling and analysis skills	Develops skills in written comunication			Skills taught in KPT training.
		By working on (and if applicable, assessed through)	Undertaking a **GIS project** on one of three project topics (**wind power; flood risk mapping; air pollution and health**). Assessed in the scientific report.		Undertaking projects which call for the combination of physical science and socio-economic spatial datasest. Assessed in summative report.	***Student-led project:*** There are many ways in which these multiple spatial datasets can be combined in carying out the project allowing new insights and knowledge to be created. Assessed in summative report.	***GIS, Statistics:*** Designing and performing GIS analysis of diverse spatial datasets and reporting results in a summative report. Encouragement is given to perform some statistical analysis beyond the GIS work.	***Written:*** Reporting the project work in a summative scinetific report.			
Stage 2	Energy and the Environment	Progress towards PLO	Develops knowledge, understanding and awareness	Practice in finding and using sources	Develops awareness of the importance of interdisciplinarity		Develops data handling and analysis skills	Develops skills in written comunication	Develops awareness of environmental problems and critically evaluating their solutions	Develops team-working skills	

		By working on (and if applicable, assessed through)	Gaining knowledge on **technical, social and spatial dimensions of energy systems and how these interact with environmental parameters**; students also gain knowledge and experience of some of the **key methodologies used in managing and protecting the environment**. (assessed by exam)	***Independent study:*** The summative coursework essay requires selection of a target country and then detailed research and analysis of country-specific energy issues and policies to determine the extent to which environmental problems influence energy policy.	Studying energy as a socio-technical system. The summative coursework essay in particular requires understanding and expression of energy as a socio-technical system.		***Secondary data handling:*** The summative coursework essay requires analysis of country-specific energy issues and policies to determine the extent to which environmental problems influence energy policy.	***Written:*** Preparation of argument-based summative essay	Undertaking problem-based tasks in groups across five practical sessions exploring **EIA, SEA, carbon policy, energy futures, community engagement.** Assessed by summative essay and exam.	***Groupwork: Working as a group on*** problem-based tasks across five practical sessions (EIA, SEA, carbon policy, energy futures, community engagement)
Stage 2	Ocean Management and Conservation	Progress towards PLO	Develops knowledge, understanding and awareness	Practice in finding and using sources	Develops awareness of the importance of interdisciplinarity		Develops data handling and analysis skills		Develops awareness of environmental problems and their solutions	Develops team-working skills
		By working on (and if applicable, assessed through)	Lectures and practical on a wide range of topics of interest to **ocean conservation and management** (assessed by exam)	**Independent study:** Reading around the lectures (assessed in exam)	Discussing environmental management problems which are invariability interdisciplinary		***Statistics***: Practical requires data analysis and interpretation		**Studying marine conservation and management approaches and issues (assessed by exam)**	***Groupwork:*** Lab practical offers opportunity for group work
Stage 2	Earth Processes and Landforms	Progress towards PLO	Develops knowledge, understanding and awareness	Practice in finding and using sources			Develops data handling and analysis skills	Develops skills in written comunication		Practice in working as a group
		By working on (and if applicable, assessed through)	Covering material and fieldtrips on **coastal and past glacial environments**. Field trip locations are Filey Bay (beach profiling and sediment description) and the Lake District (examine past glacial environments and interpret the landscape). Knowledge assessed by exam.	***Independent study:*** Literature search using journals for report and additional background reading throughout the module especially in preparation for the exam			***Statistics:*** analysis of field data for a summative report. Field based analysis of sediment	***Written:*** write up of summatively assessed report in scientific style		***Groupwork:*** Working as a group to collect data for individual reports

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Stage 2	Biogeography	Progress towards PLO	Develops knowledge, understanding and awareness	Practice in finding and using sources	Develops awareness of the importance of interdisciplinarity	Develops skills in data collection and handling, and research project design	Develops data handling and analysis skills	Develops skills in oral, written and visual comunication		Practice in working as a group	**Optional modules** contributing to *Knowled*
		By working on (and if applicable, assessed through)	Studying the **patterns and process of temperate ecosystems.** Assessed via scientific report.	***Independent study:*** Independent background research and field observation on pattern and process of temperate ecosystems. Produce a summative field report	Bringing together a range of information from the fields of ecology, environmental management and geography in a summative report.	Designing a field/ lab project as part of a group. Defining a research question, aim and objectives, sampling strategy, collecting data in the field/ lab, analysing the data and communicating the findings.	***Statistics:*** Analysis of collected experimental data and presented in a summative report	***Written:*** preparing a summatively assessed scientific report		***Groupwork:*** Working in groups to carry out field-based practicals	
Stage 2	Environmental Ecology	Progress towards PLO	Develops knowledge, understanding and awareness	Develops skills in finding, using and discussing sources	Develops awareness of the importance of interdisciplinarity			Devlops skills in oral comunication	Develops awareness of environmental problems and the critical evaluation of their solutions	Develops team-working skills	
		By working on (and if applicable, assessed through)	Studying key contemporary environmental issues, largely **focussing on global environmental change (GEC).** Assessed by exam.	***Independent study and in-class discussions:*** preparation for seminars on global environmental change	Studying Global Environmental Change problems which are interdisciplinary.			***Oral:*** seminar discussions on global environmental change	Studying the development of the ecosystem approach, leading to the concepts of "ecosystem services" and exploring geoengineering solutions and their ramifications. Assessed by exam.	***Groupwork:*** seminar discussions	
Stage 3	3rd Year Research Project	Progress towards PLO	Develops knowledge, understanding and awareness	Practice in finding and using sources	Develops awareness of the importance of interdisciplinarity	Develops skills in data collection and handling, and research project design	Develops data handling and analysis skills	Develops skills in written comunication	Develops awareness of environmental problems and their solutions, and provides experience in designing sustainable solutions	Develops team-working skills	

		By working on (and if applicable, assessed through)	**Undertaking in depth research on a specific environmental science topic. Assessed in dissertation.**	***Independent study and discussions with supervisor:*** independent research for dissertation project design and the interpretation of the findings. Assessed in dissertation.	Designing and undertaking an environmental science dissertation. Project design and implementation assessed by scientific report.	***Independent research design:*** Independently design and undertake a field or laboratory study on a specific topic in environmental science. Projectdesign and implementation assessed by dissertation.	***Statistics:*** Independently design and undertake analysis of dissertation data. Assessed by dissertation.	***Written:*** preparing a dissertation topresent independent research findings. Report structuring, language and text assessed by dissertation.	Investigating how the environment functions and how problems can be avoided or mitigated. Assessed by dissertation.	***Teamwork:*** working with data providers and field/laboratory coworkers to collect dissertation data.	
Stage 3	Atmosphere and Ocean Science	Progress towards PLO	Develops knowledge, understanding and awareness	Practice in finding and using sources	Develops awareness of the importance of interdisciplinarity		Develops skills in scientific modelling, and experience in performing scientific calculations	Develops skills in oral and visual comunication	Develops awareness of environmental problems and their solutions	Develops team-working skills	
		By working on (and if applicable, assessed through)	Studying the **science of the oceans an the atmosphere, how they interact and are altered by human activities**. Assessed by exam and in summative oral assessment.	***Independent study and in-class discussions:*** Independent reading for seminar discussions and to support lectures and prepare for exam. Independent research task set at the end of each lecture. Assessed in oral presentation and exam.	Studying atmospheric and ocean science and the boundaries between them. Also discussing aspects of chemistry, physics and biology. Trip to City of York Council Air Quality Unit gives students experience of working at the coal face and applying the theory learnt in lectures. Assesesd in summative oral presentation and exam.		***Calculations:*** Examples classes for both the ocean and atmospheric science aspects; ***Modelling***: PC practical on clean and polluted air.	***Oral:*** Discussion in groups during seminars, oral presentation of work in coursework assessment; ***Visual, digital:*** Students plan a demonstration of a physical oceanography concept after consideration of relevant theory and then document the process through a short film or photographs, which form the basis of a presentation.	PC practical on clean and polluted air.	***Groupwork:*** Working in a team to prepare material for coursework presentation.	
Stage 3	Pollution Monitoring, Assessment and Control	Progress towards PLO	Develops knowledge, understanding and awareness	Develops skills in finding and using sources	Develops awareness of the importance of interdisciplinarity	Develops skills in data collection and handling, and research project design	Develops data handling and analysis skills	Develops skills in written comunication	Develops awareness of environmental problems and their solutions, and provides experience in designing sustainable solutions	Develops team-working skills	

		By working on (and if applicable, assessed through)	Students study approaches to **pollution monitoring, assessment and control. Assessed in an exam.**	***Independent study:*** Independent background research in prepartion for summative scientific reports	PMAC is interdisciplinary by nature addressing aspects of policy, chemistry, biology and engineering. (assessed in exam)	***Independent project:*** Designing an aquatic ecosystem monitoring plan. Conducting a desk-based contaminated land assessment.	***Statistics:*** Analysis of both the field/laboratory-generated experimental data and analysis of the hypothetical data set. Assessed in summative report.	***Written:*** Assessed summative scientific reports.	Designing an **aquatic ecosystem monitoring plan**. Conducting a desk-based **contaminated land summative assessment**.	***Groupwork:*** Working as a group during the field/laboratory sessions.	
Stage 3	Glaciology and Volcanism in Iceland	Progress towards PLO	Develops knowledge, understanding and awareness	Practice in finding and using sources		Develops skills in data collection and handling, and research project design	Develops data handling and analysis skills	Develops skills in oral and written comunication		Develops team-working skills	to practice skills taught in KPT training.
		By working on (and if applicable, assessed through)	**Studying a range of relevant geographical topics relevant to Iceland. Assessed in oral presentations and field note-book.**	***Independent study:*** Preparation for summative scientific paper, requiring students to explore their chosen topic in great detail and depth.		***Lecturer-led research:*** Students must analyse and synthesise data gathered each day in the field, and present this each evening (in groups). They use GIS, statistics and a range of field-techniques. Many students go on to use GIS approaches in their independent write-up too; ***Student-led projects:*** students design their own independent project for the assessment.	***Statistics:*** students continuously analyse and interpret data collected in the field, and to consider the significance of their findings for understanding the landscape.	***Oral:*** Communication of findings and interpretation of data in a series of summative group presentations in Iceland; ***Written:*** in summatively assessed field-note books and in the form of a summative report write-up.		***Groupwork:*** Field work and presentations throughtout the week are both carried out in groups.	
Stage 3	Biodiversity and Society	Progress towards PLO	Develops knowledge, understanding and awareness	Practice in finding and using sources	Develops awareness of the importance of interdisciplinarity	Develops skills in data collection and handling	Develops data handling and analysis skills	Develops skills in oral and visual comunication		Develops team-working skills	

		By working on (and if applicable, assessed through)	**Studying links between biodiversity and society. Assessed by exam.**	***Independent study and in-class discussions:*** reading for seminar discussions. Identification of relevant sources to support class presentation. Reading more widely around topics to support lectures and prepare for exam.	Integrating data from ecology and social sciences to better understand and manage the natural environment. Assessed by exam.	***Lecturer-led practical:*** collecting survey data during a field practical	***Statistics:*** practical on analysis of social sciences data.	Seminar on science communiction. ***Digital, visual:*** practical on using and creating videos for summatively assessed science communication in a written article or video; ***Oral:*** class presentations on wider reading, participation in seminars		***Groupwork:*** Working in a team to prepare material for class presentations on wider reading. Data collection practical in small groups.
Stage 3	Environmental Hazards	Progress towards PLO	Develops knowledge, understanding and awareness	Practice in finding and using sources	Develops awareness of the importance of interdisciplinarity		Develops data handling and analysis skills	Devlops skills in written comunication		
		By working on (and if applicable, assessed through)	Studying the **physical processes behind natural hazards.** Assessed by exam.	***Independent study:*** Independent work for summative coursework	Considering societal impacts of mitigation strategies and perceptions of hazard risk, including in popular media. Assessed in summative coursework.		***Statistics:*** Analysis of data to examine flooding risk. Assessed insummative report.	***Written:*** Writing a technial report		
Stage 3	Land Use Change and Management	Progress towards PLO	Develops knowledge, understanding and awareness	Practice in finding and using sources	Develops awareness of the importance of interdisciplinarity		Develops data handling and analysis skills	Devlops skills in written comunication	Develops awareness of environmental problems and their solutions, and provides experience in designing sustainable solutions	Develops team-working skills
		By working on (and if applicable, assessed through)	Independent background research and field observation on **patterns and process of forests and agricultural settings and in preparation of a summatively assessed Landuse Management Plan**.	***Independent study:*** Independent background research and field observation on pattern and process of temperate ecosystems. Assessed by summative landuse management plan.	Bringing together a range of information from different fields (ecology, management, geographical sciences) in designing a summative Landuse Management Plan		***Statistics:*** Analysis of collected experimental data	***Written:*** Preparation of a summative scientific report assessment	Designing a summative Land Use Management Plan	***Groupwork:*** Working in large groups to carry out field-based practicals. Also small team work within role play seminars
Stage 3	Environmental Politics	Progress towards PLO	Develops knowledge, understanding and awareness	Practice in finding and using sources	Develops awareness of the importance of interdisciplinarity			Develops skills in oral and written comunication	Develops awareness of environmental problems and their solutions	Develops team-working skills

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		By working on (and if applicable, assessed through)	Covering literatures from **green political theory, environmental policy and environmental politics.** Assessed by essay.	***Independent study an in-class discussions:*** Independent work for seminar preparation, discussion and essay. Students work on understanding and dissecting a range of texts for seminars and within assessed essay.	Reviewing and enagaging with literatures from green political theory, environmental policy and environmental politics for seminars and in essays.			***Oral:*** Presenting findings from readings to small group within seminars and to whole larger seminar group. ***Written:*** Effectively communciating arguments in writing via assessed essay.	Studying **green political theory, environmental policy and environmental politics**. Assessed by essay.	***Groupwork:*** Enagaging in small group work on a weekly basis in seminars.	**Optional modules** contribu
