Programme Specification

BSc Environmental Engineering (NUIST-UoR Academy) NUIST-based (full-time)

For students entering Part 0 in September 2024

This document sets out key information about your Programme and forms part of your Terms and Conditions with the University of Reading.

Awarding Institution	University of Reading
Teaching Institution	University of Reading
Length of Programme	4 years
Length of Programme with placement/year abroad	BSc Environmental Engineering (NUIST-UoR Academy) UoR-based (full-time) - 4 years (internal transfer only)
Accreditation	N/A
QAA Subject Benchmarking Group	Earth Sciences, Environmental Sciences and Environmental Studies (ES3)

Programme information and content
This programme aims to provide you with a sound scientific foundation in the processes that operate in the natural environment, and that are required for modern environmental engineering and management. It also aims to provide you with the scientific and transferable skills that are relevant to environmental engineering in a global context. Students graduating from this programme will have the necessary theoretical and practical skills to become independent, critical environmental engineers. The programme includes a foundation year (Part 0) which enables students to progress on to the undergraduate programme in Environmental Engineering within the NUIST-University of Reading Academy. On completion of Part 0, you will have the general academic language and study skills required to begin your degree studies through Part 1, Part 2 and Part 3. The programme is available to students studying at NUIST-Reading Academy, who may transfer to UoR for Part 3 for part of their degree.

Foundation year:	Part 0 helps you develop the academic language and study skills you will need for your university degree programme. This year provides opportunities to: 1. understand and engage with the expectations of UK academic culture; 2. attain the academic reading, writing, listening, and speaking skills needed to undertake university study in English;

	3. understand and apply basic academic study skills, including the selection, evaluation, and use of information sources; 4. develop as independent learners. Studied at NUIST.
Part 1:	Part 1 introduces you to the discipline of Environmental Engineering, with an emphasis on building confidence in the related subjects of Chemistry, Biology and Mathematics, and developing skills in laboratory techniques, data management, oral presentation and teamwork. Studied at NUIST
Part 2:	Part 2 provides you with opportunities to develop your knowledge and skills further, with particular emphasis on understanding the application of environmental processes and management tools in ecosystem protection and sustainable development. Studied at NUIST
Part 3:	Part 3 gives you the opportunity to focus your study through a range of specialist subject modules from which a choice is made, and conduct an original, independent research project. Studied at UoR or NUIST

Programme Learning Outcomes - BSc Environmental Engineering (NUIST-UoR Academy) NUIST-based (full-time)

During the course of the Programme, you will have the opportunity to develop a range of skills, knowledge and attributes (known as learning outcomes) For this programme, these are:

	Learning outcomes
1	Demonstrate knowledge and understanding of key processes operating in the Earth System, including the lithosphere, hydrosphere, atmosphere and biosphere
2	Convey the importance of temporal and spatial scales for comprehending natural and anthropogenic impacts on the environment and ecosystems
3	Use academic literature to support critical discussions of pertinent environmental and sustainable development issues
4	Plan and conduct inclusive fieldwork and laboratory investigations competently, ethically, and safely.
5	Critically interpret and evaluate environmental information within the context of academic literature and other sources of information

6	Apply contemporary numerical techniques, computer simulations and information systems to visualise, interrogate, and analyse environmental data
7	Plan, conduct, and report the outcome of an independent scientific investigation
8	Communicate effectively in English with a variety of audiences using a range of formats and media
9	Work effectively within a multidisciplinary and multicultural team, demonstrating behaviours that support equality, diversity, and inclusion
10	Apply decision support tools, scientific concepts, techniques and expertise to devise long term sustainable solutions to environmental problems

You will be expected to engage in learning activities to achieve these Programme learning outcomes. Assessment of your modules will reflect these learning outcomes and test how far you have met the requirements for your degree.

To pass the Programme, you will be required to meet the progression or accreditation and award criteria set out below.

Module information

Each part comprises 120 credits, allocated across a range of compulsory and optional modules as shown below. Compulsory modules are listed.

Foundation modules:

Module	Name	Credits	Level
IF0NU1	English for Academic Purposes 1	60	0
IF0NU2	English for Academic Purposes 2	40	0
IF0NUP	English for Academic Purposes Project	20	0

Part 1 Modules:

Module	Name	Credits	Level
GV1A3NU	Chemistry of the Earth & Environment	20	4
GV1EENU	Environmental Engineering Microbiology	20	4
GV1EMNU	Environmental Monitoring	20	4
GV1ESNU	Environmental Science: Issues and Techniques	20	4
GV1SENU	Soil and Earth Surface Dynamics	20	4
IL1EENU	English for Environmental Engineers	20	4

Part 2 Modules:

Module	Name	Credits	Level
GV2EDNU	Analysing Environmental Data and Information Systems	20	5
GV2EEENU	Ecological Engineering of the Environment	20	5
GV2ENNU	Environmental Engineering: Principles and Practice	20	5
GV2EPMNU	Environmental Planning and Management	20	5
GV2FCANU	Geography & Environmental Science Field Class	20	5

GV2WPNU	Water Pollution Control Engineering	20	5

If you take a year-long placement or study abroad, Part 3 as described below may be subject to variation.

Part 3 Modules:

Module	Name	Credits	Level
GV3AECNU	Air Pollution: Effects and Control	20	6
GV3CLCNU	Climate Change	20	6
GV3GEDNU	Dissertation	40	6
GV3POLNU	Environmental Pollution	20	6
GV3RSPNU	Research Skills and Project Management	20	6

Part 3 modules at UoR

For those students based at UoR (UFENVENGJX) the following modules are **compulsory:**

Module	Name	Credits	Level
GV3GED	Geography & Environmental Science Dissertation	40	6
GV3RSP	Research Skills and Project Management	20	6

Students must select a further 60 credits from a list of optional modules provided by the School of Archaeology, Geography and Environmental Science.

Placement opportunities

N/A

Optional modules:

The optional modules available can vary from year to year. An indicative list of the range of optional modules for your programme can be found online in the Course Catalogue. Details of optional modules for each part, including any additional costs associated with the optional modules, will be made available to you prior to the beginning of the Part in which they are to be taken and you will be given an opportunity to express interest in the optional modules that you would like to take. Entry to optional modules will be at the discretion of the University and subject to availability and may be subject to pre-requisites, such as completion of another module. Although the University tries to ensure you are able to take the optional modules in which you have expressed interest this cannot be guaranteed.

Teaching and learning delivery:

In Part 0 you will be taught through classes, using a communicative approach to language learning, with an emphasis on meaning, task completion, interaction and feedback. You will also have a number of tutorials and carry out supervised project work. Modules in Part 0 are taught by Academy staff in NUIST.

Inclusive experiential learning is at the heart of the teaching and learning in Environmental Engineering. A strong emphasis is placed on developing Laboratory, Fieldwork, Data Science, and Teamwork skills. As an Environmental Engineering student, you will develop these skills during scheduled teaching and learning activities such as interactive lectures, laboratory practical classes, computer practical classes, field classes and external visits. The skills will be further strengthened through self-scheduled teaching and learning activities and guided independent study to support group projects and independent research.

You will typically acquire knowledge of key environmental processes through pre-class reading and viewing pre-recorded screencasts so that you can apply this knowledge within interactive lectures or practical sessions. You will then consolidate this knowledge and strengthen your understanding of contemporary environmental issues through further guided independent study, including engagement with academic literature.

You will learn transferable skills for study and continuing professional development through practical exercises and peer support. Employability skills are built and embedded throughout the programme through engagement with employers, activities that reflect the tasks undertaken by professionals.

You will develop your fieldwork, laboratory, and data science skills through dedicated field-, laboratory- and computer-based practical sessions. You will collect, process, analyse, and interpret environmental data within the context of pertinent environmental and sustainable development issues. As a student of Environmental Engineering, you will learn how to conduct scientific investigations and environmental assessments competently, ethically, and safely by first following and then later creating decision-support tools, laboratory protocols, research ethics submissions, and risk assessments.

You will undertake projects to address key environmental challenges first as a member of a group, supported by staff, but with increasing degrees of independence as you progress through the programme. You will receive training on how to support equality, diversity, and inclusion while working in multidisciplinary and multicultural teams alongside subject specific disciplinary skills. On completion of Part 0, you will have the general academic language and study skills required to begin your Part 1. The research and enquiry skills you acquire by participating in team projects during Part 1 and Part 2 will prepare you to undertake an independent research project, supervised by a member of staff, in the final year. Both group work and independent research projects are supported by meetings with staff to support planning and provide verbal feedback.

All modules will require significant guided independent learning.

Elements of your programme will be delivered via digital technology.

The scheduled teaching and learning activity hours and amount of technology enhanced learning activity for your programme will depend upon your module combination. In addition, you will undertake some self-scheduled teaching and learning activities, designed by and/or involving staff, which give some flexibility for you to choose when to complete them. You will also be expected to undertake guided independent study. Information about module study hours including contact hours and the amount of independent study which a student is normally expected to undertake for a module is indicated in the relevant module description.

Modules in NUIST are taught by a combination of Academy staff and visiting staff from the University of Reading.

Accreditation details

N/A

Assessment

A diverse range of assignment types are adopted to assess the progress and attainment of BSc Environmental Engineering students. These assignment types include the assessment of knowledge by answering both closed and open-ended questions, the authoring of laboratory and field reports, undertaking practical exercises and keeping field and laboratory notebooks, and communicating the findings of scientific investigations to a range of specialist and lay audiences using a range of multimedia. Further information is contained in the individual module descriptions.

Progression

Foundation Year

In order to complete the foundation year (Part 0) successfully, a student is required to:

(i) Obtain at least 40% both for IF0NUI and IF0NUP

(ii) Obtain a pass mark in IF0NU2 as specified in the module description.

Students who obtain 6.0, with no element (Speaking, Listening, Reading and Writing) below 5.5 in the IF0NU2 final test will be deemed to have met the English language progression requirements to Part 2 and will be exempted from the mandatory Part 1 English for Academic Purposes module IF1NU3A.

Successful completion of these modules will lead to progression to Year 1 of the student's chosen degree programme.

The achievement of a threshold performance at Foundation Year qualifies a student for a Certificate of Completion if they leave the University before completing the subsequent Part.

Part 1

To achieve a threshold performance at Part 1, a student will normally be required to:
(i) Obtain an overall average of 40% over 120 credits taken in Part 1;
(ii) Obtain a mark of at least 40% in individual modules amounting to not less than 80 credits taken in Part 1; and
(iii) Obtain marks of at least 30% in modules amounting to 120 credits.

In order to progress from Part 1 to Part 2, a student must achieve a threshold performance; and

(iv) obtain 6.0 in TEEP on IF1NU3A (where taken), with no element (Speaking, Listening, Reading and Writing) below 5.5.

The achievement of a threshold performance at Part 1 qualifies a student for a Certificate of Higher Education if they leave the University before completing the subsequent Part.

Transferring from a Joint Honours to a Single Honours programme

Students are able to transfer from a Joint Honours to a Single Honours programme in one of their joint subject areas at the end of Part 1, subject to fulfilling the Part 1 University Threshold Standard, achieving marks of at least 40% in at least 40 credits of modules in the subject to which they wish to transfer, and fulfilling any programme-specific progression rules for the Part 1 Single Honours Programme to which they wish to transfer.

Students who transfer from a Joint Honours to a Single Honours programme may not have taken all of the Part 1 modules listed in the Single Honours Programme Specification. The modules which they have taken will be shown on their Diploma Supplement.

Part 2

To achieve a threshold performance at Part 2, a student shall normally be required to:

(i) Obtain a weighted average of 40% over 120 credits taken in Part 2; and
(ii) Obtain marks of at least 40% in individual modules amounting to at least 80 credits taken in Part 2; and
(iii) Obtain marks of at least 30% in individual modules amounting to at least 120 credits, except that a mark below 30% may be condoned in no more than 20 credits of modules owned by the Department of Mathematics and Statistics.

In order to progress from Part 2 to Part 3, a student must achieve a threshold performance.

The achievement of a threshold performance at Part 2 qualifies a student for a Diploma of Higher Education if they leave the University before completing the subsequent Part.

Classification

Bachelors' degrees
The University's honours classification scheme is based on the following:

Mark Interpretation
70% - 100% First class
60% - 69% Upper Second class
50% - 59% Lower Second class
40% - 49% Third class
35% - 39% Below Honours Standard
0% - 34% Fail

The weighting of the Parts/Years in the calculation of the degree classification is:
Part 2: one-third
Part 3: two-thirds

The classification method is given in detail in: <u>Bachelor's (for cohorts entering in 2022/23 and onwards)</u> (see, in particular, section 17.5 and, for variants on the main method, Annex 1)

Dual Awards

Successful completion of the Programme will lead to the award of degrees by both the University of Reading and Nanjing University of Information Science and Technology.

Additional costs of the programme

During your programme of study you will incur some additional costs.

At NUIST: There will be some additional costs if you require printing facilities at NUIST, there may also be additional costs if your programme involves a field trip whilst at NUIST. Details of costs can be found at the NUIST help desk.

At UoR: Printing and photocopying facilities are available on campus at a cost per A4 page of £0.05 (black and white) and £0.30 (colour). Essential costs in this area will be low as most coursework will be submitted electronically.

You will be required to make a minor contribution to costs for your food and board at a compulsory Part 2 field class. Bursaries and other forms of financial support are available for students in financial difficulty. You will be expected to be equipped with suitable outdoor clothing and footwear for field classes. There are no compulsory textbooks and the library has an extensive collection to support your curriculum, including textbooks and electronic resources. Reading lists and module specific costs are listed on the individual module descriptions. Discounted second hand copies may be available.

Costs are indicative and may vary according to optional modules chosen and are subject to inflation and other price fluctuations. Estimates were calculated in 2023.

For further information about your Programme please refer to the Programme Handbook and the relevant module descriptions, which are available at http://www.reading.ac.uk/module/. The Programme Handbook and the relevant module descriptions do not form part of your Terms and Conditions with the University of Reading.

BSc Environmental Engineering (NUIST-UoR Academy) NUIST-based (full-time) for students entering Part 1 in session 2024/25
21 August 2023