

APPROVED**Bachelor of Science (Honours) in Environmental Bioscience (2020)**
Health and Science

Programme Short Title	B.Sc. (Hons) Environmental Bioscience				
Programme Code	DK_NLENV_8	Mode of Delivery	Full Time On Campus	No. of Semesters	8
Semesters Per Stage	2	NFQ Level	8	Programme Credits	240
Language of Instruction	English				
Field of Study	0510 - Science				
Educational Aim of Programme	The aim of this programme is to produce biology graduates with knowledge, skills and competencies in the key areas of ecology, environmental biotechnology, environmental monitoring and risk assessment. Graduates of this programme will be able to make a significant contribution to the resolution of environmental problems and the implementation of sustainable solutions.				
External Code	Code:				
Programme Extra Information	Special Regulation: For modules with Practical and/or Final Examination components, a minimum mark of 30% must be achieved in each of those components.				

Programme Learning Outcomes (PLOs)

On successful completion of this programme the learner should be able to :

#	Description
PLO1	Detailed knowledge and understanding of the essential facts, major concepts, principles and theories associated with the sub-field of Environmental Bioscience
PLO2	Detailed knowledge of the terminology, nomenclature and/or classification systems appropriate to the subject area
PLO3	Detailed knowledge of the theories, paradigms, defining concepts and underlying principles of the subject area
PLO4	Detailed knowledge of advanced methods for acquiring, interpreting and analysing subject-specific information with a critical understanding of the appropriate contexts for their use through the study of texts and original papers.
PLO5	Detailed knowledge of the identification, definition and resolution of complex problems
PLO6	Detailed knowledge of the relevant legal and regulatory frameworks
PLO7	Detailed knowledge of current issues of concern to society and an understanding of the philosophical and ethical issues involved
PLO8	Detailed knowledge of some aspects of the defining elements of the subject area as a result of in-depth individual study or research
PLO9	Detailed knowledge of the current knowledge and development of the subject area (including current limits of theoretical and applied knowledge).
PLO10	Ability to solve complex technical problems
PLO11	Ability to employ advanced data analysing, synthesising and summarising skills in a scientific work setting
PLO12	Ability to source, interpret and apply appropriate and referenced literature and other information sources
PLO13	Ability to work independently within defined time and resource boundaries
PLO14	Ability to effectively and safely operate a range of complex laboratory and other relevant equipment
PLO15	Ability to apply advanced numerical and statistical analysis skills
PLO16	Ability to maintain detailed records of activities and to communicate scientific information in a variety of forms to specialist and non-specialist audiences
PLO17	Ability to design a relevant programme of investigation
PLO18	Ability to think independently and make effective decisions
PLO19	Ability to recognise and respect the views of others
PLO20	Ability to contribute fully to the day-to-day operations of a scientific industry or other scientific work setting
PLO21	Ability to make decisions in relation to a complex or highly regulated environment
PLO22	Ability to formulate and test hypotheses
PLO23	Appreciation of limits of knowledge in a scientific area and ability to respond appropriately
PLO24	Ability to use advanced scientific skills to critically interpret existing knowledge and apply in new situations
PLO25	Ability to make and report appropriate decisions and take responsibility for such decisions
PLO26	Ability to behave ethically in a range of work settings
PLO27	Ability to present and engage in debate relating to general scientific issues
PLO28	Ability to plan for effective project implementation and manage the organisation of tasks, people and resources

PLO29	Ability to participate constructively in a complex team environment within a scientific field
PLO30	Ability to reflect on own practices, accept responsibility for the work of self and others and develop and train staff to meet changing technical needs
PLO31	Ability to identify knowledge gaps and source and undertake self-learning to fill the gaps
PLO32	Awareness of the need for enhanced technical competencies and continuing professional development
PLO33	Ability to evince a commitment to continuing education and lifelong learning
PLO34	Capacity for social responsibility and ability to contribute to the development of the role of scientist in society
PLO35	Capacity to draw complex information together and present in an understandable format
PLO36	Capacity to acknowledge the current issues of concern to society and an understanding of the philosophical and ethical issues involved
PLO37	Questioning attitude to the assumptions, both overt and covert, underlying modern science

Semester Schedules

Stage 1 / Semester 1

Mandatory	
Module Code	Title
BIOL S8Z01	Biology
CHEM S7Z04	Fundamental Chemistry
HLSTS8Z01	Health and Safety and Academic Skills
MATH S7Z01	Mathematics 1
PHYS S7Z03	Physics Through PBL 1

Stage 1 / Semester 2

Mandatory	
Module Code	Title
CHEM S7Z05	Chemistry
MATH S7Z02	Mathematics 2
PHYS S7Z04	Physics Through PBL 2

Stage 2 / Semester 1

Mandatory	
Module Code	Title
INST S7Z02	Analytical Science
CHEM S8Z01	Biochemistry

CHEM S7003	Introduction to Organic Chemistry
BIOL S8Z03	Microbiology 1
Stage 2 / Semester 2	
Mandatory	
Module Code	Title
ENVR S8Z01	Emerging Issues of Environmental Concern
BIOL S8Z02	Molecular Biology
PHAR S8Z01	Pharmaceutical and Biopharmaceutical Science
DATA S7Z01	Statistics and Data Analysis
Stage 3 / Semester 1	
Mandatory	
Module Code	Title
ENVR S8016	Aquatic Sciences
SCIA S8015	Environmental Chemistry
ENVR S8011	Environmental Communication and Critique
SCIA S8016	Microbial Ecology
SCIA S8012	Plant Science
Stage 3 / Semester 2	
Mandatory	
Module Code	Title
ENVR S8017	Environmental Biotechnology
SCIA S8014	Habitat and Wildlife Ecology
PROJ S8009	Project Planning and Design
Elective	
Module Code	Title
QUAL S7Z01	Quality Management

PLCE S8006	Work Placement
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Stage 4 / Semester 1

Mandatory	
Module Code	Title
ENVR S8013	Ecotoxicology
DATA S8002	Data Handling and Modelling
ENVR S8018	Environmental Bioscience Project 1
PROJ S8008	Ethical Project Design and Statistics.
SCIA S8002	Soil and Water Management

Stage 4 / Semester 2

Mandatory	
Module Code	Title
ENVR S8020	Advanced Environmental Biotechnology
HLST S8001	Conservation Genetics
ENVR S8021	Environmental Bioscience Project 2
ENVR S8019	Environmental Monitoring and GIS
ENVR S8009	Environmental Risk Assessment