

Full Title:	Environmental Biosciences Project
Language of Instruction:	English
Module Code:	ENVR S8014
Credits:	20
Valid From:	Semester 1 - 2014/15 (September 2014)
Module Delivered in	1 programme(s)
Module Description:	This module will provide an opportunity for students to integrate the knowledge and practical skills they have acquired to date and develop their skills through the research, planning, implementation, interpretation and presentation of a defined body of scientific work. This module should foster independence, confidence and a sense of personal responsibility for the work executed.
Learning Outcomes:	
<i>On successful completion of this module the learner should be able to</i>	
<ol style="list-style-type: none"> 1. Describe and critically interpret the scientific knowledge base in a defined subject area and apply it to a new area of scientific study. 2. Design a programme of investigation and present a comprehensive and viable research plan. 3. Be able to present and disseminate scientific literature at a professional level that is suitable for both the scientific community and other key stakeholders. 4. Source, develop and validate laboratory methods and protocols 5. Apply knowledge and practical skills in the research of a specific aspect of biological environmental assessment or management. 6. Solve complex technical problems associated with the execution of the project. 7. Maintain detailed records of project-based activities. 8. Present the results of the research in high-quality oral and written formats. 9. Employ advanced data analysis and synthesis techniques within the scope of the project. 	

Module Content & Assessment

Indicative Content
<p>Semester 1 Each student will be assigned a supervisor who will be responsible for overseeing the research project for the duration of the academic year. • The supervisor will direct and oversee the project during both semesters. Project titles will be agreed by mutual consent after discussion. • Each student will collect, collate, review and present information from the literature on the defined topic of their project. They will also be provided with supervised laboratory and fieldwork sessions of 4 hours per week in semester 1. These sessions will be utilised for the development and validation of methods to be used in the course of the research project. Students will meet with their project supervisor for approximately one hour per week to discuss the planning, experimental design and progress of the work. • Refresher library tutorials will be provided to improve information retrieval skills and ensure compliance with the Institute Academic Integrity Policy.</p>
<p>Semester 2 Students will be provided with 8 hours per week of supervised laboratory time for the execution of their project. Students will meet with their project supervisor for approximately one hour per week to discuss the progress of the work, data analysis and preparation of the thesis and oral presentation. • Students must maintain a laboratory notebook in which they should record thoughts, plans, methods, raw data, calculations and other details of practical activities during the course of the project. During weekly meetings, the project supervisor may add remarks or suggestions to the laboratory notebook. Students must submit a typed, bound, project thesis of words using an approved format and perform and defend a 10-minute oral presentation of their work.</p>
<p>Sample projects Investigating heavy metal accumulation in <i>Mytilus edulis</i>; An investigation into groundwater quality in domestic wells in karst and shale regions; a biological study of subterranean fauna distribution; Biological recovery of contaminated waters: an in house wetlands trial; A study of ecosystem development in Integrated Constructed Wetlands in the treatment of urban and domestic wastewater discharges; Metal accumulation in macroinvertebrates in the Avoca Mining region; Microbiological analysis (<i>E. coli</i>, Total Coliforms and <i>Cryptosporidium</i>) of drinking water supplies. Metal accumulation in bryophytes in contaminated mine sites; Lichens as an indicator of air quality in urban areas; The impact of field margins on the biodiversity of streams.</p>

Assessment Breakdown	%
Course Work	100.00%

Full Time

Course Work							
Assessment Type	Assessment Description	Outcome addressed	% of total	Marks Out Of	Pass Marks	Assessment Date	Duration
Written Report	Literature review on chosen topic. The student will be required to submit a comprehensive referenced literature review on their selected project topic. The report will be assessed by the supervisor and one other member of the programme team.	1	15.00	0	0	Week 8	0
Written Report	Plan of work: the student will submit a work plan, including objectives and a timeline as a Gantt chart, for their research project. Where feasible projects which include links to on-going funded research projects, to industry and to local stakeholders, including links to communities will be encouraged. The plan should include reference to the methods to be employed in the practical component. The report will be assessed by the supervisor and one other member of the programme team.	2,4	10.00	0	0	Sem 1 End	0
Presentation	The student will be required to give a presentation at the end of semester 1 to the supervisory team outlining the results of their literature review, and their project plan.	1,2,4	5.00	0	0	Sem 1 End	0
Presentation	The student will present the project finding to the entire supervisory team. The external examiner will be invited.	1,8,9	10.00	0	0	Sem 2 End	0
Performance Evaluation	The supervisor will evaluate the students performance during the course of the project and will issue a report. This will be based on criteria such as attendance, diligence, motivation, and initiative, as well as field and laboratory skills, health and safety, and problem solving skills. The students field and laboratory notes will be assessed as part of the supervisors report.	2,4,5,6,7,9	10.00	0	0	Sem 2 End	0
Written Report	Project thesis: The student will be required to submit a comprehensive thesis on their methodology, results data analysis and conclusions using an approved format. The report will be assessed by the supervisor and one other member of the programme team.	1,2,4,5,6,7,8,9	50.00	0	0	Sem 2 End	0

No Project

No Practical

No End of Module Formal Examination

Reassessment Requirement

Reattendance
The assessment of this module is inextricably linked to the delivery. Therefore reassessment on this module will require the student to reattend (i.e. retake) the module in its entirety.

Reassessment Description
 Resubmit element(s) OR re-attend.

DKIT reserves the right to alter the nature and timings of assessment

Module Workload & Resources

Workload: Full Time

Workload Type	Workload Description	Hours	Frequency	Average Weekly Learner Workload
Practical	Laboratory and Field Work	6.00	Every Week	6.00
Lecturer Supervised Learning	Meeting with supervisor	1.00	Every Week	1.00
Directed Reading	Literature Review and Assignments	8.00	Every Week	8.00
Total Weekly Learner Workload				15.00
Total Weekly Contact Hours				7.00

This course has no Part Time workload.

Resources

Recommended Book Resources

Ruxton, G.D. and Colegrave, N. 2006, *Experimental Design for the Life Sciences*, 2nd Ed., Oxford Press

Colin Robson 2007, *How to do a Research Project*, Wiley-Blackwell [ISBN: 978-1-4051-14]

Supplementary Book Resources

Judith Bell 2005, *Doing your Research Project: A guide for first-time researchers in education, health and social science*, 4th Ed., Open University Press Maidenhead, UK [ISBN: 9780335215041]

This module does not have any article/paper resources

Other Resources

Website: Useful weblinks related to How to do a Research Project (Colin Robson), Blackwell
<http://www.blackwellpublishing.com/researchproject/weblinks.asp>

Module Delivered in

Programme Code	Programme	Semester	Delivery
DK_SENVI_8	Bachelor of Science (Honours) in Environmental Bioscience	7	Mandatory