

Module Descriptor Form

1	Awarding Body	Askham Bryan College
2	Lead Subject Area	Cross College
3	Module title	Principles of Laboratory Work.
4	Module Code	XC0105
5	Module level	Y0
6	Module credits	20
7	Date Module to Commence	September 2022
8	Programmes on which module is available	Extended FdSc Animal Science and Management (core) Extended FdSc Management of Animal Collections with Conservation (core) Extended FdSc Management of Aquatics and Conservation of Oceans (core) Extended FdSc Wildlife and Environmental Conservation (core) Extended FdSc Applied Sustainable Land Management (core) Extended FdSc Canine and Feline Behaviour and Training (core) Extended FdSc Precision Livestock Farming (core) Extended FdSc Agriculture (core) Extended FdSc Equine Science and Management (core)
9	Aims of the Module	This module is designed to develop skills relating to methodological techniques used in the laboratory. This module will also enable the students to collect data and then analyse and present the data in the appropriate manner.
10	Rationale for Module	Students will develop technical scientific laboratory skills along with team working skills through practical sessions. They will conduct laboratory practical work that will furnish them with skills which are transferable to a wide range of careers in the animal industry
11	Module description	Students will practice skills in sampling and recording data and identification and preservation of specimens under standard laboratory practice. The latter will enable students to deal (primarily) with the analysis of preserved specimens available in the science labs.
12	Semester	2
13	Learning Outcomes	LO1 Complete to an appropriate standard laboratory risk assessment for a range of scenarios
		LO2 Describe a range of basic scientific skills.
		LO3 Perform simple experiments according to the scientific method.

		LO4 Plan, execute and analyse the results of an experiment.
14	Pre-requisite Modules	None
15	Co-requisite Modules	None
16	Banned Combinations	None
17	Is Module Compensatable	Yes
18	Indicative Content	LO1: General lab safety, awareness of potential hazards when working in a lab, general waste practices, sterile technique, autoclaving. Understanding of Health and Safety procedures and how to produce an appropriate risk assessment. LO2: General practical scientific skills such as understanding of SI units and their use, units of mass, length, area, volume of biological specimens, molarity, concentrations and dilutions. Students will learn the importance of accuracy and precision in a laboratory setting. Understanding of chemical and biological procedures of preparing/preserving specimens. Students will also use the microscopes to analyse a range of specimens. LO's 3 and 4: Students will carry out a variety of different practical's developing a range of scientific skills such as identification of plant and animal cells, ecto and endo-parasites using a light microscope with drawings and diagrams. Students will also perform determination of energy and food test analysis (fat, protein and carbohydrate), osmosis studies, pH analysis, water and soil testing, titration and mitosis. Following practical's students will learn to write well structured, coherent, lab reports by keeping accurate records of their procedure during the practical session. As part of the report students will cite literature, appropriately, and prepare reference lists. As part of the lab report students will solve numerical problems related to biological processes. Identification of plant and animal cells, ecto and endo-parasites and making observation using light microscope with drawings and diagrams. Determination of energy and food test analysis (fat, protein and carbohydrate). Osmosis, pH analysis, water and soil testing, titration and mitosis.

19	Inclusivity, access and student support	We are committed to ensuring that our programmes and modules are inclusive of all students including: international, part-time, mature, those from different socio-economic backgrounds (class) and those with protected characteristics according to the Equality Act 2010 (age, disability, gender reassignment, marriage/civil partnership, race, religion or belief, sex, sexual orientation). Powerpoint presentations will be provided online prior to the lectures and all will follow accessibility regulations. Students requiring assistance in practical sessions will be risk assessed and allowances such as a 'buddy system' considered where appropriate. Allergies and phobias will be considered in practical sessions and students allowed to complete worksheets using digital resources where appropriate. An alternative assessment will be available for all students with a DSA, in line with recommendations in their individual needs assessment.
20	Link to the Digital Vision	The VLE and Teams platforms will be utilised for dissemination of lecture resources. Where possible, planet e-stream and VAR suite will be utilised.
21	Total Contact Hours	60
	Lecture	18
	Seminar	0
	Tutorial	10
	Project Supervision	0
	Demonstration	8
	Practical classes/workshops	24
	Fieldwork	0
	External visits	0
	Work based learning / Placements	0
	Guided independent study	140 hours
21	Learning and Teaching Strategy	Students will receive lectures to outline key themes, which will be backed up by regular 1:1 tutorials, particularly for support with developing their practical assessments. Weekly timetabled lectures and seminars in semester 2 will provide an outline of the key themes and weekly laboratory practicals will be undertaken to reinforce learning. Students will also be given directed study time under tutor's supervision/guidance to develop their understanding further. Additional resources/activities will be available on the VLE.

22	Virtual Learning Strategy	All module resources will be available on the VLE, as will links to further reading, videos etc. Students will be encouraged to actively participate in online discussion forums. Formative assessment will take place regularly using online tasks on the VLE. Worksheets, relevant literature, powerpoints and other media will be made available on the VLE for students to access outside of lectures.				
23	Opportunities for Formative Assessment	Regular verbal formative feedback will be given within lectures and during laboratory practicals. One-to-one tutorials will further provide the students with formative feedback.				
24	Method of Summative Assessment	Ass No.	Method	Weighting	LOs	Prog LOs
		1	2 risk assessments	25%	1	KU1, E5
		2	Laboratory book and approach to lab work	Pass/fail	2,3,4	KU1, CIT2, CIT4, PP2, PP3, E1, E2
		3	Laboratory report 1500 words	75%	2,3,4	KU1, CIT2, CIT3, CIT5 E3
25	Examination Period	No exam				
26	Method/s of reassessment	Written report during the reassessment window				
27	Maximum Class Size	24				
28.1	Essential Reading (Books)	Jones, A., Reed, R. and Weyers, J. 2016. <i>Practical Skills in Biology</i>. 6th ed. Essex: Pearson Education Limited. McGhee, M. 2013. <i>A Guide to Laboratory Investigations</i>. 6th ed. CRC press Bryan, M., Finola, L., Marie, A., Ann, C. and Dores, M. 2013. <i>Clinical Veterinary Microbiology</i>. Elsevier Health. Scott, D. M., Melissa, K and Chengappa, A. A. 2013. <i>Veterinary Microbiology</i>. Wiley-Blackwell Publication				
28.2	Recommended Reading (Books)	Prichard, J., 2003. <i>Practical Laboratory Skills Training Guides</i>. Cambridge. LGC Ruxton, G.D and Colegrave, N. 2011. <i>Experimental design for the Life Sciences</i>. 3rd Ed. Oxford: Oxford University Press				

		Carter, G. and Wise, D. 2004. <i>Essentials of Veterinary Bacteriology and Mycology</i> . 6th ed. Oxford: Blackwell Publishing
28.3	Essential Reading (Journals)	Lab Medicine Laboratory Investigation
28.4	Recommended Reading (Journals)	Practical Laboratory Medicine Journal of Clinical Laboratory Analysis
28.5	Websites/ Online/ Government Resources etc	www.hse.gov.uk
29	Date Written/ Revised	30/01/2022
30	Module Leader Name	
31	Writing Team Names	Rana Parween, Harriet Beal and Isobel Bannister