



## MODULE SPECIFICATION

Part 1: Information			
Module Title	Research Skills		
Module Code	USSKAP-30-2	Level	Level 5
For implementation from	2020-21		
UWE Credit Rating	30	ECTS Credit Rating	15
Faculty	Faculty of Health & Applied Sciences	Field	Applied Sciences
Department	HAS Dept of Applied Sciences		
Module type:	Standard		
Pre-requisites	Skills for Biosciences 2020-21		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p><b>Overview:</b> Pre-requisite: Students must have taken USSKA6-30-1: Skills for Biosciences</p> <p><b>Educational Aims:</b> This module will introduce students to the process of devising, carrying-out and disseminating their own research. The skills students will practice within this module will be instrumental for their final year research project.</p> <p><b>Outline Syllabus:</b> Students will learn:</p> <p>How to design appropriate experimental procedures to carry out work in a biological laboratory; The design of experiments will be discussed, including the choosing of methodologies, the use of controls, how to prepare materials and how to collect data.</p> <p>The expectation of the output of experiments to show how the proposed use of statistical analysis should be used to inform the structure of the experimental design.</p> <p>Discussed issues of research governance, including health and safety, ethics, animal welfare and use of genetically modified organisms.</p> <p>How to determine which statistical analysis is needed to interpret the data and carry out appropriate analysis correctly, including explanation of different distribution patterns and the types of data set that may be generated.</p>

## STUDENT AND ACADEMIC SERVICES

How to perform a range of techniques over the timetabled practical sessions to obtain a data-set for analysis.

**Teaching and Learning Methods:** Following on from the outline syllabus, will be discussions on how to choose the most appropriate type of statistical analysis for an experiment. A variety of statistical analysis methods will be covered, including t-test and two-way and multi-way ANOVA. Practical classes will enable students to set up experiments as discussed in previous session, collect appropriate data, analyses data appropriately and present the study to a wider audience.

How to disseminate the outcome of studies in a variety of ways to a range of audiences: dissemination in the form of reports (for example a research proposal), posters, press releases, will be discussed and student will be given the opportunity to plan such dissemination tools.

### Part 3: Assessment

The assessment for this module is designed to test the breadth and depth of students' knowledge, as well as their ability to analyse, synthesize and summarise information critically, including published research and data from the 'grey' literature. Component A consists of two elements. The first element is an online exam which provides students with the opportunity to demonstrate their knowledge and understanding of data handling and statistical assessment. The second element is an oral defence of a scientific poster based on data gathered during the practical sessions on the module. This assessment allows students to demonstrate both their ability to research, prioritise information and produced a structured, evidence based answer.

This assessment links directly to requests from employers as they require graduates proficient at researching and scientific writing under pressure. Data is gathered the poster is designed as a team, however the majority of the marks are from individual defence of the poster and submission of an abstract written independently.

The written assignments provides the opportunity for the student to complete an in-depth analysis of selected topic from the module syllabus by critically reviewing published research as well as presenting their own data from the practical sessions.

Opportunities for formative assessment and feedback are built into the assignments and review of past exam papers. All work is marked in line with the Faculty Generic Assessment Criteria and conforms to the University policies for the setting, collection, marking and return of student work. Assessments are described in the module handbook that is supplied at the start of module.

First Sit Components	Final Assessment	Element weighting	Description
Examination (Online) - Component A		25 %	Online examination (24 hours)
Portfolio - Component A	✓	25 %	Poster, abstract and 10 minutes viva voce examination
Written Assignment - Component B		50 %	Research proposal (1500 words) cv and skills reflection
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Examination (Online) - Component A		25 %	Online examination (24 hours)
Portfolio - Component A	✓	25 %	Poster, Abstract and 10 minute Viva voce examination. Poster from previous attempt may be used if component B was passed at that opportunity.
Written Assignment - Component B		50 %	Research proposal (1500 words) cv and skills reflection

STUDENT AND ACADEMIC SERVICES

<b>Part 4: Teaching and Learning Methods</b>																	
Learning Outcomes	<p>On successful completion of this module students will achieve the following learning outcomes:</p> <table border="1"> <thead> <tr> <th style="text-align: left;"><b>Module Learning Outcomes</b></th> <th style="text-align: left;"><b>Reference</b></th> </tr> </thead> <tbody> <tr> <td>Design appropriate experimental procedures to carry out work in a biological laboratory and as field work</td> <td>MO1</td> </tr> <tr> <td>Discuss issues of research governance, including Health and Safety, Ethics, Animal Welfare and use of genetically modified organisms</td> <td>MO2</td> </tr> <tr> <td>Determine which statistical analysis is needed to interpret the data and carry out appropriate analysis correctly</td> <td>MO3</td> </tr> <tr> <td>Carry out laboratory and /or field procedures safely to gather a useable set of data</td> <td>MO4</td> </tr> <tr> <td>Disseminate the outcome of studies in a variety of ways to a range of audiences</td> <td>MO5</td> </tr> <tr> <td>Evaluate and critically discuss previously published research</td> <td>MO6</td> </tr> </tbody> </table>	<b>Module Learning Outcomes</b>	<b>Reference</b>	Design appropriate experimental procedures to carry out work in a biological laboratory and as field work	MO1	Discuss issues of research governance, including Health and Safety, Ethics, Animal Welfare and use of genetically modified organisms	MO2	Determine which statistical analysis is needed to interpret the data and carry out appropriate analysis correctly	MO3	Carry out laboratory and /or field procedures safely to gather a useable set of data	MO4	Disseminate the outcome of studies in a variety of ways to a range of audiences	MO5	Evaluate and critically discuss previously published research	MO6		
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Reading List	<p><i>The reading list for this module can be accessed via the following link:</i></p> <p><a href="https://uwe.rl.talis.com/modules/usskap-30-2.html">https://uwe.rl.talis.com/modules/usskap-30-2.html</a></p>																

<b>Part 5: Contributes Towards</b>
<p>This module contributes towards the following programmes of study:</p> <p>Biological Sciences {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2018-19</p> <p>Biological Sciences {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2018-19</p> <p>Biological Sciences {Foundation} [Sep][SW][Frenchay][6yrs] MSci 2018-19</p> <p>Biological Sciences {Foundation} [Sep][FT][Frenchay][5yrs] MSci 2018-19</p>