Module Descriptor

Title	Statistical Methods for Public Health		
Session	2024/25	**Status**	
Code	BIOL11023	**SCQF Level**	11
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Health and Life Sciences**		
Module Co-ordinator	Lynsay Matthews		

Summary of Module

The Statistical Methods for Public Health module will introduce fundamental concepts in biostatistics, including uncertainty, variation, estimation, frequency, probability and comparison to examine statistical issues in study design. It will introduce the most commonly used methods of analysis of data in order to interpret the health of populations at local, national and global level. The aim is also to give students a framework for critically reading published papers and give students experience of carrying out standard statistical analysis of small data sets using a computer.

Module Delivery Method	**On-Campus[1]** ☒	**Hybrid[2]** ☐	**Online[3]** ☐	**Work -Based Learning[4]** ☐
Campuses for Module Delivery	☐ Ayr ☐ Dumfries	☒ Lanarkshire ☐ London ☐ Paisley	☐ Online / Distance Learning ☐ Other (specify)	

Terms for Module Delivery	Term 1	☐	Term 2	☒	Term 3	☐
Long-thin Delivery over more than one Term	Term 1 – Term 2	☐	Term 2 – Term 3	☐	Term 3 – Term 1	☐

[1] Where contact hours are synchronous/ live and take place fully on campus. Campus-based learning is focused on providing an interactive learning experience supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus contact hours will be clearly articulated to students.

[2] The module includes a combination of synchronous/ live on-campus and online learning events. These will be supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus and online contact hours will be clearly articulated to students.

[3] Where all learning is solely delivered by web-based or internet-based technologies and the participants can engage in all learning activities through these means. All required contact hours will be clearly articulated to students.

[4] Learning activities where the main location for the learning experience is in the workplace. All required contact hours, whether online or on campus, will be clearly articulated to students

Learning Outcomes	
L1	Identify circumstances to use appropriate test or statistical modelling approach and interpret the results. Distinguish between population and sample and be able to calculate required sample size in the simplest situations.
L2	Summarise simple data sets using appropriate diagrammatic methods and appropriate summary statistics such as mean, median, standard deviation, quartiles, proportions, percentages.
L3	Utilise statistical analysis package to carry out simple analyses of data on a computer. Recognise the role of clinical trials and observational studies and be aware of the importance of randomisation, control groups, placebos, single and double blind.
L4	
L5	

Employability Skills and Personal Development Planning (PDP) Skills	
SCQF Headings	**During completion of this module, there will be an opportunity to achieve core skills in:**
Knowledge and Understanding (K and U)	**SCQF 11** Demonstrating basic critical understanding of sampling, application of statistical hypothesis, concept of experimental design and linear regression modelling as appropriate, to the solution of problems.
Practice: Applied Knowledge and Understanding	**SCQF 11** Using a range of standard techniques of decision making and statistical model building as well as the application of the hypothesis in research to solve standard statistical problems, as appropriate, and making valid interpretations of these.
Generic Cognitive skills	**SCQF 11** Critically review current literature of different statistical methods used in Public Health. Using a range of methods to analyse well-defined problems in relevant mathematical or statistical contexts.
Communication, ICT and Numeracy Skills	**SCQF 11** Using suitable software to obtain and present results to statistical problems, also to analyse and interpret numerical and graphical data. Present and communicate scientific knowledge through report writing, group-based discussion and oral presentations.
Autonomy, Accountability and Working with Others	**SCQF 11** Working autonomously and effectively with others to meet programme specific requirements within deadline to solve and produce short reports and presentations on statistical problems. Takes responsibility for learning and completion of assessments. Identify and address own learning needs in both current and new areas.

Prerequisites	**Module Code**	**Module Title**
	Other	
Co-requisites	**Module Code**	**Module Title**

Learning and Teaching

In line with current learning and teaching principles, a 20-credit module includes 200 learning hours, normally including a minimum of 36 contact hours and maximum of 48 contact hours.

This module will be delivered using a combination of lectures, workshops and practical instruction. Teaching activities will use a student focused, blended-approach. The aim of this module is to understand the fundamentals of statistical concepts required in public health. Students will gain confidence in model building and hypothetical decision making, as well as data interpretation using a basic analytical approach. Students will work in groups to critically appraise, analyse and interpret information on health and health determinants. Workshops will blend practical and theoretical elements of research design, methodology, analysis, interpretation and reporting. Students will engage in computer practical workshops which will instruct them on data coding using a statistical software package and analysis techniques.

Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	**Student Learning Hours** (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture / Core Content Delivery	24
Laboratory / Practical Demonstration / Workshop	12
Asynchronous Class Activity	6
Independent Study	158
Please select	
Please select	
TOTAL	200

Indicative Resources

The following materials form essential underpinning for the module content and ultimately for the learning outcomes:

"Introductory Statistics", Openstax (online resource)

SPSS software, available from UWS at start of module

(N.B. Although reading lists should include current publications, students are advised (particularly for material marked with an asterisk*) to wait until the start of session for confirmation of the most up-to-date material)

Attendance and Engagement Requirements

In line with the Student Attendance and Engagement Procedure, Students are academically engaged if they are regularly attending and participating in timetabled on-campus and online teaching sessions, asynchronous online learning activities, course-related learning resources, and complete assessments and submit these on time.

For the purposes of this module, academic engagement equates to the following:

Attendance at campus sessions

Engagement with module related resources on module Aula page

Engagement with self-directed study tasks Engagement with group work Timely submission of assessments

Equality and Diversity
The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: UWS Equality, Diversity and Human Rights Code.
(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)

Supplemental Information

Divisional Programme Board	**Biological Sciences Health**
Overall Assessment Results	☐ **Pass / Fail** ☒ **Graded**
Module Eligible for Compensation	☐ **Yes** ☒ **No** **If this module is eligible for compensation, there may be cases where compensation is not permitted due to programme accreditation requirements. Please check the associated programme specification for details.**
School Assessment Board	Health
Moderator	Eileen Harkess-Murphy
External Examiner	Philip Anyanwu
Accreditation Details	
Module Appears in CPD catalogue	☐ **Yes** ☒ **No**
Changes / Version Number	1.08

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
Online class test (50% weight). Students will answer a range of questions testing their knowledge fo fundamental descriptive and inferential statistics.
Assessment 2
Group presentation (50% weight). Students will present their analysis of a dataset, demonstrating their data interpretation and communication skills.
Assessment 3
(N.B. (i) Assessment Outcomes Grids for the module (one for each component) can be found below which clearly demonstrate how the learning outcomes of the module will be assessed. (ii) An indicative schedule listing approximate times within the academic calendar when assessment is likely to feature will be provided within the Student Module Handbook.)

Component 1

Assessment Type	LO1	LO2	LO3	LO4	LO5	Weighting of Assessment Element (%)	Timetabled Contact Hours
Online class test	☒	☒	☒	☐	☐	50	2

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Group presentation	☒	☒	☒	☐	☐	50	3

Component 3							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
	☐	☐	☐	☐	☐		
Combined total for all components						100%	5 hours

Change Control

What	When	Who
Version 1.07. Minor changes to student hours. Changes to assessment weightings. For AY21-22 SAB (Subject Panel) name updated, MC updated and EE	25.04.2022	Daniel Boakye
Version 1.08. Minor revision to contact hours.	27.08.2024	Lynsay Matthews