University of the West of Scotland
Module Descriptor

Title of Module: Statistical Methods for Public Health

Code: BIOL11023	SCQF Level: 11 (Scottish Credit and Qualifications Framework)	Credit Points: 20	ECTS: 10 (European Credit Transfer Scheme)
School:	School of 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

Face-To-Face	Blended	Fully Online	HybridC	HybridO	Work-based Learning
			✓		

Face-To-Face
Term used to describe the traditional classroom environment where the students and the lecturer meet synchronously in the same room for the whole provision.

Blended
A mode of delivery of a module or a programme that involves online and face-to-face delivery of learning, teaching and assessment activities, student support and feedback. A programme may be considered "blended" if it includes a combination of face-to-face, online and blended modules. If an online programme has any compulsory face-to-face and campus elements it must be described as blended with clearly articulated delivery information to manage student expectations

Fully Online
Instruction that is solely delivered by web-based or internet-based technologies. This term is used to describe the previously used terms distance learning and e learning.

HybridC
Online with mandatory face-to-face learning on Campus

HybridO
Online with optional face-to-face learning on Campus

Work-based Learning
Learning activities where the main location for the learning experience is in the workplace.

Campus(es) for Module Delivery

The module will **normally** be offered on the following campuses / or by Distance/Online Learning: (Provided viable student numbers permit)

Paisley:	Ayr:	Dumfries:	Lanarkshire:	London:	Distance/Online Learning:	Other:
			✓			

Term(s) for Module Delivery					
(Provided viable student numbers permit).					
Term 1		Term 2	✓	Term 3	

Learning Outcomes: (maximum of 5 statements)

On successful completion of this module the student will be able to:

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.

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 Level 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 Level 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 Level 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 Level 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 Level 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.

Pre-requisites:	Before undertaking this module the student should have undertaken the following:	
	Module Code:	Module Title:

	Other:	Ideally, students will have completed a basic statistics course or have some experience in statistical methods.
Co-requisites	Module Code:	Module Title:

* Indicates that module descriptor is not published.

Learning and Teaching

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 (Normally totalling 200 hours): (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture/Core Content Delivery	24
Tutorial/Synchronous Support Activity	12
Personal Development Plan	6
Independent Study	146
Laboratory/Practical Demonstration/Workshop	12
	200 Hours Total

**Indicative Resources: (eg. Core text, journals, internet access)

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

Access to library; electronic journals, advanced textbooks.

"A Basic Course in Statistics", Geoffrey M Clarke and Dennis Cooke (2011)

"Introductory Statistics", Openstax (online resource)

"Introduction to Robust Estimation and Hypothesis Testing", Rand Wilcox, 3rd Edition, Elsevier (2013)

"Regression Modelling Strategies; with application to Linear Models, Logistic Regression and Survival Analysis", Frank E Harrell, Jr; Springer (2015)

"Oxford Handbook of Medical Statistics", Professor Janet Peacock and Dr Philip Peacock (2010)

"Statistical Methods for Public Health", Class notes on the AULA site

Suitable software, e.g. SPSS and R

(**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)

Engagement Requirements

In line with the Academic Engagement Procedure, Students are defined as academically engaged if they are regularly engaged with timetabled teaching sessions, course-related learning resources including those in the

Library and on the relevant learning platform, and complete assessments and submit these on time. Please refer to the Academic Engagement Procedure at the following link: Academic engagement procedure

Where a module has Professional, Statutory or Regulatory Body requirements these will be listed here: In line with the Academic Engagement and Attendance Procedure, Students are defined as academically engaged if they are regularly engaged with timetabled teaching sessions, course-related learning resources including those in the Library and on VLE, and complete assessments and submit these on time.

Supplemental Information

Programme Board	Biological Sciences and Health
Assessment Results (Pass/Fail)	No
Subject Panel	Health L7-11
Moderator	Eileen Harkess-Murphy
External Examiner	P Anyanwu
Accreditation Details	
Changes/Version Number	1.08 MC updated (temporary for 23/24)

Assessment: (also refer to Assessment Outcomes Grids below)
Individual Assessment 50%
Group Course Work / Presentation 50%
(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 Handbook.)

Assessment Outcome Grids (Footnote A.)

Component 1

Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Class test (practical)	✓	✓	✓	50	0

Component 2

Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Presentation	✓	✓	✓	50	0
			Combined Total For All Components	100%	0 hours

Footnotes
A. Referred to within Assessment Section above
B. Identified in the Learning Outcome Section above

Note(s):
1. More than one assessment method can be used to assess individual learning outcomes.
2. Schools are responsible for determining student contact hours. Please refer to University Policy on contact hours (extract contained within section 10 of the Module Descriptor guidance note).
   This will normally be variable across Schools, dependent on Programmes &/or Professional requirements.

Equality and Diversity

In line with current legislation (Equality Act, 2010) and the UWS Equality, Diversity, and Human Rights Code, the module is accessible and inclusive, with reasonable adjustment for different needs where appropriate. Module materials comply with University guidance on inclusive learning and teaching, and specialist assistive equipment, support provision and adjustment to assessment practice will be made in accordance with UWS policy and regulations. For data analysis workshops in computer labs, the University will make reasonable adjustment such as adjustable height benches or assistance of a 'buddy' or helper. Additional support from the disability team and education guidance advisors will provide the module teaching team with resources to further support the students, made in accordance with UWS policy and regulations.
UWS Equality and Diversity Policy

(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)