

Statistics teaching within UK degree programmes in Medicine and allied health sciences, including through undergraduate and postgraduate entry schemes and intercalation

Note. This particular form is not for inclusion of details of statistical teaching in Masters and PhD programmes.

Institution: Cardiff University

Overview:

The Cardiff School of Dentistry has two statisticians (one full time and one part-time) teaching and supporting students and staff. Students learn statistics mainly in year 3, when they also learn critical appraisal, as part of the Dental Public Health module. During year 4, students are given a research project to develop and can request one to one support for their data analysis, this is when most of them tend to learn the most about statistics.

Type of students:

Medical Dental Biology
Mathematics Other (please state:)

Estimated total number of students: 80 per year

Academic years where medical statistics is taught: mostly year 3 (4 sessions of 3h); 1 session in year 4 on data entry and refreshing concepts in preparation for final year research project and 1 session in year 5 on presenting data, also to support final year research project. They have separate sessions for critical appraisal, questionnaire design and qualitative analysis.

No. of estimated hours per academic year: Formal teaching: year 3 - 12h; year 4 – 2h; year 5 – 2h; 1 to 1 support throughout the project, if needed – variable hours.

Please add fields to the table below, where necessary, to reflect missing subjects. This can easily be achieved by right-clicking in the last row and choosing the option ‘insert’ to insert individual rows. You can in turn copy-paste the content from an existing row and edit the subject name to suit your purposes.

Subject	Concept	Calculations/equations*	Descriptions/comments
Types of variable	√	<input type="checkbox"/>	
Distributions	√	<input type="checkbox"/>	Normal distribution taught more in depth; Poisson and Binomial distributions only taught briefly and more superficially.
Summary Statistics	√	√	Mean, Mode, Median, SD and MD calculations done manually and in statistical software JASP
Concepts of population and sample	√	<input type="checkbox"/>	
Confidence intervals	√	√	
Hypothesis testing, p-values	√	√	Students are taught the difference between significance testing (after Fisher) and hypothesis testing (after Newman-Pearson) and are encouraged to use p-values as strength of evidence (more in line with Fisher's ideas) instead of using a threshold to accept/reject hypothesis; the course covers parametric and non-parametric tests.
Comparing two means	√	√	Students do it manually and in the statistical software JASP

Comparing two proportions	<input type="checkbox"/>	<input type="checkbox"/>	
Linear regression	√	√	Manual calculations demonstrated but not performed by students; students perform it in the statistical software JASP
Logistic regression	√	<input type="checkbox"/>	Logistic regression is mentioned, and odds ratios are taught in the context of this, but the students do not perform it or learn any of the mathematics or principles behind it
Graphs	√	<input type="checkbox"/>	Through the statistical software JASP
Survival analysis	<input type="checkbox"/>	<input type="checkbox"/>	
Multivariate analysis	<input type="checkbox"/>	<input type="checkbox"/>	
Critical appraisal	√	√	The only assessment students have is a critical appraisal exercise; they have a number of practical sessions specifically for critical appraisal (somehow separate from the actual statistics teaching and led by different staff) and do a formative exercise followed by a summative one
Other (please state)	√	<input type="checkbox"/>	Throughout the sessions, students learn

			some of the history behind the statistical concepts and the scientists who developed them
Other (please state)	√	√	Chi-squared, T-tests (and equivalent non-parametric), Pearson's and Spearman's correlation, simple ANOVA
Other (please state)	<input type="checkbox"/>	<input type="checkbox"/>	

*If applicable.

Assessment details: Only critical appraisal is assessed; statistics teaching includes a handbook that students must complete throughout the sessions, but it is not assessed.

Computer package used:

Stata SPSS StatsDirect S-plus R
 NCSS Matlab Other √ please state which : JASP

Recommended literature: An Introduction to Medical Statistics – Martin Bland

Contact - administration

Name: Renata Medeiros Mirra Position: Lecturer in Medical Statistics
 Email address : medeirosmirrarj@cardiff.ac.uk Postal address : Telephone
 no. : 02920876292

Contact - tutors

Name	Department	Email	Address	Telephone Number
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Renata Medeiros	Cardiff School of Dentistry	medeirosmirrarj@cardiff.ac.uk		02920876292

Other comments:

Information last up to date: 09/09/2019

Please return to Margaret MacDougall at Margaret.MacDougall@ed.ac.uk