

<b>1. Module Title: Applied Biostatistics</b>		
<b>2. Module Code:</b>	<b>3a. Version No.:</b> 4 <b>3b. Date Approved:</b> <b>3c. Date last revised:</b> Aug 2006	
<b>4. Module Leader and Teaching Team: (indicate by * for module leaders)</b> Martin Bland*, Karen Bloor*, Catherine Hewitt		
<b>5. Timing of Module:</b> Once a week pm, Autumn Term		
<b>6. Name of Pathway/Branch/Course:</b> MScs in Health Services Research, Evidence-based Practice, Population Health, Diabetes Care, Mental Health; and large elements shared with PGDip with Professional Registration in Nursing.		
<b>7. Module Status:</b> Compulsory	<b>8. Level:</b> M	<b>9. No of Credits:</b> 10
<b>10. Professional Body Requirements:</b> None		
<b>11. Pre-requisite(s):</b> None	<b>12. Co-requisite(s):</b> None	<b>13. Barred Combinations:</b> None
<b>14. Aims of Module:</b> To provide a basic understanding and skills in using basic descriptive and inferential statistics. To be able to define commonly used terms in descriptive and inferential statistics. To evaluate the use of statistical analysis in published research.		
<b>15. Synopsis of Module:</b> Descriptive and inferential, and use of SPSS.		

**16. Learning Outcomes:****Knowledge and understanding of the subject area:**

- Demonstrate understanding of the principles underlying descriptive and inferential statistics

**Cognitive and intellectual skills:**

- Demonstrate an understanding of the strengths and weaknesses of different methods of investigation in health research.
- Critically appraise results of research
- Interpret the results of research

**Subject-specific skills:**

- Be able to identify the most appropriate research designs for different research questions
- Be able to describe data and carry out simple inferential tests.
- Be able to design a study to answer research questions
- Be able to critically appraise reports of research which have used a range of methods

**Key transferable skills:**

- Can use SPSS for entering and analysing data.

**17. Teaching & Learning Strategies (including sizes of groups taught, eg full, seminar etc)**

Statistics lectures accompanied by practical sessions.

**18. Allocation of Teaching & Learning Time (100 hours total per 10 credits)**

a. Lectures	b. Seminars	c. Tutorials	d. Lab/Pract	e. Directed Study	f. Private Study	g. Other	h. Formal Exams	i. Total
9	0	0	14	40	37	0		100
<b>19. Delivery Details</b>		<b>19a: Principal Teaching Site:</b> University of York			<b>19b: Max No Students per module intake:</b> 60	<b>19c: No Intakes per year - one</b>		

## 20. Assessment Strategy

Analysis of and commentary on a simple data set on a health-related area: to be done in own time and submitted by the final week of the course. The assignment will be presented as a 2,000-word report plus relevant figures and tables along with appendices showing the analysis strategy and any other relevant outputs not included in the main report. The total should not exceed 35 pages.

## 21. Indicative Content/ Sessions Outline

### Week Lecture sessions:

2	Frequency and frequency distributions	Introduction to SPSS, drawing histograms
3	Mean, standard deviation, quantiles	Calculation of summary statistics, relating mean and SD to histogram
4	Significance tests	Sign test
5	The Normal distribution, standard error and confidence intervals	Data entry in SPSS, using the Research Methods questionnaire
6	Comparing groups – continuous data, using paired and two sample t tests	Comparing means, using the Research Methods questionnaire
7	Comparing groups – categorical data, using chi-squared, relative risk and odds ratio	Chi-squared tests, using the Research Methods questionnaire
8	Correlation and regression	Scatter diagrams, correlation coefficients and regression lines, using the Research Methods questionnaire
9	Multiple and logistic regression	Multiple regression using the Research Methods questionnaire
10	Writing a statistical report	Revision exercise

## 22. Teaching & Learning Resources:

### 22a Reading List

#### (i) Recommended text for students

Bland M. *An introduction to medical statistics* (3<sup>rd</sup> ed) Oxford: Oxford University Press (2000)

#### (ii) Other recommended reading

Kinnear PR and Gray CD. *SPSS 14 made simple* Psychology Press

Field, A. *Discovering statistics using SPSS for Windows*, 2<sup>nd</sup> edition. Sage, 2005.

## **22b. Journals**

British Medical Journal <http://bmj.bmjournals.com/>

Evidence-based nursing <http://ebn.bmjournals.com/>

## **22c. Websites and other electronic sources**

## **22e. Staffing Requirements**

Lecturers with knowledge and skills in health research.

Postgraduate assistants and others with appropriate skills to give seminar support and support for statistics practicals.