ENTRY REQUIREMENTS
Students will usually be expected to have completed or to be in the process of completing one of the other core courses on their programme of study. Students should also note that all modules on the Certificate course are taught at university level [first year, Level 4] and students should be able to read, write and speak English fluently in order to study and undertake assessments on the course. Students new to psychology will benefit from undertaking some preparatory reading as detailed below.

AIMS
- To understand the basic concepts of data collection
- To appreciate how descriptive statistics are used to represent and summarize data
- To realise how different levels of measurement affect the choice of statistical test
- To recognise the difference between quantitative and qualitative methods
- To understand how statistical tests can be used to make inferences to the wider population
- To distinguish between tests of difference and tests of association
- To understand how the interpretation of findings can be affected by other factors
- To consider advantages and disadvantages of different methods with respect to experimenter and participant effects
- To reflect upon past sound and unsound ethical practices
- To develop skills in writing laboratory reports based upon class experiments
LEARNING OUTCOMES

On successful completion of this course you should be able to:

- Conduct basic calculations using a calculator and a computer
- Obtain information from tables, graphs and charts
- Carry out psychological experiments in class with the other students
- Become aware of ethical issues concerning experiments
- Write laboratory reports following the conventional format
- Access Moodle to obtain course material and submit assignments via Turnitin
- Review and critically comment on background literature
- Select appropriate statistical tests to analyse psychological data
- Carry out statistical analysis by hand and in SPSS
- Interpret findings from statistical analysis
- Discuss and implement a range of strategies to support your learning

CONTENT

This course will typically include the following:

<table>
<thead>
<tr>
<th>Content</th>
<th>Specific topic</th>
<th>Areas covered</th>
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</table>
| Methods used in research | Quantitative methods | • Overview of quantitative methods (e.g. laboratory, field and natural experiments)  
• Overview of analysis of quantitative numeric material (e.g. descriptive and inferential statistics)  
• Nature of scientific research and the Scientific Method  
• Cause and effect: Examining effects of the independent variable(s) on the dependent variable(s) or score(s)  
• Hypothesis testing (experimental and null hypotheses)  
• Control groups and baseline measures  
• Random selection and random allocation  
• ABBA designs and counterbalancing  
• Levels of measurement (nominal, ordinal, interval, ratio)  
• Experimental design (between participants, within participants, matched pairs)  
• Comparing tests of difference and tests of association (correlation)  
• Overview of non-parametric tests to be covered e.g. Sign, Wilcoxon, Mann-Whitney, Chi Squared and Spearman correlation  
• Selecting statistical tests based on experimental design and level of measurement, and using a decision tree  
• Defining basic experimental terms (e.g. variables) |
| Qualitative methods | Overview of qualitative methods (e.g. naturalistic observation, interviews and questionnaire studies)  
|                     | Compiling interview, questionnaire and survey questions (e.g. open and closed questions)  
|                     | Observational methods with and without intervention (e.g. participant and non-participant observation)  
|                     | Sources of bias (e.g. response bias, reactivity in participants)  
| Data collection and analysis | Summarising data using descriptive statistics  
|                         | Understanding the difference between descriptive and inferential statistics  
|                         | Measures of central tendency (mean, median, mode)  
|                         | Measures of dispersion (range, interquartile range, variance and standard deviation)  
|                         | Plotting frequency distributions (histograms & polygons)  
|                         | Distinguishing between tests of difference and tests of association  
|                         | Worked examples of non-parametric tests of difference (Sign, Wilcoxon, Mann-Whitney)  
|                         | Worked examples of Chi Squared test for nominal data (goodness of fit, 2 by 2 and larger contingency tables, observed and expected values, small sample sizes)  
|                         | Drawing bar charts and line graphs  
|                         | Worked example of non-parametric test of association (Spearman correlation)  
|                         | Drawing and interpreting scattergrams/scatterplots  
|                         | Levels of significance  
|                         | Comparing calculated values with table values, interpreting and expressing findings  
|                         | Defining basic statistical terms (e.g. standard deviation)  
| Introduction to ethical practices | BPS and APA ethical guidelines work working with humans and animals (briefing and debriefing, use of deception, informed consent and right to withdraw, confidentiality, etc.)  
|                                | Examples from the literature of desirable and non-desirable ethical practices  
| SPSS | Defining variables and entering data  
|     | Selecting descriptive statistics (measures of central tendency and dispersion)  
|     | Producing tables, graphs and charts  
|     | Cutting and pasting tables, graphs and charts into laboratory reports  
|     | Carrying out non-parametric tests of difference (Mann-Whitney and Wilcoxon)  
|     | Producing scatterplots and requesting 'best fit' line  
|     | Carrying out Chi Squared tests  
|     | Carrying out non-parametric test of association (Spearman)  
|     | Examining and interpreting output tables  

Assessment and Timed Test

- Assignment: Laboratory Report based on experiment carried out in class as a group using non-parametric test(s) of difference e.g. difference between ratings from before and after an event or activity
- Timed Test (2 hours) with questions split between those based on an experimental scenario showing the result of a non-parametric test, and those based on the practical application of SPSS knowledge of non-parametric tests

Maths and study skills for Research Methods

- Feeling confident with numeric data
- Using a basic calculator for simple statistical calculations
- Obtaining information from tables, graphs and charts
- Understanding decimal places and rounding up scores
- Working out fractions, percentages and ratios
- Consulting statistical tables
- Converting proportions to percentages
- Ranking data
- Writing laboratory reports (different sections, word count for each section, etc.)
- Practical marking exercise with examples of previous class reports
- Referencing
- Ownership and plagiarism
- Using Turnitin to check for originality and submit assignments

Worksheets, reading and reference sources

- Available resources and reading list
- Weekly Q&A sheets based on topics covered (can be used in class for small group exercises or as ‘homework’ recapped the following week)
- Weekly reading, book chapters or journal articles plus simplified or extension materials sourced by tutor
- Notes on writing laboratory reports
- Past examples of laboratory reports (but not on topics covered by current class experiments)

TEACHING AND LEARNING METHODS

A range of teaching methods will be used and these include lectures on the area studied where students are encouraged to ask questions and discuss points throughout. There will also be small group exercises and workshops. Other methods include class experiments and discussion of published articles. Support to develop critical thinking and effective study and computing skills will be incorporated throughout the course.

Credit points are used to summarize and describe the amount of learning taking place for a given module. For a 15 Credit module this equates to 150 hours most of which comprises independent learning. For this course, 33 hours (3 x 11 weeks) will be delivered in the classroom. Students should also expect to build on their learning in class by undertaking guided independent study including appropriate reading and research; further details can be found in the appropriate Award Handbook.
METHODS OF ASSESSMENT

The assessment process gives students important opportunities to learn, to check their learning and to discuss their progress with the tutor. Consequently, students will complete one assignment and one timed test. The assignment that will be submitted approximately halfway through the course, is a laboratory report of 1500 words (plus or minus 10%) based upon a laboratory experiment carried out in class as a group and written up individually. The timed test that will be carried out at the end of the course has two sections, A and B. Section A has a specific focus on methodology and ethics, and Section B assesses the practical use of SPSS. In order to successfully complete the module students must attain at least 40% overall, achieving a minimum of 40% in the lab report and both sections of the timed test.

- Date of timed test: Week beginning 3 July 2017

READING

You are not expected to read all the books listed below. They are examples of books that you may find interesting or useful. Your tutor will give you further guidance once the course begins.


Please note: Psychology books are frequently revised and updated. Any recent edition would be suitable to use.

STUDENT SUPPORT SERVICES

The My Birkbeck website (http://www.bbk.ac.uk/mybirkbeck/) is your gateway to accessing all student support services at Birkbeck.
You may find the following links particularly useful:

- Obtaining your library/ID card: [http://www.bbk.ac.uk/mybirkbeck/services/you/cards](http://www.bbk.ac.uk/mybirkbeck/services/you/cards)
- Accessing IT Services: [http://www.bbk.ac.uk/mybirkbeck/services/facilities/computing/username](http://www.bbk.ac.uk/mybirkbeck/services/facilities/computing/username)
- Study skills support: [http://www.bbk.ac.uk/mybirkbeck/services/facilities/support/study-skills](http://www.bbk.ac.uk/mybirkbeck/services/facilities/support/study-skills)

You can visit the My Birkbeck helpdesk on the ground floor of the main Birkbeck building on Malet Street (entry via Torrington Square). For details of opening hours visit: [http://www.bbk.ac.uk/mybirkbeck/services/facilities/helpdesk/](http://www.bbk.ac.uk/mybirkbeck/services/facilities/helpdesk/)

**LIBRARY AND STUDY SKILLS RESOURCES**

Once you have your ID card, you may use the Birkbeck library and associated resources. You may find the following web links helpful:

- For information on how best to access the resources available for psychology students through Birkbeck College Library, students may wish to work through the tutorial available at [http://www.bbk.ac.uk/lib/life/](http://www.bbk.ac.uk/lib/life/)
- For specific guidance for psychologists and psychology students on getting the best out the internet go to: [http://www.vtstutorials.co.uk/](http://www.vtstutorials.co.uk/) - and search for ‘Psychology’
- For specific guidance on **how to avoid plagiarism** in your course work go to [https://connect.le.ac.uk/p50066682/](https://connect.le.ac.uk/p50066682/) and press the ‘play’ button.

**COURSE EVALUATION**

During the course students will be asked to complete an evaluation form which gives the opportunity to provide feedback on all aspects of their learning.

**WHAT CAN I DO NEXT**

It is important you are clear which award the module you are enrolled on counts towards. Our website provides an overview of each Certificate award so you can decide which best suits your needs: [http://www.bbk.ac.uk/study/2014/certificates/subject/psychology/](http://www.bbk.ac.uk/study/2014/certificates/subject/psychology/)

Information is available on core and option modules for each Certificate. Your choice of subsequent modules you take should be informed by this information. Modules can be taken in any order although it is recommended that certain core modules are taken first. Not all core modules have to be taken in the same year. If you need further advice you can contact the department by telephone on 0207 631 6669 or by e-mail: psychologycert@bbk.ac.uk

Syllabi last revised: August 2014
<table>
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<tr>
<th>Week</th>
<th>Main topic</th>
<th>Session content</th>
<th>Maths and study skills</th>
<th>Independent learning and assessment</th>
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<tr>
<td>1</td>
<td>Course introduction</td>
<td>Scientific research, cause and effect Independent and dependent variables Experimental and null hypotheses Levels of measurement</td>
<td>Feeling confident with numeric data, ranking data Calculating measures of central tendency Using basic calculator for descriptive statistics Determining levels of measurement</td>
<td>Assessment methods used on this course Available resources Reading: Nature of scientific research Worksheet 1 Q&amp;A</td>
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<tr>
<td>2</td>
<td>Quantitative methods (i)</td>
<td>Experimental design: Advantages and disadvantages of different designs Use of control / baseline measures Randomization &amp; counterbalancing</td>
<td>Calculating measures of dispersion Working out fractions, percentages and ratios Understanding decimal places and rounding up Obtaining information from tables, graphs and charts</td>
<td>Accessing course material on Moodle Using websites for research Reading: Summarizing data, rounding up numbers Worksheet 2 Q&amp;A</td>
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<tr>
<td>3</td>
<td>Class Experiment Ethical issues</td>
<td>BPS and APA ethical guidelines including issues of consent, debriefing and confidentiality Past examples of unethical practice Carrying out class experiment</td>
<td>Collecting and tabulating data, and working out descriptive statistics by hand/with a calculator Drawing frequency distributions (polygons and histograms) by hand Writing laboratory reports, ownership and referencing, word counts</td>
<td>Brief for Assignment: Lab Report based on class experiment Notes on writing reports, ownership and referencing Reading: Reporting experiments and ethical guidelines Worksheet 3 Q&amp;A</td>
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<tr>
<td>4</td>
<td>Quantitative methods (ii)</td>
<td>Overview of non-parametric tests of difference, within participant designs (Sign test and Wilcoxon test)</td>
<td>Worked examples of within participant tests, comparing calculated values with table values</td>
<td>Using Turnitin for submitting reports Reading: Inferential and descriptive statistics SPSS worksheet (1) Worksheet 4 Q&amp;A</td>
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<td></td>
<td>SPSS (1) Basics</td>
<td>Defining basic statistical terms Group catch-up on assignment</td>
<td>Laboratory report marking exercise</td>
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<td></td>
<td>Time</td>
<td>Topic</td>
<td>Description</td>
<td>Reading/Assignment</td>
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<td>5</td>
<td>18.00-21.00</td>
<td>Quantitative Methods (iv) SPSS (2) Non-parametric tests</td>
<td>Non-parametric tests of difference, between participant designs (Mann-Whitney test) Significance and probability levels Group catch-up on assignment</td>
<td>Reading: Experimental design SPSS worksheet (2) Worksheet 5 Q&amp;A</td>
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<td>6</td>
<td>18.00-21.00</td>
<td>Quantitative Methods (v) SPSS (3) Correlation</td>
<td>Comparing non-parametric tests of difference and tests of association (Spearman correlation)</td>
<td>Worked example of non-parametric correlation by hand Converting proportions to percentages SPSS: Requesting scattergrams and lines of best fit</td>
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<td>7</td>
<td>18.00-21.00</td>
<td>SPSS revision SPSS practice test (Section B Timed test)</td>
<td>1 hour practice SPSS test carried out in class SPSS questions and answers</td>
<td>Practical test of SPSS knowledge and application Opportunity to check SPSS understanding</td>
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<tr>
<td>8</td>
<td>18.00-21.00</td>
<td>Qualitative methods (i)</td>
<td>Qualitative methods, surveys interviews and questionnaires</td>
<td>Role play, conducting interviews and writing questionnaires with open and closed questions</td>
</tr>
<tr>
<td>9</td>
<td>18.00-21.00</td>
<td>Qualitative methods (ii)</td>
<td>Observational methods, sampling techniques Sources of bias</td>
<td>Identifying sources of bias (e.g. experimenter bias, reactivity in participants) in published journal articles</td>
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<tr>
<td>10</td>
<td>18.00-21.00</td>
<td>Quantitative Methods(vi) SPSS (4) Chi Squared</td>
<td>Chi Squared tests for nominal data Introduction to degrees of freedom</td>
<td>Worked examples of Chi Squared test by hand on using SPSS Calculating degrees of freedom</td>
</tr>
<tr>
<td>11</td>
<td>18.00-21.00</td>
<td>Timed Test Review of course Conclusions</td>
<td>Last minute Timed Test questions 2 hour Timed Test of Research Methods and SPSS</td>
<td>Feedback forms Admin</td>
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</table>