ENTRY REQUIREMENTS
Students must have passed Research Methods [Part 1] before commencing the course.

AIMS
- To develop an understanding of the rationale for methods used in psychological research
- To be aware of the different types of data that can be measured and the relative merits of each
- To know when to use parametric or non-parametric tests and understand the rationale behind parametric testing
- To become familiar with the different types of variable within research
- To understand how hypotheses are used to make predictions in experiments
- To identify variability in data and understand the implications of trimming and transforming scores
- To appreciate what is meant by the validity and reliability in experiments
- To understand the difference between planned and unplanned tests
- To recognise sound ethical practices in psychological research
- To develop an appreciation of general research methodology

LEARNING OUTCOMES
On successful completion of this course you should be able to:
- Feel confident using and interpreting numeric data
- Conduct statistical analysis using SPSS and interpret output tables
- Develop an understanding of probabilities and significance levels
• Compare quantitative with qualitative methods
• Conduct critical analysis of published psychology articles
• Demonstrate an understanding of methodological issues concerned with experimental design and procedure and selection of participants
• Demonstrate an understanding of ethical issues connected with carrying out research including consent and British Psychological Society guidelines
• Think critically about the topics covered and contribute to class discussion
• Develop an understanding of the nature of scientific research
• Develop an understanding of the use of qualitative methods and carry out Interpretative Phenomenological Analysis (IPA)
• Express both written and spoken research findings with confidence
• 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>
</tr>
</thead>
</table>
| Methods used in research | Quantitative methods | • Recap selecting statistical tests based on experimental design and level of measurement, using a decision tree  
• Describing the circumstances under which specific tests are appropriate  
• Differences between parametric and nonparametric tests  
• Parametric assumptions (normal distribution, homogeneity of variance, interval or ratio data)  
• Overview of parametric test tests to be covered (related t-test, unrelated t-tests, Pearson correlation)  
• Probability theory (simultaneous and sequential events)  
• Central limits theorem (samples and populations)  
• Planned (a priori) and unplanned (post hoc) tests  
• Experimental reliability, internal and external validity (test-retest and split-half techniques)  
• Extraneous and confounding variables  
• Carry-over effects and Latin Square designs  
• Type I and Type II errors  
• Floor and ceiling effects  
• Experimenter and participant effects, experimenter bias and demand characteristics |
<table>
<thead>
<tr>
<th>Qualitative methods</th>
<th>Data collection and analysis</th>
<th>Advanced ethical practices</th>
<th>SPSS</th>
</tr>
</thead>
</table>
| • Sampling Methods (e.g. situation sampling, time sampling, event sampling)  
• External and internal validity of observational methods  
• Qualitative analysis techniques (grounded theory, thematic analysis, Interpretative Phenomenological Analysis - IPA)  
• Converting verbal data to numeric codes (content analysis)  
• Ensuring rigor in observational methods (e.g. observer bias, observer influence, inter-observer reliability, blind and double blind techniques)  
• Single case studies with clinical examples, converging evidence from single cases | • Recap frequency distribution  
• Understanding the principles of inferential tests  
• Drawing and interpreting box plots, identifying outliers  
• Worked examples of parametric tests of difference (Related t-test, unrelated t-test)  
• Worked example of F-test for variance  
• Making multiple comparisons, family-wise error rates (Bonferroni t-test/Dunn’s test)  
• Worked example of parametric test of association (Pearson correlation)  
• Normal distribution and Z-scores (comparing individual scores with sample, comparing sample with population)  
• Interpreting box plots and stem & leaf diagrams  
• Normalising data distributions: trimming scores and transforming data  
• Worked examples of Chi Square test for nominal data (goodness of fit, 2 by 2 and larger contingency tables) observed and expected values, small sample sizes | • Recap BPS ethical guidelines work working with humans  
• The work of ethics committees  
• Designing a consent form  
• Considering physical and psychological harm when briefing and debriefing participants | • Recap defining variables and entering data  
• Producing and interpreting boxplots and stem and leaf diagrams  
• Customising tables, graphs and charts  
• Carrying out parametric tests of difference (related and unrelated t-tests)  
• Recap producing scatterplots and requesting ‘best fit’ line  
• Carrying out parametric test of association (Pearson)  
• Examining and interpreting output tables |
### Assessment

**Assignment and Timed Test**

- **Assignment:** Laboratory Report based on experiment carried out in class as a group using parametric test(s) of difference and/or association, e.g. difference between time taken for different groups to complete a task, association of speed and accuracy.
- **Timed Test (2 hours)** with questions split between those based on an experimental scenario showing the result of a parametric test, and those based on the practical application of SPSS knowledge of parametric tests.

### Maths and study skills

**Advanced maths and study skills for Research Methods**

- Recap feeling confident with numeric data
- Understanding statistical notation and formulae
- Using brackets in calculations
- Squaring numbers and square roots
- Understanding probabilities and significance levels
- Recap consulting statistical tables
- Recap writing laboratory reports
- Recap referencing
- Recap ownership and plagiarism
- Carrying out critical analysis (orienting and critical questions)
- Practical critique of published journal article(s)
- Revision for timed test

### Independent learning

**Worksheets, reading and reference sources**

- Further resources and reading
- Weekly Q&A sheets based on topics covered, recapped during following classes
- Weekly reading, book chapters or journal articles plus simplified or extension materials sourced by tutor

### 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 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 20 March 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.

Prentice Hall.
Press.
Education. Oxford University Press.

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
- Accessing IT Services: http://www.bbk.ac.uk/mybirkbeck/services/facilities/computing/username
- Contacting our disability office: http://www.bbk.ac.uk/mybirkbeck/services/facilities/disability/disability-office
- Study skills support: 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/

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/
- For specific guidance for psychologists and psychology students on getting the best out the internet go to: 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/ 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/

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
## Appendix: Sample timetable

<table>
<thead>
<tr>
<th>Week</th>
<th>Main topic</th>
<th>Session content</th>
<th>Maths and study skills</th>
<th>Independent learning and assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Course introduction</td>
<td>Selection of statistical test based on level of measurement and experimental design</td>
<td>Decision trees</td>
<td>Assessment methods used on this course</td>
</tr>
<tr>
<td></td>
<td>Quantitative methods (i)</td>
<td>Probability theory, simultaneous and sequential events</td>
<td>Feeling confident with numeric data</td>
<td>Available resources</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Frequency distributions and significance levels</td>
<td>Reading: Statistical inference and probability</td>
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<td></td>
<td></td>
<td>Working out probabilities (e.g. dice throwing, coin flipping)</td>
<td>Worksheet 1 Q&amp;A</td>
</tr>
<tr>
<td>2</td>
<td>Quantitative methods (ii)</td>
<td>Differences between parametric and non-parametric tests, parametric assumptions Type I and Type II errors</td>
<td>Using scientific notation and formulae, brackets in calculations</td>
<td>Accessing course material on Moodle</td>
</tr>
<tr>
<td></td>
<td>Advanced SPSS (1) box plots and outliers</td>
<td></td>
<td>SPSS: Requesting and interpreting frequency distributions, box plots, stem &amp; leaf diagrams</td>
<td>Reading: Two-sample tests (t-tests)</td>
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<td></td>
<td></td>
<td>Advanced SPSS worksheet (1)</td>
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<td>Worksheet 2 Q&amp;A</td>
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<tr>
<td>3</td>
<td>Quantitative methods (iii)</td>
<td>Parametric test of difference, within participants design (related t-tests)</td>
<td>Worked examples of related t-test by hand, squaring and finding square root, calculating degrees of freedom, consulting t-test tables</td>
<td>Brief for Assignment: Lab Report based on class experiment</td>
</tr>
<tr>
<td></td>
<td>Class Experiment</td>
<td>Carrying out class experiment</td>
<td>SPSS: Entering data, producing frequency distributions, requesting related t-tests and interpreting output tables</td>
<td>Notes on writing reports, ownership and referencing</td>
</tr>
<tr>
<td></td>
<td>Advanced SPSS (2) related t-tests</td>
<td>Experimental validity, extraneous and confounding variables</td>
<td></td>
<td>Reading: Randomisation</td>
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<td></td>
<td>Advanced SPSS worksheet (2)</td>
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<td>Worksheet 3 Q&amp;A</td>
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<tr>
<td>4</td>
<td>Quantitative methods (iv)</td>
<td>Parametric test of difference, between participants design, (unrelated t-tests) F-test for variance Planned and unplanned tests</td>
<td>Worked examples of unrelated t-tests</td>
<td>Past SPSS tests</td>
</tr>
<tr>
<td></td>
<td>Advanced SPSS (3) Unrelated t-tests</td>
<td></td>
<td>SPSS: Requesting unrelated t-tests, interpreting output tables</td>
<td>Reading: Experimental and control conditions</td>
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<tr>
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<td></td>
<td>Requesting unplanned tests (e.g. Dunn’s test)</td>
<td>Advanced SPSS worksheet (3)</td>
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<td>Worksheet 4 Q&amp;A</td>
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<tr>
<td>5</td>
<td>Quantitative methods (v)</td>
<td>Parametric test of association (Pearson correlation)</td>
<td>Worked examples of correlation, comparing calculated values with table values</td>
<td>Past SPSS tests</td>
</tr>
<tr>
<td></td>
<td>Advanced SPSS (4) correlation</td>
<td>Group catch-up on assignment</td>
<td>SPSS: Requesting Pearson correlation and interpreting output tables</td>
<td>Reading: Tests of association</td>
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<td>Advanced SPSS worksheet (4)</td>
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<td>Worksheet 5 Q&amp;A</td>
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<tr>
<td>Time</td>
<td>Topic</td>
<td>Details</td>
<td>Notes</td>
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<tr>
<td>6:00</td>
<td>SPSS revision</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 Submit completed Assignment through Turnitin (6pm deadline) Reading: One-tailed and two-tailed tests Worksheet 6 Q&amp;A</td>
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</tr>
<tr>
<td>6:00</td>
<td>Qualitative methods</td>
<td>Qualitative analysis techniques Sampling methods Inter-rater reliability, blind and double blind techniques</td>
<td>Interpretative Phenomenological Analysis (IPA) of verbal data Sources of bias in published journal articles Revision past Timed Test papers Reading: Qualitative analysis of verbal material Worksheet 7 Q&amp;A</td>
<td></td>
</tr>
<tr>
<td>6:00</td>
<td>Quantitative methods (vi)</td>
<td>Central Limits Theorem Normal distribution and Z-scores Normalizing data distributions</td>
<td>Worked examples of trimming sets of scores and transforming data Drawing distributions Further work on consulting tables Revision past Timed Test papers Reading: Normal distribution Worksheet 8 Q&amp;A</td>
<td></td>
</tr>
<tr>
<td>6:00</td>
<td>Quantitative methods (vii)</td>
<td>Experimenter and participant effects, floor and ceiling effects, carry over effects and Latin Squares Critical analysis, orienting and critical questions</td>
<td>Practical work on past timed test papers, focus on methodological questions Practical critique of published clinical psychology article Revision past Timed Test papers Check list of research methods Reading: Research methods in psychology Worksheet 9 Q&amp;A</td>
<td></td>
</tr>
<tr>
<td>6:00</td>
<td>Revision past Timed Test papers</td>
<td>Revision session, recap of key topics including methodological and ethical issues</td>
<td>Practical work on past timed test papers, focus on ethical questions Revision past Timed Test papers Reading: Ethical issues Worksheet 9 Q&amp;A</td>
<td></td>
</tr>
<tr>
<td>6:00</td>
<td>Timed Test</td>
<td>Last minute Timed Test questions 2 hour Timed Test of Advanced Research Methods and SPSS</td>
<td>Feedback forms Admin Preparation for further study Reading: One-way Analysis of Variance</td>
<td></td>
</tr>
</tbody>
</table>