**Level one: Research Methods checklist**

**You will need to be able to demonstrate knowledge and understanding of the following:**

1. **Research methods**
2. **Scientific processes**
3. **Techniques of data handling and analysis.**
4. **It is also important that you’re aware of their strengths and limitations.**

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|  | Level 3 | Level 5 |
| **Methods and techniques** |  |  |
| **Experiments*** What is a lab experiment?
* What are the advantages of a lab experiment?
* What are the disadvantages of lab experiments?
* What is a field experiment?
* What are the advantages of a field experiment?
* What are the disadvantages of field experiments?

 * What is a natural experiment?
* What are the advantages of a natural experiment?
* What are the disadvantages of natural experiments?
* What is a quasi experiment?
* What are the advantages of a quasi experiment?
* What are the disadvantages of a quasi experiment?
* How to design an experiment.
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| **Correlational analysis*** What is a correlational study?
* What is the difference between correlations and experiments
* What is a positive/negative correlation?
* What are the disadvantages of a correlational study?
* What are the disadvantages of correlational study?
* How to design a correlation
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| **Observational techniques*** What is an observational study?
* What is a naturalistic observation? (+advantages and disadvantages)
* What is a controlled observation? (+advantages and Disadvantages)
* What is a covert and overt observation? (+ advantages and disadvantages)
* What is a participant and non-participant observation? (+ advantages and disadvantages)
* How to design an observation
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| **Self report techniques*** What is a questionnaire? (+ advantages and disadvantages)
* What is an interview?
* What is a structured interview? (+ advantages and disadvantages)
* What is an unstructured interview? (+ advantages and disadvantages)
* How to design questionnaires and interviews.
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| **Case studies*** What is a case study?
* What are the advantages of case studies?
* What are the disadvantages of case studies?
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| **Content analysis*** What is a content analysis?
* What are the advantages of a content analysis?
* What are the disadvantages of a content analysis?
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| **Investigation design** |  |  |
| * Aims

-stating aims, -difference between aims and hypotheses* Hypotheses

- Directional/one tailed hypothesis- Non-directional/ two tailed hypothesis- Null hypothesis- Operationalised hypotheses* Sampling

- The difference between population and sample - Opportunity sample (+advantages and disadvantages) - Random sample (+advantages and disadvantages) - Volunteer sample (+advantages and disadvantages) - Systematic sample(+advantages and disadvantages) - Stratified sample (+advantages and disadvantages)* Pilot studies and the aims of pilot studies
* Experimental design

- Independent groups (+advantages and disadvantages)- Repeated measures (+advantages and disadvantages) - Matched pairs (+advantages and disadvantages)* Observational design

 - Time and event sampling (+ advantages and disadvantages)*-*  Behavioural categories? (you must be able to create operationalised behavioural categories)* Questionnaire construction

- The use of open and closed questions (+advantages and disadvantages)* Designing interviews
* Variables

-Independent variable -Dependent variable-Co-variables (correlation)- Operationalisation of variables-Extraneous variables (and how they can be controlled)-Confounding variables (and how they can be controlled)* Control

- random allocation & how to do this- counterbalancing & how to do this- randomisation & how to do this- standardisation & how to do this* Demand characteristics and investigator effects
* Ethics

- the role of BPS guidelines- ethical issues in the design and conduct of psychological studies- dealing with ethical issues in research* The implication of psychological research for the economy
* Reliability

-what is reliability?- definition of inter-rater reliability and how this is used to assess the reliability of observations* Validity

- what is validity?- types of validity – internal and external (ecological, temporal, population)  |  |  |

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| **Data handling and analysis** |  |  |
| * Quantitative and qualitative data

- the distinction between these data collection techniques* Primary and secondary data (+ advantages and disadvantages)

-including meta-analysis (+advantages and disadvantages)* Descriptive statistics

Measures of central tendency* Mean (+ advantages and disadvantages) and calculation
* Mode (+ advantages and disadvantages) and calculation
* Median (+ advantages and disadvantages) and calculation

Measures of dispersion* Range (+ advantages and disadvantages) and calculation
* Standard Deviation (+ advantages and disadvantages)

Calculation of percentagesPositive, negative and zero correlations* Presentation and display of quantitative data

-graphs-tables-scattergrams-bar charts- histograms* Distributions

 -normal and skewed distributions-characteristics of normal and skewed distributions* Analysis and interpretation of correlation, correlation co-efficients
* Qualitative data analysis - content analysis and thematic analysis
* Introduction to statistical testing

- calculating of the sign test - interpreting the significance of the sign test |  |  |

**Research methods taught in the second year (but you will need to know first and second year research methods for paper 2)**

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| * Probability and significance:

-use of statistical tables and critical values in interpretation of significance; -Type I and Type II errors. • Factors affecting the choice of statistical test, -including level of measurement and experimental design. When to use the following tests: -Spearman’s rho, -Pearson’s r, -Wilcoxon, -Mann-Whitney, -related t-test, -unrelated t-test -Chi-Squared test.  |  |  |