Department of Psychology (Faculty of Science)

Regulations and Guidelines for Students

Research Project in Cognitive Neuroscience (PSY6431) 2019-20

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Important dates and deadlines

Tuesday 17th December 2019. Project allocations issued. You will receive an email from our PGT admin team. As soon as you know which project you've been allocated, you may choose (though this is not compulsory) to discuss with supervisors any background reading, involvement in ethics applications (if applicable), preparation, attendance at lab meetings etc.

Monday 10th February 2020. Projects officially begin.

We suggest that you arrange deadlines with your supervisor for writing sections of your thesis. As a guide, it is recommended that a first draft of your introduction, and materials and methods sections is given to your supervisor around **Friday 29th May**, as a practice piece of scientific writing, upon which you can receive feedback. Again as a guide, you should submit a draft of your complete dissertation (containing all of your chapters) to your supervisor around **Friday 31st July**. We do not expect your work to be finished at this stage. Rather, this will allow time for you to incorporate any constructive feedback before final submission.

Week beginning 27th July 2020 (Date TBC). Oral presentation of dissertation results to the module cohort and course staff at a conference-style event. This assessed presentation comprises 10% to your module mark and is a course requirement.

Friday 28th August 2020, 12.00 noon. A PDF copy of your thesis must be submitted through Blackboard. Instructions about the submission process will be circulated in advance.

Example title page

Altered facial recognition ability in schizophrenia: An fMRI study

Registration Number: 987654321

Supervised by: Albert Einstein, Sir Isaac Newton and Marie Curie

A project dissertation in partial fulfilment of the requirements for the Master of Science (Research) degree in Cognitive Neuroscience and Human Neuroimaging.

University of Sheffield.

August 2020

Word count: 7,999 words

Writing your thesis

Thesis Layout

The thesis begins with the title page (see page 3). Each subsequent section starts on a new page. Every page in the thesis is consecutively numbered except for the title page. The sections of the report must be in the following order:

- Title page (including word count for sections 1 to 4 – see below)
- Acknowledgements (optional)
- Abstract (maximum of 300 words)
- List of contents
- List of tables
- List of figures
- List of abbreviations

1. Introduction and background literature review
2. Materials and methods
3. Results
4. Discussion

- References
- Appendices (if required)

Remember that everything submitted for your research report must be your own work. **Your thesis will be put through Turnitin to check for plagiarism**. You may include collaborative work so long as you attribute the part of it that was done by that person by name and you have their permission to include it**. If you are unsure, please discuss the matter with the module lead, Dr Stuart Wilson** (email: s.p.wilson@sheffield.ac.uk).

To ensure anonymous marking, **do not include your name** anywhere on your submission.

Writing your thesis

An excellent thesis can be written in 8,000 words. The maximum number of words permitted is 10,000 words, from start of the Introduction to the last word of the Discussion.

The word count **includes** the figure legends and citations in the text, but **excludes** the title page, abstract, lists of tables, figures and abbreviations, the references and appendices. **Any thesis that exceeds 10,000 words in sections 1 to 4, as given above, will be penalized by a 10 mark penalty from the original mark.** Thus a thesis that is 10,002 words long and would have received 72 marks on the 100-point scale, will only receive 62 marks. There is no minimum word count, but as a guide, a thesis of less than 7,000 words is likely to be lacking in detail and would therefore not score highly (note however that Einstein's PhD thesis was 24 pages long; **quality always trumps quantity**).

The style and format should be that of an expanded scientific paper, except that unlike most scientific papers, we expect that the report will often contain results and discussion of unsuccessful or inconclusive

experiments. As in a scientific paper, you are also encouraged to present ideas in an order designed to make them clear to the reader (i.e. not in which they occurred to the author, or indeed necessarily in the order in which a series of experiments were conducted).

Appropriate help in editing your thesis should be sought from your supervisor. Students will gain no credit for making mistakes through being fiercely independent. On the other hand, though your supervisor should be teaching you how to edit your text and may demonstrate how to write in an appropriate scientific style, they should not edit your thesis for you.

Your thesis should be word processed [**minimum font size 11pt**], right justified (i.e. the right hand side of the text is aligned, not jagged) and double spaced (in Microsoft Word, set line spacing to 'Double'). This is the standard for scientific manuscripts because most readers find it easier to read and to mark up.

Bear in mind that part of the purpose of writing the thesis is to train you to write clearly and concisely. As Mark Twain said – "*I didn't have time to write a short letter, so I wrote a long one instead*." – writing concisely is a valuable skill, which will gain you marks and be very valuable in your future careers. **Remember that there is also a severe automatic penalty for exceeding 10,000 words in Sections 1 to 4.**

Sections of your Thesis

The **Introduction** (30% of final thesis mark) should be self-contained, concise and (as in a scientific paper), should be entirely relevant to the actual research project.

What should be included in the Introduction?

- Background
    a) Literature review relevant to the research project
    b) Immediate findings leading to your research project. This may include unpublished work from your supervisor's group.

- Plan of investigation
    a) Your research project question and objectives of your study
    b) How are you intending to achieve these objectives?
    c) Specific a-priori hypotheses

The **Materials and Methods** section (10% of final thesis mark) should include details of all the protocols used during your project. Write this in the style that is used in scientific papers, either the active or passive voice. Do not write your Methods section in the imperative voice, as a list of instructions or a recipe book.

The **Results** (20% of final thesis mark) should include your findings, presented in a logical manner. Ensure that you and your supervisor broadly agree over the interpretation of your results. To keep your main findings as clear as possible, in some cases it may be a good idea to put raw data or preliminary experiments in an appendix, which will not be marked but can be used for reference. Remember, though, that the appendix will be excluded from the word count and so it must not contain any text beyond the minimum that is required to explain the data in the appendix.

The **Discussion** (30% of final thesis mark) is important and puts your results in the context of previous published findings.

Note how the marks are distributed across sections and tailor your thesis accordingly.

Figures and Tables

Figures and tables should be included where appropriate.

Do not be tempted to copy figures, tables or legends. **All figures or diagrams must be constructed yourself and not copied from publications.** Any copied figure will be discounted in the same way that we discount copied text. If we find significant copying of figures then disciplinary procedures may follow.

References

All references in your list of references must be cited in the text.

Make sure that your reference list is in a consistent style. NEVER WRITE ANY PART OF YOUR REFERENCE LIST IN CAPITALS.

If you are using reference manager software such as Endnote, Zotero or Mendeley (recommended, but not compulsory), you can use the *Ann Rev Neuroscience* format to produce the list of references.

Your reference list should be given in alphabetical order of first-author surnames. For papers with more than three authors, give the first three names in full, followed by "*et al.*" After the surname, include only the initials of the author.

References must include the title of the paper (minimising the use of internal capitals) as well as both the first and the final page numbers. Please see the examples below.

Journal names should be given in a standard format (i.e. all in full or using standard abbreviations) in italics. The volume number is essential and appears immediately after the journal name. Pages of the journal are identified by the first and last pages.

Example of a journal reference
> Farrow T.F.D., Jones S.C., Kaylor-Hughes C.J., et al. (2011) Higher or lower? The functional anatomy of perceived allocentric social hierarchies. *NeuroImage*. **57**, 1552-1560.

Titles of **books, reports and monographs** should be given in full. References to books include year of publication, title edition, editor(s) (if any), town of publication and publisher, in that order. When the reference is to a particular part of a book, inclusive page numbers should be given.

Example of a book chapter reference
> Farrow T.F.D. (2012). Should I strap a battery to my head? In *Should I Strap a Battery to my Head? (And Other Questions About Emotion)*. Pp. 188-200. Totterdell P., Niven K. (Eds.) Charleston, USA: Createspace Independent Publishing.

Citations of references in the text of your thesis must all be easily identifiable in a list of references after the Discussion. Citations in the text should contain **only** the family name of the author(s) and year of publication in the following styles. Make sure that you correctly identify the author's family name. PubMed will always do this for you. (Some family names may be more than word)

For two authors, use,
"...Smith and Jones (2009) have shown..."
or
"...previous work (Smith & Jones 2009) has shown...",
or for three or more authors
"...Smith *et al.* (2009) have shown..."
or
"...previous work (Smith *et al*. 2009)...".

References to papers by the same author(s) in the same year should be distinguished in the text citation and in the reference list by letters a, b, etc. (for example, 2009a or 2009a,b).

Never use an author's title, initials or first names in the text. Do not give the journal reference in the text either. "Dr BA Scott and Angelina Wang (2007, Nature) showed…" is wrong on four counts! The correct way to this cite work here would be "Scott and Wang (2007) showed…"

Automatic penalties for late submission

Late submissions (where an extension has not been requested or granted) will be accepted for up to 5 working days after the deadline, but will be penalized, as required by University regulations.

The penalty is 5% of the obtained mark for every new 24-hour period starting at the deadline.

Appendix

This appendix contains relevant forms.

End of Course Sign Out Sheet

This form is to be completed and signed by the student, approved and signed by the supervisor and returned to the Psychology admin office (either in person or by email: psypgt@sheffield.ac.uk) in order for the student to graduate. Failure to comply with this may mean examination of your MSc project is delayed.

Research Project Title:

Supervisor approval (please tick)

Any materials (e.g., recording equipment, standardised tests) returned to supervisor or to test library. Newly created stimuli passed to supervisor.
Please provide details:

Raw data (e.g., questionnaires) transferred to supervisor.
Please provide details:

Electronic data (and code) transferred to supervisor in agreed form. This will normally include raw data and the final set on which analyses were based.
Please provide details (with file names):

I confirm that all the above items/information have been returned as agreed

Student Name:_____ **Signature:** _____
Supervisor Name:_____ **Signature:**_____
Date: _____

Further details on data management can be found here:
http://www.sheffield.ac.uk/psychology/research/groups/dmsppsych

PSY6431

Guidelines for thesis markers 2019-2020

*The 'Guidelines for thesis markers' and the 'Thesis marking sheet' are provided for project supervisors, thesis markers and students so that **everyone** has a clear idea of the marking criteria.*

Please note:

[1] The written thesis accounts for 90% of the final module mark. The remaining 10% is determined through assessment of the student's oral project presentation.

[2] The module is marked out of 100. The scoring scheme is subdivided into six sections: A = Introduction (30%), B = Materials and methods (10%), C = Results (20%), D = Discussion (30%), E = Oral presentation (10%). We also collect Supervisor's comments, however these do not contribute to the final mark. Further information is available below.

[3] Markers are required to give a quantitative mark for each section (tick box) and to provide feedback justifying their mark for each category. Markers' comments will be sent electronically and verbatim to the student, so they should be helpful and informative.

CATEGORY A: Introduction [30% of final thesis mark]
- How relevant is the Introduction to the work done in the experimental programme? Does it summarise the background literature leading up to the research question?
- In an appropriate place, does the student clearly state the underlying hypothesis behind the original plan of the work?
- Has the student provided a clear description of the aims of the thesis?
- Are all explanatory diagrammatic figures completely original? (Copied-and-pasted figures should be ignored).

CATEGORY B: Materials and methods [10% of final thesis mark]
- Does this chapter clearly describe the materials and methods used (e.g. neuropsychological tests, scanner task, scan parameters, analysis techniques etc.)?
- Are the methods sufficiently detailed for the experiment to be replicated by someone else?
- Do the methods correspond to the experiments that are presented in the results chapter?
- Is there a clear rationale as to why experiments were done and the chosen methods were used?

CATEGORY C: Results [20% of final thesis mark]
- Were experiments carefully done with appropriate controls?
- Are appropriate statistical methods used where necessary?
- Are the results clearly and logically presented with appropriate emphasis on the main results and less emphasis given to subsidiary and / or non *a-priori* hypothesized results?
- Can you relate the figures and tables to the experiments?
- Do figures and tables have appropriate legends and are all figures labelled correctly?
- Are figures presented properly in the submitted version of the thesis so that any features that are described as coloured are coloured and all important features can be identified and assessed?

CATEGORY D: Discussion [30% of final thesis mark]
- Even if the work did not progress far enough to test the original hypothesis, is it clear from the write-up, that experiments were conducted on the basis of testing hypotheses?
- Does the student make it clear whether their experimental data were either consistent with or disproved the suggested hypotheses?
- How well does the student interpret their results?
- Does the student avoid over-interpretation?
- If there are other explanations for the results, is the student aware of them and do they suggest alternative explanations and hypotheses?
- Does the Discussion place the work done within a greater scientific context?
- Has the data been critically analysed in relation to the current knowledge?
- Has the student acknowledged the limitations of the study?
- Has the student suggested further valid and reasonably practical work to complete and extend the study?

CATEGORIES A, B, C & D: In awarding marks, markers should also consider:-
- Does the thesis have a logical narrative (often referred to as a 'golden thread')?
- Has the thesis been written in an appropriate scientific style?
- Is the writing comprehensible, concise and clear?
- Is the thesis divided into appropriate sections and presented so that it is easy to follow?
- Is the style of referencing acceptable for scientific work? Are references correct? Is the reference list complete and are all references cited in the text?
- If appendices have been included (optional) are these appropriate and clearly labelled?
- Does the layout and length of the thesis comply with the guidelines that students were given (e.g. word count, double spaced, lateral margins, abstract, list of contents, figures, tables and abbreviations etc.)?

CATEGORY E: Oral presentation [10% of final thesis mark]
- Did the student stick to time?
- Was the presentation appropriately divided into background, methods, results and discussion?
- Were text slides clear (i.e. not 'busy') and easy to follow?
- Were pictures, diagrams and figures used to good effect (e.g. to explain something that would be difficult to put into words)?
- Was the talk correctly pitched at an 'educated, non-specialist' audience?
- Did the talk have a clear narrative or 'golden thread'?
- Did the student clearly differentiate between results from *a priori* hypotheses and more *post hoc* interpretation and speculation?
- Did the student deal well with questions?
- Was the talk engaging and did the student convey enthusiasm for their topic?

CATEGORY F: Supervisor comments [not counted]
- How much help was given during i) early stages of the project; ii) empirical work / design / programming; iii) data analysis and interpretation and; iv) writing up?
- Motivation and enthusiasm (e.g. suggesting new ideas).
- Integration into research group. Presentation at lab research meetings etc.
- Professional behaviour (time keeping, honesty, integrity, reliability etc.)

MSc Marking Scale

ASSESSMENT GUIDELINES FOR WRITTEN WORK MARKED ON THE 100-POINT SCALE

Point 50 and above is a pass grade; Points 60-69 is a merit grade; Point 70 and above is a distinction grade.

80-100	**A potentially publishable piece of work. Doctoral-level work** ● Highest standards of critical analysis using appropriate conceptual frameworks ● Exceptional understanding of relevant issues ● Convincing and compelling arguments ● Awareness of nuances and complexities leading to formulation of novel/original research questions ● Excellent evaluation and synthesis of source material
70-79	**An excellent piece of work** ● Very high standard of critical analysis using appropriate conceptual frameworks ● Excellent understanding of relevant issues ● Clearly structured and logically developed arguments ● Good awareness of nuances and complexities ● Substantial evidence of independent research ● Good evaluation and synthesis of source material ● Relevant data and properly referenced throughout
60-69	**Good understanding. Clear throughout, however, limited original contributions** ● High standard of critical analysis using appropriate conceptual frameworks ● Clear awareness and exposition of relevant issues ● Clearly structured and logically developed arguments ● Some awareness of nuances and complexities ● Some evidence of independent research ● Some evaluation and synthesis of source material ● Relevant data and examples all properly referenced
50-59	**Not well explained in places but a generally competent answer. Some gaps in coverage** ● Uses appropriate conceptual frameworks ● Attempts analysis, but includes some errors and/or omissions ● Shows awareness of issues, but no more than to be expected from attendance at classes ● Arguments reasonably clear, but underdeveloped ● Insufficient evidence of independent research ● Insufficient evaluation of source material ● Some good use of relevant data and examples, but incompletely referenced
40-49	**Lack of understanding. Definite misunderstandings about important points** ● Weak understanding of appropriate conceptual frameworks ● Answer too descriptive and/or any attempt at analysis is superficial, containing errors and/or omissions ● Shows awareness of some issues, but also some confusion ● Arguments not very clear ● No evidence of independent research and reliance on a superficial repeat of class notes ● Superficial use of relevant data and examples purely referenced
0-39	**Little or no content of direct relevance to the topic. Complete misunderstanding** ● No appropriate conceptual frameworks ● No grasp of analysis and many errors and omissions ● Very little or no understanding of the issues raised by the question ● No appropriate references to data, examples or even class notes ● Not worthy of assessment
NC	● Not completed

PSY6431 Research Thesis Mark Sheet 2018-19

Student Reg. No: Student Name: [to be inserted after marking]
Supervisor(s):   Marker (First / Second – *please delete*):
Project title:

CATEGORY A: Introduction [30% of final thesis mark]

Comments:

FAIL				PASS			MERIT			DISTINCTION									
0	20	40	47	51	54	57	61	64	67	71	74	77	81	84	87	91	94	97	100

CATEGORY B: Materials and methods [10% of final thesis mark]

Comments:

FAIL				PASS			MERIT			DISTINCTION									
0	20	40	47	51	54	57	61	64	67	71	74	77	81	84	87	91	94	97	100

CATEGORY C: Results [20% of final thesis mark]

Comments:

FAIL				PASS			MERIT			DISTINCTION									
0	20	40	47	51	54	57	61	64	67	71	74	77	81	84	87	91	94	97	100

CATEGORY D: Discussion [30% of final thesis mark]

Comments:

	FAIL			PASS			MERIT			DISTINCTION								
0	20	40	47	51	54	57	61	64	67	71	74	77	81	84	87	91	94	97	100

CATEGORY E: Oral Presentation [10% of final thesis mark]

Comments:

	FAIL			PASS			MERIT			DISTINCTION								
0	20	40	47	51	54	57	61	64	67	71	74	77	81	84	87	91	94	97	100

CATEGORY F: Supervisor comments. FIRST MARKER ONLY

Comments:

Final thesis mark will be a weighted average of both markers' scores. In the event of a significant disagreement between markers' final grades, marks will be moderated by the module organizer, and, if necessary, a third marker will be included.