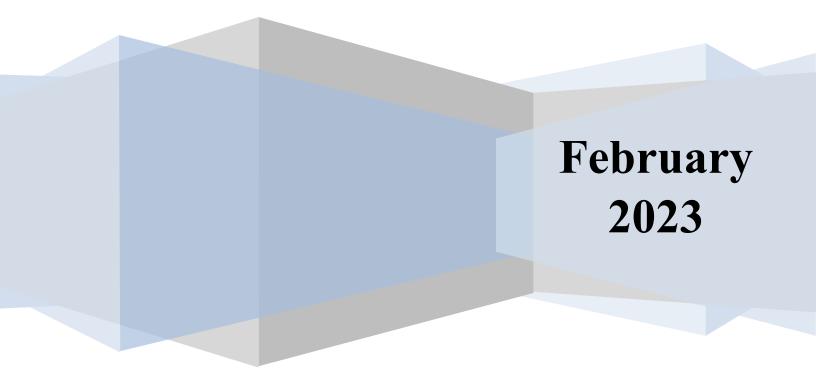
Brock University

CENTRE FOR NEUROSCIENCE

Guidelines for NEUR 4F92 – Library Research Essays



Brock University Honours Program in Neuroscience

GUIDELINES FOR NEUR 4F92 – LIBRARY RESEARCH ESSAYS

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1. NATURE OF NEUR 4F92

Students, under supervision, will carry out detailed studies of the scientific literature relating to specific topics. These studies will be carried out over a two-term (consecutive) period.

Each student much choose <u>one</u> of the following options:

(i) **Two Essays**. Students will complete two essays by the end of the course. A single essay topic will be researched **each term**. It is not necessary for the topics to be related, or that the same faculty member supervise both studies. If this option is chosen, it is recommended that the student secure a supervisor(s) for both terms.

(ii) **One Essay.** The student has the option to research (in more depth) **one** specific topic over the two terms. In this instance, one essay will be completed and only one faculty member will supervise the student over the entire duration of the course.

NOTE: A decision to pursue the One Essay Option should be made by the end of week 6 of the first term. The student should discuss this option with both their Supervisor and the Director. Should notification of pursuing this option not be given at this time, it will assumed that the student is pursuing the Two Essay Option, and submission of the first essay will be due by the end of the first term (see Deadlines for details).

Topics chosen for NEUR 4F92 must be sufficiently narrow in scope to warrant students having to undertake a critical evaluation of the topic through study of the original literature. This is also to deter students from producing only a precis of a review article or text. It will be the responsibility of the Supervisor and the Director to ensure that topics fulfill this objective.

The essay(s) should **not** consist of a large survey of the literature. It should consist of a critical, in-depth analysis of a smaller number of original research articles. Students must be critical in evaluating the selected papers and should point out any limitations in the rationale, methodology, data analysis or conclusions. They must also display some knowledge of statistical procedures used. When the evidence or conclusions described in different papers conflict, an attempt must be made to explain or resolve such differences.

Each faculty member in the Neuroscience Program is expected to participate in the NEUR 4F92 program, and will therefore indicate the areas of neuroscience in which they can provide supervision. Possible topics may be available to students on the Neuroscience website, or may be directly obtained from potential supervisors.

Each student participating in the program will be required to make their own arrangements with a supervisor. The Director and Administrative Assistant should be notified of the supervisor and topic within one week of the first day of classes, for each academic term should the Two Essay option be chosen.

2. ADMISSION TO NEUR 4F92

Eligibility: All students admitted to the Year IV Honours program are eligible to take this course.

Restrictions: NEUR 4F92 may not be taken by a student who is registered in NEUR 4F90/91.

Supervision of a student's research essay will be by mutual agreement of the Supervisor, Director, and the student.

3. RESPONSIBILITIES OF THE SUPERVISOR

- (a) Supervisors are to ensure that the topic chosen is not too broad in scope to avoid a student taking too general an approach, rather than the required penetrating and detailed study. The essay should focus on a relatively small number of key papers in a specific area which should be agreed upon by the student and Supervisor. For the Two Essay option, each essay should focus <u>in depth</u> on approximately 4 to 6 key papers (original research papers). This number should be increased to approximately 8 to 12 if the One Essay option is chosen.
- (b) Supervisors are to assist the student in developing a critical and logical approach to the analysis of scientific literature and methodology. This should be done by weekly or bi-weekly discussions of papers from scientific journals, so that the student becomes familiar with the current ideas and techniques of the subject. A rewriting of textbook chapters or review articles is not sufficient.
- (c) Supervisors, in consultation with the Director (if required), are to assist the students in the organization of the essay, and to ensure that the drafts are of a reasonable quality with respect to style, organization, and length before final submission.

4. RESPONSIBILITIES OF THE STUDENT

- (a) Students must meet all deadlines set by their Supervisor(s) and by the Director. This includes all meetings with the Supervisor(s), reading assignments, written assignments (e.g. outlines), group meetings with the Director and all other deadlines.
- (b) Although the Supervisor assists in selecting a topic and identifying key references, the student is ultimately responsible for reading, understanding, and extracting relevant information from the literature, for synthesizing that information and placing it in the context of the essay and for identifying limitations in the

published literature. The student is also expected to have sufficient background knowledge to be able to read the literature with reasonable understanding. If background knowledge is lacking, it is the student's responsibility to bring their background knowledge to a level of competency though extra reading.

- (c) For the Two Essay option, each essay should focus in depth on approximately 4 to 6 key papers with an additional ~15 papers used for background reading and understanding and for use in the Introduction/Discussion sections of the essay. This number should be increased to approximately 8 to 12 key papers if the One Essay option is chosen with ~30 papers used for background reading and understanding. These numbers are not intended to discourage the students from reading a larger number of papers. In fact, such reading will be necessary to provide a sufficient background for understanding and to help the student identify the most important or relevant articles to use as their key papers. Supervisors are to assist the students in selecting a core of key papers that, together, will form the theme of the essay. These key papers should be primary research articles rather than reviews or book chapters.
- (d) The student is ultimately responsible for composing the essay(s). The essay(s) must incorporate the student's original ideas and must reflect the student's comprehension and writing skills.

5. COURSE REQUIREMENTS

- (a) The student should have regularly scheduled meetings (preferably weekly or bi-weekly) with their supervisor. The time should be used to discuss the progress of the project and for an in-depth discussion of the topic or individual papers, if required.
- (b) All students enrolled in NEUR 4F92 will meet, as a group, with the Director at the beginning of the second semester of their research work (e.g. January for those who began research in September). At this meeting, each of the students will make a 5–10-minute oral presentation regarding the progress of their library research and will discuss some specific studies pertinent to their essay topic.
- (c) Each essay format should adhere somewhat to the following:
 - (i) Title page
 (ii) Abstract
 (iii) Table of Contents & List of Figures
 (iv) Introduction
 (v) Detailed Review and Analysis of the Literature
 (vi) Conclusions
 (vii) Experimental Proposal
 (viii) Literature Cited/References
 (ix) Appendices (if any)
 - Each essay (One or Two Essay option) should include an experimental proposal where the student has identified questions not resolved by the literature. The student will be expected to provide a hypothesis and outline details of the experimental design, and will be required to defend the design of, and feasibility of their proposal.

The format of the essay should follow an accepted outline for a journal in the field covered by the research project. Students should follow a format appropriate for the Supervisor's department.

Students should use a standard font (such as Times New Roman), 12pt, double spacing, and 1-inch margins.

6. TWO ESSAY OPTION

Normally a student will undertake one essay topic per term. The two essays that comprise credit for this course must be completed in **consecutive** terms.

Each term, an essay on the chosen library research topic is to be written and submitted as a Word document to the Supervisor and Second Reader (another faculty member) before the last day of classes of that term. The essay will normally be a synthesis of the literature relevant to the topic and is expected to be at least 20 pages in length, but no more than 30.

Each term, a final seminar will be scheduled during the examination period. The student is to formally present the findings from the literature study in a well-organized fashion using PowerPoint and lasting about 30 minutes. The seminar is open to all neuroscience students and faculty members, with a closed question period/defence to immediately follow the presentation (up to one hour).

(I) Evaluation

(a) Essay

Each of the two essays will have a value of 30% of the final grade. It is therefore in the interest of the student that the Supervisor be given a preliminary draft of the essay well in advance of the final submission date for feedback and revisions. The Director will appoint an Examination Committee consisting of the Supervisor and one additional faculty member, who will serve as Chair of the Examination Committee. The Examination Committee will then examine and evaluate the essay as submitted. Once an essay is submitted, no further revisions can be made until after the examination, at which point only minor grammatical changes are permitted.

Note: Failure to submit the essay on the deadline date will ordinarily carry the penalty of a reduced grade unless there are documented medical or comparable reasons justifying late submission. **Under rare and exceptional circumstances**, students may obtain an extension from the Director of the Centre for Neuroscience based on compassionate grounds.

(b) Final Seminar

Each of the final seminar presentations (the dates of which are to be determined by coordination of the student and the Examination Committee), will have a value of 10% of the final course mark. The seminar will be judged on criteria such as: organization, comprehensibility, smoothness of presentation, degree of familiarity the candidate shows with the topic and literature, quality of illustrative material and the fielding of questions during the general question period.

(c) Oral Examination

Each oral examination of the candidate will have a value of 10% of the final course mark. This examination will normally be held immediately following the seminar presentation and should not normally exceed one hour in duration. Questioning by committee members will normally pertain to the thesis topic, but students should anticipate questions on the theoretical bases and appropriateness of methodology used in the literature and also on the broad ramifications and significance of their topic.

(II) Deadlines

NEUR 4F92 is typically completed in two terms. However, if more time is needed, students may take an extra term to complete this course. Please see (f) below for more information.

- (a) Choice of topic and supervisor: Within seven days after the commencement of classes for each term.
- (b) Submission of the first essay draft to the Supervisor: Two to three weeks before the end of term.
- (c) Examination version of the essay: <u>Last day of classes</u>. Copies should be submitted to each member of the Examination Committee and cc'ed to the Director.
- (d) Seminar and defence: During the final examination period for each term. Date and time will be agreed upon by the student and the Examination Committee. <u>The student is responsible for arranging the thesis defence in a timely manner.</u>
- (e) Submission of **both essays** in **one** final PDF: Submitted to the Supervisor, Director and Administrative Assistant **no later** than seven days after the final date of scheduled exams of the second term.
- (f) This deadline can be extended to the end of the next semester (e.g. August for those attending convocation in the Fall); however, it is important that the student discuss this option with their Supervisor. This choice will be acknowledged by the Supervisor submitting an "IP" (In Progress) grade by the end of the second term of work. <u>The Supervisor must</u> fill out an In Progress Grade Form and send it to the Administrative Assistant.

For Supervisors: The IP grade will become the default grade should the student fail to complete their thesis requirements within the one-year deadline. As such, supervisors are advised to use the following guidelines when considering the IP grade allocated to the student after 2 terms:

- 50% concerns that the student is falling behind or may not complete the essays and/or examinations as expected within the one-year period
- 60% substantial progress has been made but there are some minor concerns about effective completion of the essays and/or examinations
- 70% substantial and excellent progress has been made and the student is on target to complete the essays and examinations within the one-year period

7. ONE ESSAY OPTION

Word documents of the final version of the essay should be handed in to the Director, Supervisor and Second Reader before the last day of classes of the second term. The essay should be at least 40 pages in length, but preferably no more than 60. <u>At the end of the first term</u>, the student will be expected to present a progress seminar to their supervisor, lasting no more than 20 to 30 minutes, which may be followed by questions and discussions (this will not be graded).

At the end of the second term, the final seminar will be scheduled during the examination period. The student is to formally present the findings from the literature study in a well-organized fashion using PowerPoint and lasting ~30 to 40 minutes. The seminar is open to all neuroscience students and faculty members, with a closed question period/defence to immediately follow the presentation (up to one hour).

(I) Evaluation

(a) Essay

The essay will have a value of 60% of the final grade. It is therefore in the interest of the student that the Supervisor be given a preliminary draft of the essay well in advance of the final submission date for feedback and revisions. The Director will appoint an Examination Committee consisting of the Supervisor and one additional faculty member, who will serve as Chair of the Committee. The Examination Committee will then examine and evaluate the essay as submitted.

Once an essay is submitted, no further revisions will be permitted until after the examination, at which point only minor grammatical changes are permitted.

Note: Failure to submit the essay on the deadline date will ordinarily carry the penalty of a reduced grade unless there are documented medical or comparable reasons justifying late submission. **Under rare and exceptional circumstances**, students may obtain an extension from the Director of the entre for Neuroscience based on compassionate grounds.

(b) Seminar

The final seminar presentation will have a value of 20% of the final course mark. The seminar will be judged on criteria such as: organization, comprehensibility, smoothness of presentation, degree of familiarity the candidate shows with the topic and literature, quality of illustrative material and the fielding of questions during the question period.

(c) Oral Examination

The oral examination of the candidate will have a value of 20% of the final course mark. This will normally be held immediately following the seminar presentation and should not normally exceed one hour in duration. Questioning by committee members will normally pertain to the thesis topic, but students should anticipate questions on the theoretical bases and appropriateness of methodology used in the literature and also on the broad ramifications and significance of their topic.

(II) Deadlines

A decision to pursue the One Essay option must be made by the end of **Week 6** of the first term. The student should discuss this option with both their Supervisor and the Director. Should notification of pursuing this option not be given by this time, it will be assumed that the student is pursuing the Two Essay option.

NEUR 4F92 is typically completed in two terms. However, if more time is needed, students may take an extra term to complete this course. Please see (g) below for more information.

- (a) Choice of topic and supervisor: Within seven days after the commencement of classes for the first term.
- (b) Progress seminar: Held during the examination period of the first term.
- (c) Submission of the first essay draft to the Supervisor: Two to three weeks before the end of the second term.
- (d) Examination version of the essay: The last day of classes of the second term. Copies should be submitted to each member of the Examination Committee and the Director.
- (e) Seminar and defence: During the final examination period for each term. Date and time will be agreed upon by the student and the Examination Committee. <u>The student is responsible for arranging the thesis</u> <u>defence in a timely manner.</u>

- (f) Submission of essay in one final PDF: Submitted to the Supervisor, Director and Administrative Assistant **no later** than seven days after the final date of scheduled exams.
- (g) This deadline can be extended to the end of the next semester (e.g. August for those attending convocation in the Fall); however, it is important that the student discuss this option with their Supervisor. This choice will be acknowledged by the Supervisor submitting an "IP" ("In Progress") grade by the end of the second term of work. <u>The Supervisor must</u> fill out an In Progress Grade Form and send it to the Administrative Assistant.

For Supervisors: The IP grade will become the default grade should the student fail to complete their thesis requirements within the one-year deadline. As such, supervisors are advised to use the following guidelines when considering the IP grade allocated to the student after 2 terms:

- 50% concerns that the student is falling behind or may not complete the essay and/or examination as expected within the one-year period
- 60% substantial progress has been made but there are some minor concerns about effective completion of the essay and/or examination
- 70% substantial and excellent progress has been made and the student is on target to complete the essay and examination within the one-year period

8. SUBMISSION OF ESSAY AND ASSIGNMENT OF GRADES

The deadline for final submission of the essay(s) is the last day of classes for each term in the case of the Two Essay option, or the last day of classes for the second term in the case of the One Essay option. This copy is to be graded, as submitted, by the Examination Committee. Failure to submit the essay(s) on the deadline date will carry the penalty of a reduced grade unless there are documented medical or comparable reasons justifying late submission or unless the Director exercises their discretionary powers. There are no predetermined penalties. Penalties are determined on an individual, cases by case basis.

Marks assigned to the essay(s) and seminars by each examiner are to be given, in writing, to the Director and Administrative Assistant immediately following the completion of the seminar and question period/defence. The Director will calculate the average mark and will submit the grade by the deadline assigned by the Registrar.

Faculty approval and disposition of the essay after the final/last seminar. When the essay has been approved by the Examining Committee (only minor grammatical changes allowed after the examination), **the candidate must submit a corrected copy** of the **one or two essays** as a <u>single</u> PDF to the Supervisor, Director for the Centre of Neuroscience, and Administrative Assistant **no later** than **seven days after the scheduled exam period.** These copies must be corrected of any errors noted by the examiners and must contain all charts, maps, figures, tables, and appendices as approved. **Any student that does not submit the final PDF on time will receive an 'Incomplete' grade for NEUR 4F92.** Grades will not be submitted to the Office of the Registrar until the final copy of the essay(s) has been submitted.

NOTE: As is the case with final grades in all courses, a student may feel compelled to appeal a final mark. In such an instance, the Director for the Centre of Neuroscience will appoint an ad hoc committee to deal with the matter.

9. NEUR 4F92 TAKEN OUTSIDE OF THE NORMAL ACADEMIC YEAR

NEUR 4F92 may also be taken either during the Winter (January to August) or Spring (May to December) terms. All regulations apply with the exceptions of the deadline noted below. In the case of the **Winter term**, students would begin on **January 1**st and would submit the final essay by **August 7**th or, if on a weekend, on the following Monday. **Spring term** students would begin on **May 1**st and submit the final essay by the **last day of classes in December**. The final seminar and question period/defense will take place in a two-hour period within two weeks of the submission date of all essays and prior to the end of the exam period in those terms.

Please note that students registering in a January to April cohort will be required to re-register in May as per the Registrar's guidelines. An "IP" grade will be entered in April.

Under special circumstances, the course may also be taken during a single term. In this case, the student must have the approval of the Director for the Centre of Neuroscience and the Supervisor(s) involved, before enrolling in the course.

APPENDIX

A. ADMISSION TO YEAR IV PROGRAM – 3 FORMS

a. Application to Year 4 Studies

b. Override for NEUR 4F92

c. Intellectual Property Form

B. NEUR 4F92 GRADE SHEET

C. IN PROGRESS GRADE FORM

N.B. ALL FORMS ARE TO BE SUBMITTED ELECTRONICALLY AND ARE AVAILABLE FOR DOWNLOAD AT <u>https://brocku.ca/mathematics-science/neuroscience/student-resources/</u>



Office of the Registrar

Application to Year 4 Studies (Honours only)

1812 Sir Isaac Brock Way St. Catharines ON L2S 3A1 T: 905.688.5550 F: 905-988-5488 www.brocku.ca/registrar

Name: Local Telephone Number:						
Protection of Privacy: Brock University gathers and maintains information used for the purpose of admission, registration and other fundamental activities related to being a member of the University community and to attending a public post-secondary institution in the Province of Ontario. In signing an application for admission, you should know that the information you provide and any other information placed into your student record, will be protected and used in compliance with Ontario's Freedom of Information and Protection of Privacy Act (R.S.O. 1990, c F31). The information on this form is collected under the authority of The Brock University Act, 1964 and is needed to verify qualifications and decide your eligibility for admission. Upon admission and registration this information will form part of your student record and will be used to document your progress in an academic program. If you have any questions about the collection, use and disclosure of your personal information by the University, please contact the Director of Admissions, Brock University, St. Catharines, Ontario, L2S 3A1, (905) 688-5550.						
Degree sought: (circle one)	BA BSG	c BRLS	BPH			
Major: Single:						
Combined:		and _				
Signature:		Date:				
Approved Denied						
Department/Centre Signature:			Date:			
Comment if denied:						
OFFICE USE ONLY						
Signature:		Date:				



CENTRE FOR NEUROSCIENCE

OVERRIDE FOR NEUR 4F90, NEUR 4F91 AND NEUR 4F92 STUDENT/FACULTY AGREEMENT FORM

Name	:	Sig	nature	:				
Student Number:			Telepł	none Numbe	er:			
Email	Address:							
Date:								
Topic:								
Super	visor's Name:	·		_ Signature):			
rm:	🗌 Fall	☐ Winter		Spring				
Year:								
CC	DURSE	NUMBER	DUI	٦	SEC		DINATOI NATURE	
١	NEUR	4F90						
٩	NEUR	4F91					me/Signa	
٢	NEUR	4F92				Print nar	me/Signa	ature
				_		Print nai	me/Signa	ature
for the Centre for Neuroscience MC F218;				system after		ng the web regi as been proces n.		
This form is to be completed after your application to Year 4 Studies has been signed, accepted and in your file at the Office of the Registrar updated.			have met an	d discussed a EUR 4F90/91 i	t you and your s mutually agreea thesis or a NEU	able		
For F	orms and Guideli	nes visit: <u>https://brocku</u>	u.ca/math	nematics-scienc	e/neuroscience/	student-resource	<u>s/</u>	



BROCK UNIVERSITY INTELLECTUAL PROPERTY FORM

Please complete this form and return one copy with signatures to the Office of Research Services prior to commencing any research under the auspices of Brock University.

Student Name:				CENTRE FOR NEUROSCIENCE		
Student Number:		Email:			Telephone ()	
	NEUR 4F90		NEUR 4F91		NEUR 4F92	

I have read the document "Ownership of Student-created Intellectual Property" and agree to comply with the Brock University's guidelines on Intellectual Property contained therein.

Research results. I acknowledge that a complete set of all original research data will be retained by the Principal Investigator for the period of at least 5 years or for 5 years from the date of publication of results based on the data, and that research collaborators will have free access to the relevant data at all times. Unpublished data are regarded as confidential.

Authorship Acknowledgment. I understand that all members of the research group are responsible for ensuring proper acknowledgement of each member when that data are released in any form. The inclusion of Student's name as a full co-author or as an acknowledged participant in the resulting publication, if any, is in the discretion of the Principal Investigator and is dependent on the magnitude and merit importance of the Student's contribution.

Order of authorship. If the results can be published, I also recognize that the order of names on publication is dependent on the contribution made by each individual involved in the research in terms of conceptualization, development of research design, data collection, data analysis, data organization and interpretation, and writing the manuscript. I acknowledge that discussion about explanations regarding order of authorship with Principal Investigator should be updated at the end of the project so that everyone's understanding and expectations with respect to acknowledgements are discussed after completion of the project but prior to publication.

If some specific understanding regarding intellectual property or order of authorship has been reached that is not covered in the above principles, please indicate that below.

Researcher's Signature	Date:
Supervisor's Signature	Date:
Co-Supervisor's Signature	Date:

RESEARCH STUDIES

Approval (red	quired if specific arrangements are proposed)		
Associate Vic	e-President Research:	Date:	
Copies to:	Centre for Neuroscience and Research Services		



CENTRE FOR NEUROSCIENCE 4F92 GRADE SHEET – Two essay option

Student name and ID:		
Supervisor:		
Signature:		
2 nd Reader/Committee me	mber:	
Signature:		Date of thesis
defense:		
Please indicate: Dessay	_	
Please indicate: Dessay	_	Committee member
Please indicate: Dessay	one essay two	
Please indicate: Dessay	one essay two Supervisor	Committee member

TOTAL:____(100%)

NOTE: Grades for essay 1 and 2 will be averaged for one combined final NEUR 4F92 grade

PLEASE HAND IN AN COPY TO THE NEUROSCIENCE DIRECTOR AND ADMIN ASSISTANT Gaynor Spencer MC F222 <u>gspencer@brocku.ca</u> Nicole Mooney (Admin Assistant) MC F218 <u>nmooney@brocku.ca</u>



CENTRE FOR NEUROSCIENCE 4F92 GRADE SHEET – ONE ESSAY OPTION

Student name and ID:	
Supervisor:	
Signature:	
2 nd Reader/Committee member:	
Signature:	
Date of thesis defense:	

GRADES

	Supervisor	Committee member
Essay:	(30%)	(30%)
Final Seminar/Defence:	(10%)	(10%)
Oral Examination:	(10%)	(10%)

TOTAL:____(100%)

PLEASE HAND IN AN COPY TO THE NEUROSCIENCE DIRECTOR AND ADMIN ASSISTANT. Gaynor Spencer MC F222 <u>gspencer@brocku.ca</u> Jennifer Smith (Admin Assistant) MC F218 jsmith2@brocku.ca

Revised Feb 2022



Office of the Registrar

1812 Sir Isaac Brock Way

St. Catharines ON L2S 3A1

T: 905.688.5550 F: 905-988-5488 Ex: 3099 www.brocku.ca/registrar

Report of an In Progress(IP)Grad

BROCK STUDENT ID NUMBER	SUBJECT NUMBER
Name:	DURATION
	Check one:
inititial registration in the course, the stude course fee. (FHB III: 10.3, note 2)	s not been lifted within twelve months of the ent must re-register and pay the appropriate
Should the student not complete the required work with grade should be listed as the final grade:	in the allowed time period, the following
Instructor's Signature Chair's/Director's Signature	Date Date
Effective date of change Signature	SP SU FW YEAR