

## NEUR IS Contract 2013-2014

I, \_\_\_\_\_ am prepared to undertake my senior Independent Study with a good attitude and a willing spirit! I do understand that research is 90% about effort and stick-to-it-tiveness and 10% about success, and will not give up even if things don't work the first 42 times.

### **I understand that meeting the following deadlines is necessary, but might not be sufficient, to pass NEUR451.**

- 1) I will come prepared for weekly meetings with my advisor. I will turn in a one page summary of my weekly accomplishments and remaining questions, including the number of hours I devoted to IS, at the beginning of every IS meeting, all year long.
- 2) I will turn in a preliminary schedule of deadlines to meet by the week of September 9th 2013.
- 3) Along with this schedule, I will plan out my time management schedule for IS specifically, so that I do not allow other courses and assignments with immediate deadlines to consistently push IS to the bottom of the list. There will be at least 10 hours each week that I devote only to IS.
- 4) I will turn in annotated bibliographies of the 10 most important articles by the week of September 16th to guide the discussion we have about my project.
- 5) I will turn in an edited version of the Introduction by the week of September 30th, 2013.
- 6) I will turn in a complete draft of Methods by the week of October 14th, 2013.
- 7) If I want to have a final version of my Intro and Methods reviewed for comments, I will turn it in by November 21st, 2013 at 5 pm.
- 8) **I will turn in a final 20-page version of Introduction and complete Methods by December 6<sup>th</sup>, 2013 at 4 pm.** It will have a title page, full Intro and Methods and References, all double-spaced and stapled together. **At that time I will also complete a statistical analysis plan to indicate that I have thought through my data set and decided how to best analyze it.**
- 9) I will begin collecting data by November 11th, 2013 at the latest so that data collection is at the very least begun, if not completed, during Fall semester. If I am not able to accomplish this, I will discuss alternatives with my advisor, and create an alternative schedule for the work.
- 10) I will take responsibility for organizing, scheduling and keeping all data collection activities in some version of a laboratory notebook. I will bring this notebook to my meetings as necessary.
- 11) I take full responsibility for maintaining confidentiality and/or anonymity of all research participants, their responses, opinions and involvement in my study.
- 12) I will clean up after my own messes and those of unknown origin that appear in classroom or lab space while I am collecting data.

I understand that a failure to do these things may result in a grade of either Incomplete, or of NC (no credit) and that either of these grades may necessitate me taking 451 again in the spring and coming back in the fall of 2014 to complete 452.

I understand that a failure to accomplish a satisfactory amount of my research goals (set by myself and my advisor, see #2 & 9 above) will also result in either an Incomplete or an NC grade for 451.

I understand that any form of cheating will not be tolerated, by my advisor(s), by the College, or by the scientific community. I understand that any incident of cheating will result in consequences that may include failure of the course as well as expulsion from the college. I understand that cheating includes any sort of scientific fraud, misrepresentation of data, and plagiarism, whether willful or otherwise.

I understand that depending upon the progress of my project, I may be required to spend part of my winter break completing my research, and that failure to do so may result in my inability to complete this project to the satisfaction of my advisor, the department, and/or the College of Wooster.

Student \_\_\_\_\_

Date \_\_\_\_\_

Advisor \_\_\_\_\_

Date \_\_\_\_\_

## Syllabus: Senior IS (451-452) 2013-2014

Your senior IS should be a joint venture between the two of us. Your job is to drive and navigate. My job is to watch for potholes and keep you headed in the general direction of a successful completion. If I were to solve all of your problems and micromanage your project for you then the word “Independent” would not be stuck right before the word “Study”. Therefore, do not expect that I will point out every wrong turn you make as long as you are headed in the general direction of success. If you run into a problem, come talk to me, but come with a couple of possible solutions for the problem. Being able to be your own problem solver is one of the most important aspects of being a good researcher. If you work hard and think hard about your project, both of us will come out of this experience being proud of what you have accomplished.

The purpose of this course is to help you complete your senior independent study project. Because this is an IS project in neuroscience, your project will include a review and critical examination of the literature in your area of study, the formulation of a testable hypothesis, a description of the methods used to test your hypothesis, collection and analysis of data, and a discussion of the meaning, implications, and limitations of your research.

By the end of this project, you should be an “expert” in your area of study.

### IS Assignments (see IS contract and schedule as well):

1. You will go to see someone in IT and learn how to use your Novell space. This is a server that has space saved on it just for you as a back up to your computer. I know of some students with hard-drive crashes and if their data and drafts had been backed up on a system like this it would not have hurt them at all. Therefore, you will learn to use it ASAP and then you are REQUIRED to back-up your IS drafts, analysis, etc at least once per week.
2. Find at least 10 dedicated hours each week that you will devote to IS and block them out on your calendar/schedule immediately – don’t let alternative activities take this time away.
3. ASAP: Complete an ethical review form.
  - a. As soon as possible in the semester complete a human ethical review form. This must be completed and approved before any experimentation can begin. To be able to do that you have finalize the methods of your project. Therefore working on your methods (i.e., selecting the task, questionnaires, etc) is of the utmost importance and should be done as early as possible.
4. Due during our meeting the Week of September 2<sup>nd</sup>.
  - a. You will need to come prepared to talk about your IS project – what got you interested in it, what questions you are most interested in, why, where will this research lead, where did the methodology come from...
5. Due during our meeting the Week of Sept 9<sup>th</sup>.
  - a. If you intend to continue your Jr IS project, a 5-page summary of that thesis is due. Present a brief summary of the main articles influencing your project and main hypothesis, and your present methods in as much detail as possible. In addition, include a one page rationale for WHY this is a meaningful and important study. Give me a photocopy or electronic copy via email of the 2 most important articles relating to your thesis that I should read.
  - b. If you want to begin with a new topic, bring 5 journal article summaries, each 2 pages in length, beginning with a statement of why each article is important to your hypothesis and some rationale for where you think this project is going in terms of a research question.

6. For the entire year: Follow the publication of new articles related to your topic.
  - a. By the week of Sept 16<sup>th</sup>, you should have an annotated bibliography of the 10 most important articles.
  - b. By the week of Sept 23<sup>rd</sup>, you will use Social Science Citation Index to turn in a list of articles that cite one of your 5 most important articles influencing your hypothesis. (If you don't know about Social Science Citation Index – ask me and then see a Reference Librarian.)
  
7. In the week of November 18<sup>th</sup>, you should plan to turn in AT LEAST one full draft of the Intro and one of the Methods for my review and comments. However, it would be much better if I saw several drafts before the final copy at the end of the semester. Your introduction needs to read like a real background and significance, not an annotated bibliography. That means that you must integrate the research papers to create your argument and support for your hypothesis.
  
8. Methods
  - a. Before you begin any data collection: You must write out as detailed a method as possible in bulleted or numbered format for your IS. This should include a step-by-step procedure from recruiting participants through your planned statistical analyses. This bulleted document is not for inclusion in your IS, but is meant to be a “standard operating procedure” document that we can use to follow your progress and plan out all necessary steps.
  - b. GET ORGANIZED - Obtain a three ring binder for keeping your articles, protocols, notes, records, participant sheets, and anything else that you should have within arms reach throughout the semester.
  - c. We will go through your protocols and discuss good laboratory practices (e.g. experimental control, confounding variables, participant recruitment, etc.) several times throughout the semester.
  - d. You will also obviously need an actual Methods section (see due date on contract) for inclusion in your IS. Remember, the Methods need to include enough detail that another researcher could replicate your experiment from this one document, but you can assume a working knowledge of the field and topic area.
  
9. Confidentiality

Any IS that involves the collection of data from other College of Wooster students must be conducted with the utmost respect for the confidentiality that ethical research participation promises the participants. You may not disclose any responses from participants, the names or distinguishing characteristics of participants and in no way should you show favoritism, friendship or otherwise to participants during participation. You must act in a professional manner and similarly for all participants in order to collect meaningful and untainted data.
  
10. Equipment

You are responsible for the working order of any equipment that you use during IS data collection. This can range from a measuring tape, to a computer in a lab, to video equipment, to a single electrode, or to the EEG recording equipment. Whatever you are using, you are responsible for. This means that if something is broken, lost or no longer functional, it will become your financial responsibility to replace or repair it before you will receive a grade for your IS.

#### ***4 Golden Rules for I.S.***

1. Don't listen to other students (within reason). Each IS advisor has different instructions and expectations for each student. Just because your friend is required (or is not required) to do something does not mean that the same thing applies to you. When in doubt, check with me.
2. Don't get behind. Missing deadlines or handing work in late is cause for failing IS. It's also cause for you getting gray hairs, bags under your eyes, a serious caffeine addiction and significant stress that is unnecessary if you keep up with the work. If you fail, you will likely not be able to complete IS until the next academic year. (You don't want to have to do that).
3. Plan IS like a class – NOT like a one-hour weekly meeting. Carve out specific time in your weekly schedule to work on writing, researching, actual experimentation, all throughout the semester. Do not try to fit this in between your other responsibilities, IT WON'T WORK!
4. Don't get in over your head. Choose a project that is manageable and that can be completed well in only two short semesters, which is really only 20 weeks IF you start the project the day you step on campus.

*I am looking forward to working with you and helping you to create the best thesis you can!*

See next page for schedule

**Schedule (includes all of the above mentioned deadlines and assignments)**

<b>Week of</b>	<b>Deadlines, see IS contract</b>	<b>Important steps</b>	<b>Keep in mind</b>
26-Aug		Group meeting	
2-Sep	Come to individual meeting to talk about your IS		
9-Sep	Schedule of deadlines		
16-Sep	Annotated bibliography of 10 most important articles	Finalize methods	
23-Sep	List of articles citing one of your 5 most important articles		
30-Sep	Draft of Introduction	HRSC / Programming	
7-Oct	Bulleted Method section for programming, experimenting, and HRSC	Learning about EEG	Fall Break
14-Oct	Draft of Method	Learning about EEG	
21-Oct		Begin data collection	
28-Oct			
4-Nov			
11-Nov	Latest time point to begin data collection	Learn about analyzing EEG data	
18-Nov	Final version of Intro and Method if feedback desired		
25-Nov		Begin data analysis	Thanksgiving
2-Dec	12/6 4 pm Draft of Intro, Method, and Refs due	Done with data collection	
13-Jan		Continue data analysis	
20-Jan			
27-Jan		Write Results Section	
3-Feb			
10-Feb		Write Discussion Section	
17-Feb			
24-Feb	Final draft of Senior IS due if feedback desired		
3-Mar			
10-Mar	Feedback on Senior IS	Incorporate feedback	Spring Break
17-Mar			Spring Break
24-Mar	Senior IS due 5 pm		
25-Apr	Senior Research Symposium		