Course Outline
Psychology 3LL3 - General Experimental Laboratory

Instructor: Bob McDonald rvmcdonald@wlu.ca
Lectures: Tuesday 7:00 - 10:00 pm, MDCL 1010
Office Hours: TBA

Teaching Assistants
Meredith Young youngme2@mcmaster.ca
Office Hours: TBA
Matt Collins collinwm@mcmaster.ca
Office Hours: TBA

Course Web Page
Lecture slides, assignments and other course-related documents are posted on the following web page:


Course Description
The purpose of this course is to provide students with experience in the design, conduct and communication of scientific research. The scientific method has demonstrated itself to be a highly useful approach to the acquisition of knowledge. The usefulness of this method, however, depends on a clear understanding of the basic principles on which the method is built. In this course we will cover several topics that relate directly to the conduct of research in psychology, including experimental design, data analysis and hypothesis testing, experimental ethics, and written and oral communication of research results.

Course Content
The main concepts of the course will be illustrated by discussing several areas of research in psychology, both past and present. Important concepts will be reinforced through in-class demonstrations where students will serve as both experimenters and subjects. The first half of the course will consist of lectures and demonstrations illustrating important research-related activities. Mastery of these activities will be assessed with a series of three assignments. The second half of the course will focus on the design and conduct of group research projects. Each group will give an oral presentation of their research results to the class. In connection with this research project, students will also individually submit an ethics review application for the project, write a research proposal, and write a report of the final results of the research project.
Evaluation

Assignments 30%
Ethics Application 10%
Research Proposal 20%
Group Research Presentation 15%*
Final Research Report 20%
Attendance 5%

* - all members of each group will receive the same grade for the presentation

Note: All written submissions must be submitted in electronic form to the instructor at rvmcdonald@wlu.ca by 5 pm on the due date.

Assignments

Three assignments worth 10% each will be given during the first half of the course (see schedule below). These assignments are intended to provide experience with various research-related activities that will be relevant to the group research projects conducted in the second half of the course. Topics covered in the assignments include experimental design, literature review, graphic presentation of data, and data analysis using SPSS.

Ethics Application

All research at any university must be approved by an Ethics Review Board. The process may vary slightly from one institution to another (and, in fact, there is usually a separate process for reviewing work with animal models), but the basic ethical principles governing research in Canada are found in the Tri-Council Policy Statement. The Tri-Council (NSERC, SSHRC, & CIHR) funds the majority of basic research and requires that all supported research be conducted in an ethical manner. Various issues relating to ethics in research will be discussed in lectures. The Tri-Council Policy Statement, along with a tutorial, can be found at:

http://www.pre.ethics.gc.ca/english/policystatement/policystatement.cfm

Each student will complete an ethics review application based on the group project (note that these applications are to be completed individually). The ethics review application form is located at:


Research Proposal

While the ethics review process is intended to ensure that research is conducted in such a way as to protect the rights of everyone involved, it is not intended to evaluate the actual merit of the research. Whether or not the research is useful and/or interesting is typically decided through the process of
peer review. The peer review process, where other established experts in a particular area review a project and evaluate it, generally occurs in two situations: a) an application for research funding and b) the publication of research results. A research proposal is generally required in the first case, and is similar in format to a research report, although it does not include any actual new data or analysis. Each student will submit a research proposal with regard to their group research project that reviews the relevant literature, and builds a case for a particular hypothesis and methodological approach. All written reports are to be prepared using either Word or WordPerfect using 12 point font and double spaced. Further information on the formatting of these proposals will be covered in lectures. The maximum length of these proposals is 4 pages (not including title page, references, appendices, figures, or tables). Again, these proposals are expected to be the work of the individual.

Some useful links providing information on writing research proposals:

http://www.mcmaster.ca/ors/guide/guide_proposal.htm
http://www.nserc-crsng.gc.ca/programs/winprop_e.htm
http://www.queensu.ca/vpr/keepnserc.htm

Group Research Presentation

The best research is useless if it is not communicated effectively to the rest of the scientific community (communicating it effectively to the general population is another matter). In addition to allowing academics to jet off to nice places, scientific conferences are a key method for exchanging new information with other researchers. The two methods most often used to disseminate this information are the poster and the research talk. All students in this course will participate in giving a brief (20 minute maximum) research talk based on the group project during one of the final lectures. Note that the 20 minutes refers to the length of the entire group's presentation, not the individual contributions. As with other scientific conferences, time is a highly valuable and tightly controlled commodity, so the time limits will be strictly enforced. Grading of the talk will be based only on what is presented within the time limits, so some rehearsal is recommended to ensure your group can present all the necessary information efficiently. You also need to remember to leave a few minutes for questions from your audience at the end of the talk.

It is expected that each member of the group participate equally in the presentation (i.e., each group member will present part of the talk). While some group members may be more comfortable in front of an audience than others, it is important for each member to contribute. All group members will receive the same grade for the presentation, and obvious lack of participation by one or more group members will be reflected negatively in the overall grade. Further, it is expected that the rest of the class will ask questions when appropriate
Final Research Report
In addition to presentation of results at conferences, most researchers publish papers based on their research in professional journals, which allows their work to become part of the permanent record available to any current or future researchers. Scientific writing involves presenting large amounts of information in a very compact and standardized format (space in journals is at a premium). More information on the format of these reports and techniques for communication of experimental data will be covered in lectures. Each student will also submit an individual research report based on the group project. These reports will involve a brief review of the relevant literature, description of methodology, and analysis and summary of the data obtained. The maximum length of these reports is 6 pages (not including title page, references, appendices, figures, or tables).

Some additional resources to assist with report writing can be found at:

http://www.psywww.com/tipsheet/labrep.htm
http://www.psych.upenn.edu/~baron/labrep.html

General Notes on the Group Project
The majority of the grade in this course is based on the group project. The research question that each group chooses to pursue is open, with the restrictions that all data must be obtained within the class (i.e., you will collect your data from other students in the class, in return for which you are expected to participate as subjects in your classmate’s studies). This has several implications, the first of which is with regard to attendance. It is critical that you attend regularly in order to fulfill your obligations to the rest of your group and to the rest of the class. The 5% of your final grade based on attendance will be in jeopardy if it becomes evident that you are not pulling your weight as part of your group or the class as a whole.

General Statement on Missed Deadlines
There are no deferrals or extensions of due dates available for any reason in this course. If documentation of a legitimate reason for absence is provided in cases of a missed deadline, the remaining components of the course will be reweighted at the instructor’s discretion.

Readings
There is no required text for this course, although you may wish to consult a methodology or statistics text (there are several good ones out there). You will be required to read a number of research articles, which will be available through the library system.

Academic Dishonesty notice from the Dean’s Office
Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g. the grade of
zero on an assignment, loss of credit with a notation on the transcript (notation reads: “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from university. It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty please refer to the Academic Integrity Policy, specifically Appendix 3, located at http://www.mcmaster.ca/senate/academic/ac_integrity.htm

The following illustrate two forms of academic dishonesty:
1. Plagiarism, e.g. the submission of work that is not one’s own or for which other credit has not been obtained.
2. Improper collaboration in group work. Attention is drawn to the Statement on Academic Ethics and the Senate Resolutions on Academic Dishonesty as found in the Senate Policy Statements distributed at registration and available in the Senate Office. Any student who infringes one of these resolutions will be treated according to published policy.

Message from the Chair of Psychology
The instructor cannot be responsible for returning long distance calls from students. Any student wishing to reach an instructor is invited to e-mail the instructor.

Final Grade:

A+ 90-100%; A 85-89; A- 80-84; B+ 77-79; B 73-76; B- 70-72; C+ 67-69; C 63-66; C- 60-62; D+ 57-59; D 53-56; D- 50-52; F 0-49%.

The instructor reserves the right to adjust final marks up or down, on an individual basis, in light of special circumstances and/or the individual's total performance in the course. Furthermore, the instructor reserves the right to change the weight of any portion of this marking scheme. If changes in the marking scheme are made, your grade will be calculated using the original weightings and the new weightings, and you will be given the higher of the two grades. At the end of the course, the grades may be adjusted, but this can only increase your grade and will be done uniformly. The instructor will use the grade equivalence chart of your calendar to convert between letter grades, grade points and percentages.
**Schedule**  
*Note that this schedule is tentative and subject to change*

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Course Content</th>
<th>Deadlines</th>
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<tbody>
<tr>
<td>1</td>
<td>Jan 9</td>
<td>introduction, the scientific method</td>
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<tr>
<td>2</td>
<td>Jan 16</td>
<td>experimental design</td>
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<tr>
<td>3</td>
<td>Jan 23</td>
<td>scientific writing</td>
<td>Assignment 1 - design (beginning of class)</td>
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<td>4</td>
<td>Jan 30</td>
<td>statistics, using SPSS</td>
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<td>5</td>
<td>Feb 6</td>
<td>literature review</td>
<td>Assignment 2 - SPSS (beginning of class)</td>
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<td>6</td>
<td>Feb 13</td>
<td>research ethics, planning research projects</td>
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<td>7</td>
<td>Feb 20</td>
<td>“Reading” Week</td>
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<td>8</td>
<td>Feb 27</td>
<td>planning research projects</td>
<td>Assignment 3 - lit review (beginning of class)</td>
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<td>9</td>
<td>Mar 6</td>
<td>data collection</td>
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<td>10</td>
<td>Mar 13</td>
<td>data collection</td>
<td>research proposal (beginning of class)</td>
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<td>11</td>
<td>Mar 20</td>
<td>data collection</td>
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<td>12</td>
<td>Mar 27</td>
<td>presentation skills, data analysis workshop</td>
<td>ethics application (beginning of class)</td>
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<tr>
<td>13</td>
<td>Apr 3</td>
<td>group research presentations</td>
<td>research report (due by 5 pm Fri. Apr. 6)</td>
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