This series of lectures will explore the question:

What are the neuronal processes that mediate visual perception?

The role of the single neuron in visual perception is slowly resurfacing as a central concern of modern neuroscience, offering insights into psychological phenomena like human decision-making, awareness and maybe even consciousness. I will give a brief history of the approach some call the neuron doctrine. This history will motivate our course, and also provide a means to evaluate alternative approaches to brain science, like functional neuroanatomy. Now comes the meat of our course, which consists of two sections.

**Part One**

Theory and methodology will be the focus here. I will lecture on signal detection theory (the behavioral science part of this course), and also some cell physiology (the brain part). Both topics of this section will be taught so that you can understand and evaluate the research articles that we will discuss in the second section of this course. For this section, you will be given two take-home exams that will test your knowledge of the lecture material. The first and second exam will be worth 20 and 30 percent of your grade, respectively. Exam format will be short answer and essay, and you will be marked on the clarity, in addition to the accuracy and completeness of your answers. Most weeks there will be assigned reading material to supplement the lectures. You will be tested on this material also. These articles have not been assigned yet. I apologize for the delay.
Part Two

Specific results & their interpretation will be the focus here. A series of 4 to 5 research articles will be assigned and covered in the next set of lectures. Your job will be to write a proposal for a novel experiment that is based, in part, on the articles I describe in lectures. In fact, the lectured articles will form a necessary part of your report’s bibliography. The rest of the bibliography, of course, will depend on your own ideas. The written report will be worth 40% of your grade, and will be due the last day of class. The final 10 percent of your grade will be based on a short presentation of what you plan to write about in your proposal. We will be listening closely to your presentations to make sure that your proposal idea is feasible, and demonstrates an understanding of the lecture articles. However, the clarity and precision of your communication will be evaluated for all assignments and tests in this course.

Details

Class schedule

Beginning September 13 we meet every Wednesday morning in room 117 of Burke Science Building, from 9:30 to 11:20, and every Friday morning from 9:30 to 10:20. A weekly, topical schedule, including exam dates and assignment deadlines will be provided ASAP.

Consultation by appointment only

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Reading material.

The text book listed for this course (available at Titles) is the 2nd edition of Cognitive Neuroscience and Neuropsychology by Marie T. Banich (2003). This text book is optional. The only required readings will be provided by myself on the internet. These required readings have not been posted yet. Apologies.
The rules.

Once the exams have been scheduled (by the first day of class), those dates will be fixed; e.g., the exams can only be written at the scheduled times, so plan to attend. Normally, there can be no make-up tests or special sessions for any student. Students with valid reasons for missing a midterm test or assignment deadline must consult the Dean of Studies office for their faculty (e.g. Science or Social Science). If (and only if) there is adequate written justification for approval by that office, grades will normally be proportionately reweighted, increasing the relative contribution of the other components. The exams will consist of short answer and essay questions. Any supplementary test or examination may be in a format that differs from that given during the normal sessions, and may consist of entirely essay questions. Grades will be assigned according to the following convention: 90-100% = A+, 85-89% = A, 80-84% = A-, 77-79% = B+, 73-76% = B, 70-72% = B-, 67-69% = C+, 63-66% = C, 60-62% = C-, 57-59% = D+, 53-56% = D, 50-52% = D-, 0-49% = F. Appeal procedures for midterm tests are strictly structured, as will be explained by the instructor. Attention is drawn to the Statement on Academic Ethics and the Senate Resolutions on Academic Dishonesty. 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 the 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/univsec/policy/AcademicIntegrity.pdf