

Introduction to Computational Neuroscience

Winter Term 2021

Weekly Assignments (50% of total grade)

Most classes will include a programming lab, to be completed at home. A brief report of the completed assignment should be turned in by email (christopher.pack@mcgill.ca) before the beginning of the following class. **Do not send the reports directly to the lecturer.** The report should include figures indicating the results of simulations or analyses, as well as a narrative indicating what was done to obtain the results. The text should include sufficient information to demonstrate comprehension of the assignment but can otherwise be brief. Matlab code should also be included with the report.

Late assignments will be penalized 5% per day.

Term Paper (50% of total grade)

The topic can be drawn from subjects covered in class or from other topics related to computational neuroscience. **The paper can consist of an extensive literature review** (e.g., comparing and contrasting different models of a particular brain function) or **an exploration of a particular model via simulation** or mathematical analysis. Because this is a computational course, the paper **must deal with mathematical aspects of models**, rather than merely summarizing the results of different papers.

- 1) The following elements are considered important:
 - a) Structure: presentation and organization;
 - b) Depth of understanding;
 - c) Critical examination: correct pick of literature to illustrate problem, evaluation of different contributions to the clarification of the problem being considered, etc.;
 - d) Original Ideas: novelty in approach, selection of ideas, insight, etc.;
 - e) Figures (cite sources), references, style, grammar.
- 2) Term Paper to be handed in on the last meeting of year. If late, deduction of 5%/3 days.
- 3) On the last day of the course each student will give a brief (10 min.) presentation related to his or her term paper. This will count for 10% of the grade on the term paper.
- 4) **Hand in on first class after study break a one-page proposal including key references.**
- 5) Avoid tendency to include every fact available. Do not produce a list of facts or observations. Rather, digest information and present well-selected key pieces of the puzzle.
- 6) Choose figures carefully and explain them well in the text, with clear legends, number figures consecutively.
- 7) Suggested length: 20-25 pages double-spaced including figures (but not single-spaced references).