DALHOUSIE UNIVERSITY

Faculty of Computer Science

NESC 4177: Theoretical Neuroscience & CSCI 6508: Neurocomputing

1 Instructor Information

Instructor:	Thomas Trappenberg
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Office Hours:	Write email for appointment
Course Homepage:	www.cs.dal.ca/~tt/CSCI650811

2 Course Description

This course is an introduction to computational neuroscience and brain style information processing and includes an introduction to the MATLAB programming environment and some required mathematical background.

3 Course Outline

Week 1: Intro and overview
Week 2: Matlab and ODE primer
Week 3: Membrane potentials and spikes
Week 4: Simplified neurons and population nodes
Week 5: Synaptic plasticity
Week 6: Random networks
Week 7: Feedforward networks

Week 8: Study Break
Week 9: Project discussions
Week 10: Competitive networks
Week 11: Point attractor networks
Week 12: Modular models
Week 13: Hierarchical models
Week 14: Project presentations

4 Required Texts

There is no required text for the course, but the course covers the material in Fundamental of Computational Neuroscience, 2nd edition, Thomas Trappenberg, Oxford University Press.

5 Evaluation

- 30% Assignments, 30% Tests, 40% Project
- Grades will be assigned using the letter grade scale as defined in section 17.1 of Dalhousie Academic Calendar.

6 Academic Integrity[1]

At Dalhousie University, we respect the values of academic integrity: honesty, trust, fairness, responsibility and respect. As a student, adherence to the values of academic integrity and related policies is a requirement of being part of the academic community at Dalhousie University.

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[1]Based on the sample statement provided at http://academicintegrity.dal.ca. Written by Dr. Alex Brodsky.

What does academic integrity mean?

Academic integrity means being honest in the fulfillment of your academic responsibilities thus establishing mutual trust. Fairness is essential to the interactions of the academic community and is achieved through respect for the opinions and ideas of others. Violations of intellectual honesty are offensive to the entire academic community, not just to the individual faculty member and students in whose class an offence occurs. (see Intellectual Honesty section of University Calendar)

How can you achieve academic integrity?

- Make sure you understand Dalhousies policies on academic integrity.
- Give appropriate credit to the sources used in your assignment such as written or oral work, computer codes/programs, artistic or architectural works, scientific projects, performances, web page designs, graphical representations, diagrams, videos, and images. Use RefWorks to keep track of your research and edit and format bibliographies in the citation style required by the instructor (http://www.library.dal.ca/How/RefWorks)
- Do not download the work of another from the Internet and submit it as your own.
- Do not submit work that has been completed through collaboration or previously submitted for another assignment without permission from your instructor.
- Do not write an examination or test for someone else.
- Do not falsify data or lab results.

These examples should be considered only as a guide and not an exhaustive list.

What will happen if an allegation of an academic offence is made against you?

I am required to report a suspected offence. The full process is outlined in the Discipline flow chart, which can be found at: http://academicintegrity.dal.ca/Files/AcademicDisciplineProcess.pdf and includes the following:

1. Each Faculty has an Academic Integrity Officer (AIO) who receives allegations from instructors.
2. The AIO decides whether to proceed with the allegation and you will be notified of the process.
3. If the case proceeds, you will receive an INC (incomplete) grade until the matter is resolved.
4. If you are found guilty of an academic offence, a penalty will be assigned ranging from a warning to a suspension or expulsion from the University and can include a notation on your transcript, failure of the assignment or failure of the course. All penalties are academic in nature.

Where can you turn for help?

- If you are ever unsure about ANYTHING, contact myself.
- The Academic Integrity website (http://academicintegrity.dal.ca) has links to policies, definitions, online tutorials, tips on citing and paraphrasing.
- The Writing Center provides assistance with proofreading, writing styles, citations.
- Dalhousie Libraries have workshops, online tutorials, citation guides, Assignment Calculator, RefWorks, etc.
- The Dalhousie Student Advocacy Service assists students with academic appeals and student discipline procedures.
- The Senate Office provides links to a list of Academic Integrity Officers, discipline flow chart, and Senate Discipline Committee.