Health Sciences 1G03 Syllabus
Psychobiology
McMaster University, Fall 2017

Instructor
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Lectures
Term 1, September 5 - December 5, 2017
Tuesdays 13:30-14:20 and Thursdays 12:30-13:20 in HSC 1A1
Tutorials: As assigned (1 per week)

Office Hours:
By appointment

LearnLink Folder
HTH SCI 1G03 - Psychobiology

Course Description
The course aims to familiarize you with the concepts and methods of biological psychology (Psychobiology). Psychobiology (also known as behavioral neuroscience, physiological psychology, or biological psychology) is a basic science discipline that investigates the neural mechanisms of behavior.

In the course, we shall consider typical and atypical behavior and examine how the phenomena of behavior are embodied in the levels of function of the nervous system. Because to do this we need to understand nervous system function, we will also study the make-up of the nervous system—its anatomy and physiology. As a means of learning psychobiology material, we shall consider animal and human studies and the variety of experimental approaches used to gain psychobiology knowledge.

Course format is designed to facilitate and encourage your role as a self-directed and enthusiastic learner. Thus, there are no final or midterm exams or quizzes because they generally have the unintentional side-effect of focusing the student on memorizing details as a learning strategy, in addition to creating in many a draining anxiety and pre-occupation about “what’s going to be on the test.” Instead, to focus your energies on acquiring skills that promote your curiosity, scientific inquiry, and (of course ☺) fascination about the biological bases of behavior (that is, Psychobiology), the format of the course includes the writing of two essays on a topic relevant to Psychobiology, a journal of your summaries of the lecture topics, twice-weekly lectures, a weekly tutorial session, in-class activities, and active discussion of the learning material.

Each component aims to foster your learning of the principles involved in the study of psychobiology. In other words, the emphasis of the course is obtaining “The Big Picture.”
Textbook

Although there is no required textbook for the course, a helpful one is (available at the Health Sciences Bookstore) An Introduction to Brain and Behavior (Fifth Edition) by Bryan Kolb, Ian Q Whishaw, and G. Campbell Teskey, 2016. Although the lectures are drawn largely from primary research articles, the textbook may serve as a handy resource.

Course Evaluation

1. Essays: 2 x 27% = 54%
You will write the essays in groups and each group will submit a single paper for marking. The topic for the second essay will be posted once Essay 1 is due. Please see the Calendar at the end of this document for due dates.

The details of the first essay topic, format, etc., are described in a separate document (1G03Essay1Topic1718). Specifics of the second essay will be provided upon posting of the topic, but in very general terms it may be similar in format to the first essay.

You will be pre-assigned into essay groups. This information will be posted by your TA in your tutorial folder on LearnLink (each tutorial section has its own folder). You will stay with the same group for both Essay 1 and Essay 2.

2. Journal Diary: 2 x 18% = 36%
The journal diary is a series of summaries of each week worth of lecture material (12 in all), due Tuesdays by 11:00 AM (see Calendar). *Refer to Journal Diary for penalties. You will submit these electronically to the appropriate LearnLink folder as indicated in a separate document (1G03JournalDiaryDescription1718). Each journal entry will have 3 parts:

- A synopsis of the material presented in the lectures (remember, the focus is on the “big picture” not on the nitty-gritty);

- Further questions the lecture material raised in your mind (e.g., what are the implications of the material to therapy, education, society, philosophy, etc, or to other bodies of knowledge inside and outside psychobiology; what kinds of experiments could test some aspect of the information raised by the material; what else would be interesting to know to fully understand the issue(s) raised by the lecture material, etc); and,

- What to you is inconsistent and why. This last item is actually a bit more involved than at first appears, but this is explained in a separate document about the particulars of the journal diary (see, JournalDiaryDescription1718).

3. LearnLink Help & Discussion: 2 x 5% = 10%
One way that you can know that you learned and integrated the new material is by being able to explain it to someone else so they understand it. Another way that you can gauge successful understanding is by the ease with which you can utilize the new material in different contexts; for
instance, in a discussion on topics that are broader than the specific material itself. Yet another
sign of understanding is the facility of raising interesting questions that extend the scope of the
material learned (for instance: How does the particular psychobiology facts/concepts discussed
in this week’s lecture relate to the movie/program you saw last week?). You will have the
opportunity to use these means of learning psychobiology material by being an active participant
on the LearnLink Psychobiology 1G03 Class Discussion conference.

Specifically, by posting comments, responses, and questions to the 1G03 Class Discussion
LearnLink conference you will provide not only valuable help/input to your classmates but in the
process you will also consolidate and integrate your own understanding of psychobiology
concepts. Moreover, you will have the opportunity to use the LearnLink online discussion as an
extension of the discussion begun during your tutorial and as a dry run and inspiration for your
journal diary entries.

You will demonstrate your contribution to the online discussion and superior understanding of
psychobiology concepts by completing a self-evaluation form. You will do this separately for the
first 6 weeks of the course to claim the first 5% credit and then for 2nd half of the course (that is,
after discussion 1 closes onward) to claim the remaining 5% credit (total 10%). The evaluations
will be on a 5-point scale. The times for submission of the self-evaluations are 11:59 PM of the
respective due dates – see Calendar). Late submissions are deducted 2% per day; the
deduction is from the 5% mark; e.g., if late < 24 hr, then the maximum mark is 3%, etc. The
format of your self-evaluation will be posted in October.

Course Format

1. Lectures
For lectures, we will discuss and explore a number of “themes,” drawn primarily from research
articles. The table at the end of this document lists the themes. Please note, however, that this
list is neither a strict list nor a firm one (that is, I may adjust/substitute the topics depending
on how I gauge your interests and the progress of the lectures). There may also be
opportunities to listen/interact with guest speakers.

After each lecture I will post in the LearnLink Psychobiology folder 1G03 Lectures & Notes a
PDF file of my slides. Depending on whether it is suitable and ready, I may post the PDF slide
file before the lecture but this is likely to be extremely sporadic.

I intend for the lectures to be interactive, which means that I encourage your asking any and all
sorts of questions, from requests to clarify something that needs more explanation to
puzzlement regarding the possible implications of the information to this or that issue. I will also
ask you questions during the lecture, in the spirit of maintaining an interactive format. Just like
you, I may not be able to answer a question posed during the lecture. In those cases, I will take
it as a challenge to have an answer for the next session.

2. Tutorials
The weekly tutorial sessions with the TA are largely for clarification, discussion and elaboration
of lecture material as well as for working in small-groups on your essays. The TAs will attempt
to answer your questions pertaining to the lecture material as well as the various tasks associated with writing the essays.

The format of the tutorial session is flexible except for the first 15 min of each tutorial, which are reserved for going over the lecture material (that is, you may spend more time on discussion of the lecture material but you may not spend less). You must initiate the discussion by asking questions of the TA - it is not the intent that the TA will give a shorter version of the weekly lectures.

The TAs are responsible for marking essays and journal diary entries and providing feedback.

For BHSc students, please note that many of the discussions and activities in your Inquiry classes are transferrable to the assignments (e.g., writing the essay or journals). Non-BHSc students may wish to take the equivalent Inquiry course offered by the Faculty of Sciences.

3. Course administration
For administrative issues/questions related to the course, please post a message to the main conference.

Academic Integrity

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour 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 types of academic dishonesty please refer to the Academic Integrity Policy, located at www.mcmaster.ca/academicintegrity.
Outline of Topics

1. What is Psychobiology?

2. Neuroanatomy and Neurophysiology

3. Methods of Study

4. Sensation and Perception

5. Neural Coding

6. The Changing Brain

7. Cognition

8. Neurotechnology

9. Movement, Learning, Memory*
   *Discussions of these topics will be interspersed throughout the semester