2018-2019 NFS*489H1-F: Nutritional Neuroscience

Course Description:

This course provides an integrated approach to understand how brain structure and function regulate, and in turn are regulated by nutrition from a biochemical perspective. The course will enable students to critically examine the role of diet on brain structure and function with implications for neurological and whole body health.

Before Starting NFS*489:

BCH210H1, BCH311H1/CSB349H1/PSL350H1, NFS284H1, PSL302Y1/(PSL300H1, PSL301H1)

Learning Objectives:

By the end of the course students will be able to:

- Explain how nutrients sustain basic brain structure and function
- Identify how dietary interventions alter nutrient availability and brain metabolism to enhance and/or hinder brain function
- Hypothesize how changes in diet can be used as a strategy to maintain brain health and to prevent the development of neurological and whole body disease
- Communicate advanced topics in nutritional neuroscience in a clear and accurate manner for a variety of audiences

Course Instructor:

Instructor: Dr. Laura Castellani
Email: laura.castellani@utoronto.ca
Office: MS 5347
Office Hours: Mondays 1-3pm, Tuesday-Fridays by appointment as necessary

Course Details:

Lectures: Monday 9 AM – 12 PM
Location: EM119
Course website: available on Quercus

Course Assessment:

Assignment/Test	Format	Due Date	Weight
Midterm Exam	Multiple Choice True/False Short Answer Long Answer	Monday October 21 2019	30%
Science Communication Assignment (Online Submission)	Topic Selection	October 15 2019	4%
	Written Assignment	November 18 2019	13%
	Oral Assignment	November 18 2019	13%
Final Exam (Cumulative)	Multiple Choice (post-midterm content) True/False (post-midterm content) Short Answer (cumulative) Long Answer (cumulative)	December Exam Period (Date TBA)	40%

Science Communication Assignment:

The assignment has been designed to develop the ability of students to communicate advanced topics in nutritional neuroscience to members of the public and/or scientific communities that are not familiar with the field. Examples of communication of nutritional neuroscience for the public will be included at the end of each weekly lecture, and students are encouraged to start thinking about a topic they would like to write and speak about as early as the first week of classes. A lecture on scientific communication and details on the assignment will be discussed at length on the fifth week of classes (Oct 7 2019).

Students are required to choose ONE of the six selected primary research article published in the field of nutritional neuroscience within the last year (2019). Students are tasked with reading and assessing the quality of the work and highlighting the main findings, the implications for the field and for the target audience, and the limitations of the study.

Topic Selection- Students are required to submit a short written summary (~ one paragraph) indicating which article they have selected to present. The summary should identify which paper was selected, why the student chose that article, and clearly outline the audience the student will prepare the communication for. The submission should be uploaded on or before Oct 15 2019.

Written- Students will prepare a 500 page written summary in the form of a news article for a local news agency (e.g. magazine or newspaper article). Students should be mindful not to sensationalize content or oversimplify the findings, yet also to define science terms and procedures. More details are included on the assignment outline (posted on Quercus).

Oral- Students will prepare a 3-6 minute video summarizing the main findings of the selected article for a local news agency targeting members of a community of the student's choice. Students should be mindful to articulate the main findings, without oversimplifying the content. More details are included on the assignment outline (posted on Quercus).

Both a link to the oral and the written submissions will be oploaded to Quercus on or before the due date (Nov 18 2019 11:59pm). More details are posted on the assignment outline on Quercus.

Specific details and marking rubrics regarding the assignment have been uploaded to Quercus.

Students are encouraged to seek clarification on any dimension of the assignment from Dr. Castellani during scheduled office hours or by appointment throughout the semester.

Course Schedule:

DATE	LECTURE TOPICS
Sept 9	○ The brain as an organ responsive to and driving nutritional cues ○ Brain structure, function, and the ever evolving diet
Sept 16	○ Nutrients and the brain: glucose metabolism, free fatty acids, proteins ○ How do they get in and how are they used
Sept 23	○ Overnutrition and Neuroinflammation- too much of a good thing ○ Eating to deter neuroinflammation and manage neuropathy
Sept 30	○ Appetite ○ Cravings & Food Preferences ○ Hydration
Oct 7	○ Nutritional neuroscience in the "real world" (Guest Lecture) ○ Science communication and knowledge translation- assignment overview
Oct 14	Thanksgiving Monday (no class)

Oct 21	**Midterm Exam**
Oct 28	○ The brain-body connection: cross talking with peripheral tissues
Nov 4	November Break (no class)
Nov 11	○ The Endocannabinoid System- central regulation of appetite, metabolism and cognition, and the development of disease
Nov 18	**Assignment Due- Online Submission** ○ Caffeine, Alcohol, Nootropics ○ Food marketing, neuroeconomics and the predisposed brain
Nov 25	○ Nutritional psychiatry and the potential role of probiotics in mental health (Guest Lecture)
Dec 2	Course Review- Brain + Diet for the maintenance of health
Dec 5	Make-up class, if necessary

Weekly Class Session:

The weekly class session will consist of a lecture style presentation by Dr. Castellani or guest experts on the weekly topics. The lectures will also include activities in active learning whereby topics will be informally discussed and critically discussed in partners, small groups and the class as a whole.

Students are encouraged to ask questions throughout the lecture and to initiate class discussions. Each lecture will culminate with a "key points breakout" during which the class will break into small groups to define key points of the lecture. This will then be discussed as a class. "Muddy" areas of the topic will be revisited and explained.

Course Resources:

There is no textbook for this course. Selected readings (primary research articles and review articles) will be posted to Quercus with the lecture approximately 5 days prior to class each week as complementary literature to support the topics that will be discussed in lecture.

Late Submission of Assignments:

Assignments will not be accepted after the due date and time for online submission, except for extenuating circumstances such as illness, personal or family emergencies or other unanticipated situations. Please contact Dr. Castellani by email (laura.castellani@utoronto.ca) ahead of the deadline (if possible) to request an extension. With your request, please provide a brief explanation for the extension by written explanation or a medical certificate (found online at http://www.illnessverification.utoronto.ca/index.php). Extensions may also be requested verbally in person during office hours or by appointment. All information is treated as confidential.

If an assignment cannot be completed for the deadline, please submit what has been completed by the deadline and arrange to discuss the opportunity for an extension with Dr. Castellani as soon as possible. Accessibility Services: If you are registered with Accessibility Services, extensions are provided in accordance with the terms of your letter of accommodation.

For ongoing and/or chronic personal distress or medical circumstances additional documentation may be required. In such circumstances students are encouraged to connect with their college registrar to seek appropriate accommodations and guidance. Extensions will be granted in accordance with college recommendations in these situations.

It is important to note that poor time management, and/or conflicts with other term tests and/or assignments are VERY RARELY accepted as rationale for deadline extensions. Students are strongly encouraged to submit incomplete assignments in the event that the deadline cannot be met. Although the grade may not be a high as the student aimed to achieve, partially completed assignments will still be accepted and graded. As such students will still receive full feedback and some marks (i.e. "submitting something is better than submitting nothing").

Assignment Reconsideration:

Assignments may be submitted for re-evaluation if the student feels elements of the assignment were not fully considered or fairly evaluated, or if addition errors have been found in the rubric. Please note that the entire assignment will be re-evaluated as a new submission, and that the marks earned are subject to change for the assignment as a whole.

To submit a request for reconsideration, please email Dr. Castellani with a brief explanation of the concerns regarding the evaluation of the assignment. Requests for reconsideration must be received no later than two weeks after assignment has been returned.

Turnitin:

Normally, students will be required to submit their course essays to Turnitin.com for review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the Turnitin.com reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of the Turnitin.com service are described on the Turnitin.com website.

Online submissions uploaded through Quercus will automatically be submitted to Turnitin. To complete this process students must agree first agree to the Turnitin license agreement. For students encounter issues with Turnitin alternate submission processes can be arranged by contacting Dr. Castellani. For students who do not submit via Turnitin a short oral test will accompany the written submission (i.e. Dr. Castellani will meet with the student to ask a series of questions and evaluate the student's knowledge of the submitted material). The grade will reflect the written material and the student's performance on the oral test.

Turnitin results will be reviewed by Dr. Castellani, who will contact students in the event of concerns regarding their submitted written content. Marks may be deducted for improper citations or unacknowledged use of material. Marks concerning plagiarism will be deducted if students do not respond to the email from Dr. Castellani requesting to discuss the concern.

If major concerns of plagiarism are suspected, the Office of Academic Integrity will be contacted to review the assignment and advise on possible sanctions.

Policy Regarding Missed Term Tests:

Students who miss a term test will receive a grade of ZERO. Make-up tests will not be issued.
In extenuating and/or unforeseen circumstances (e.g. personal and/or family distress or emergency), the final exam and assignments will be re-weighted to carry the weight of the midterm exam (i.e. written assignment 13% +10%, oral assignment 13% + 10%, final exam 40% + 10%)

Students unable to write the term test should contact Dr. Castellani as soon as possible to discuss alternate weighting of assignments and the final exam. A brief statement explaining why the midterm exam could not be attended should be submitted by email as a written statement, or a medical certificate (found online at http://www.illnessverification.utoronto.ca/index.php). Alternatively, students may also discuss the issue in person during office hours or by appointment with Dr. Castellani. All issues are considered confidential. Students with ongoing and/or chronic personal distress or health issues may require additional documentation and should discuss the matter with their college registrar. Accommodations will be made in accordance with the recommendation of the college administration.

Policy Regarding a Missed Final Exam:

Policies for missing a final exam are defined by the Faculty of Arts and Science. In the event that a student cannot attend the final examination for unforeseen circumstances, a petition (including appropriate documentation) must be filed with the student's college registrar. If the petition is granted the final examination will be written at a later date, with a deferred examination fee.

Lecture Material, Audio Recordings, & Intellectual Property:

The course material (e.g. lecture presentations, videos, course documents) shared in this course are the intellectual property of the lecturer. Instructor consent is required for course materials (including audio and video recordings) to be distributed, transmitted, reproduced or reposted at any time.

All students enrolled in NFS489 are permitted to use the material for personal use and study. You may also make audio recordings of the lecture for personal use only.

Academic Integrity:

Students are expected to uphold standards of academic integrity and adhere to the activities described in the Code of Behaviour. Students are encouraged to review the guidelines and recognize restricted activities (http://www.governingcouncil.utoronto.ca/policies/behaveac.htm), as ignorance of the policies is not an acceptable excuse for non-compliance.

Accessibility Needs:

The course supports the University of Toronto's commitment to accessibility will and accommodate needs and/or concerns regarding accessible course content and classroom structure. Students should contact Accessibility Services as soon as possible such that arrangements can be made to establish an inclusive learning environment.

Help with Academic Skills:

The University of Toronto offers an abundant number of resources to support the development of academic skills. Students are encouraged to seek support in these services to enhance their learning experiences throughout the semester.

Academic Success Centre: The Academic Success Centre provides workshops, peer mentoring, and other resources to help all students improve their academic skills.
Check out the available services at: http://www.asc.utoronto.ca/

English Language Learning: Provides support to students for whom English is a second language. It also supports native speakers who would like to improve their language skills.
Check out available services at: http://www.artsci.utoronto.ca/current/advising/ell

Writing Centres: Writing Centres provide assistance with writing assignments for all students.
Check out available services at: http://www.writing.utoronto.ca/writing-centres

Achieving Success in NFS*489

1. Review the lectures before class. Arrive a few minutes early and flip through the lecture slides. As little as 10 minutes preview can help you anticipate the lecture material and direction.
2. COME TO CLASS. The lectures are designed to include ample examples and discussions and to fill in the gaps between slides. Key points will be discussed and defined students are encouraged to discuss the areas of the material that aren't quite fitting together for them.

3. Ask questions and participate in class. Drive the direction of the course into spaces and examples that make sense and are meaningful to you.
4. Review slides after class. Digest the material and flag the material that didn't quite "add up" in the moment. Work through those pieces while the content is still fresh in your mind.
5. Discuss content with fellow students as well as people outside the class. Can you explain the material to them? What pieces are missing?
6. Apply the course content to your own life in a creative, fun way. While you enjoy your dinner, what is your brain "seeing" from the meal? How is it responding?