FACULTY OF HEALTH
School of Kinesiology and Health Science

Course: HH KINE 4210 3.0 Disorders of Visual Cognition
Course Webpage: eClass

Term: Winter Term 2023

Prerequisite / Co-requisite: HH/KINE 3020 3.00 or SC/BIOL 4370 3.00 or HH/PSYC 3250 3.00

Course Instructor

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In person consultation by appointment

Time and Location

Lectures Tues/Thurs 13:00, ACW 204

Course Description

This course introduces the student to visual processing in the brain. Vision, as a major sensory input, is used to guide behaviour as we interact with the world around us. As different stages of visual processing break down due to damage or impairment, there are different behavioural manifestations, made evident in motor behaviors, such as pointing, looking at, tool use, skiing, shaving, and dressing. The course covers the various stages of visual processing and the disorders that manifest from impairments of those stages.

The following is a sample of the topics covered, listing the topic with the motor behavior manifestations:

- Overview of visual processing
- Blindsight
    - action without perception.
    - Reaching and grasping what you think you cannot see.
- Balint's syndrome
    - disorders of reaching, grasping and eye movements. –
- Visuospatial deficits
    - route-finding disorder
- Visual Agnosia
    - appropriate motor responses to unknown items
- Prosopagnosia
    - unable to process faces
- Apperceptive agnosia
    - transformations and topography
- Visuomotor dissociations in normal subjects
    - movements to remembered places.
    - grasping remembered objects.
    - perceptual stability and postural adjustment.
    - distance judgments.
    - locomotion calibration.
- Neglect
    - ignoring half of your body when shaving or dressing
    - directional hypokinesia
- Extinction

Course Organization
The content of the course will be delivered twice a week in lecture format. Students are strongly encouraged to read the relevant textbook chapters prior to the weekly lecture.

Course Learning Objectives
The student will understand how the brain processes vision: changing photons into nerve impulses and analyzing the two-dimensional retinal image to make a three-dimensional world full of objects and motion. By the end of the course, the student should understand both the normal workings of the visual system and the disorders that can occur.

Course Text / Readings
Additional readings may be assigned or recommended during the course.
Milner, D.A. and Goodale, M.A. (2006). The Visual Brain in Action, Second Edition. Oxford University Press.
Sacks, O. The Man Who Mistook His Wife for a Hat and Other Clinical Stories. Simon & Schuster.

Evaluation

Attendance: It is your responsibility to attend lectures. You will be tested on all materials that are covered in both lectures and the texts. Some material in the lecture is not in the
texts.

Final Grade:
The final grade for the course* will be based on the following items weighted as indicated:

- Class Test 1: 15% (Feb 9th)
- Class Test 2: 20% (March 16th)
- Final Examination: 40% (TBA)
- In-class activities (10 total): 15% (optional)**
- End of term presentations: 10%

There will be two class tests and one final examination. Questions will be drawn from weekly lecture material and the relevant textbook chapters (or readings provided via eClass), with the greatest focus on content presented in class and overlapping with the readings. The format of the questions will be multiple choice, fill in the blank, matching, short answer, and essays. The class tests will not be cumulative. The final examination will cover material from the entire course.

An unofficial list of grades will be posted on the course website as soon as they become available. Please check the course website rather than persistently contacting the teaching team to find out if they are available.

* Final course grades may be adjusted to conform to Program or Faculty grades distribution profiles.
** The in class activities are optional: if a student does not attend one, the weight of the next exam will be increased by the value of that activity (1%).

Grading: The grading scheme for the course conforms to the 9-point grading system used in undergraduate programs at York (e.g., A+ = 9, A = 8, B+ = 7, C+ = 5, etc.). Assignments and tests will bear either a letter grade designation or a corresponding number grade (e.g. A+ = 90 to 100, A = 80 to 90, B+ = 75 to 79, etc.) (For a full description, see the York University Undergraduate Calendar:
http://calendars.registrar.yorku.ca/pdfs/ug2004cal/calug04_5_acadinfo.pdf)

An appeal against a grade assigned to an exam must be made in writing to the course director/instructor. The entire exam will be regarded by the course director. The result of an appeal may cause the grade to increase, decrease or remain the same.

Missed Tests: Only students with a legitimate reason for missing a class test, which is confirmed by official documentation*, may request accommodation from the Course Instructor. Written documentation should be submitted to the Course Director at the next meeting of the class. In the event that a class test is missed, the percentage allocated to the missed exam will be added to the final exam. If a student misses an exam with no legitimate excuse, the student will receive a grade of zero for the missed test. Further extensions or

accommodation will require students to submit a formal petition to the Faculty.

In the case of a sudden emergency, contact me as soon as possible. If you cannot reach me, a message can be left on my office voice-mail, which records the date and time of your call.

*Official Documentation.
Documentation must be provided by a registered clinical psychologist, psychiatrist, or medical doctor indicating that you were indeed unable to attend on the specific date of the examination because of your specific problem.

IMPORTANT COURSE INFORMATION FOR STUDENTS

Please refrain from talking to others or making audible comments during class lectures or while another student is responding. If it is necessary to make noise, please leave the room first. Please place your cell phone and other electronic equipment in silent mode.
All participants in the course, teaching staff and students, will conduct themselves in a thoughtful and sensitive manner. Correct scientific terminology will be the lingua franca in the classroom.
This is an undergraduate course, not the culmination of a clinical neurology degree. Even though we will discuss many issues involving the relationship between the brain and behavior, you will not be in a position to "diagnose" the problems of another person (including yourself). If the material in this course does evoke uneasiness for you, perhaps because you or a family member has gone through a related experience, please feel free to contact the course director confidentially via phone or e-mail or access the resources of the Counselling and Development Centre (145 Behavioural Sciences Building; 416-736-5297).

Cheating is unacceptable on this course and any student who participants in this activity can expect to be referred to the appropriate disciplinary authority for their first offence. If you are unclear what does and does not constitute cheating please refer to the Academic Integrity web site (http://www.yorku.ca/academicintegrity) and read the section 'For Students'. If you have not completed the Academic Integrity Tutorial which is hosted there, then I would urge you to do so.

All students are expected to familiarize themselves with the following information, available on the Senate Committee on Academic Standards, Curriculum & Pedagogy webpage (see Reports, Initiatives, Documents) - https://secretariat.info.yorku.ca/files/CourseInformationForStudentsAugust2012-.pdf

- Senate Policy on Academic Honesty (https://www.yorku.ca/secretariat/policies/policies/academic-honesty-senate-policy-on/) and the Academic Integrity Website (https://www.yorku.ca/unit/vpacad/academic-integrity/).
- Course requirement accommodation for students with disabilities, including physical, medical, systemic, learning and psychiatric disabilities (https://www.yorku.ca/secretariat/policies/policies/academic-accommodation-for-students-with-disabilities-policy/; ***and*** https://www.yorku.ca/secretariat/policies/policies/academic-accommodation-for-students-with-disabilities-guidelines-procedures-and-definitions/)
- Student Conduct Standards (https://www.yorku.ca/secretariat/policies/policies/code-of-student-rights-and-responsibilities-presidential-regulation/)
- Religious Observance Accommodation (https://www.yorku.ca/secretariat/policies/policies/academic-accommodation-for-students-religious-observances-policy-guidelines-and-procedures/)

Calumet and Stong Colleges' Student Success Programming:

Calumet and Stong Colleges aim to support the success of Faculty of Health students through a variety of **free programs** throughout their university career:

- Orientation helps new students transition into university, discover campus resources, and establish social and academic networks.
- Peer Mentoring connects well-trained upper-year students with first year and transfer students to help them transition into university.
- Course Representative Program supports the academic success and resourcefulness of students in core program courses through in-class announcements.
- Peer-Assisted Study Sessions (PASS) involve upper-level academically successful and well-trained students who facilitate study sessions in courses that are historically challenging.
- Peer Tutoring offers one-on-one academic support by well-trained Peer Tutors.
- Please connect with your Course Director about any specific academic resources for this class.

- Calumet and Stong Colleges also support students' Health & Wellness, leadership and professional skills development, student/community engagement and wellbeing, Career Exploration, Indigenous Circle, awards and recognition, and provide opportunities to students to work or volunteer.
- For additional resources/information about Calumet and Stong Colleges' Student Success Programs, please consult our websites (Calumet College; Stong College), email scchelp@yorku.ca, and/or follow us on Instagram (Calumet College; Stong College), Facebook (Calumet College; Stong College) and LinkedIn.
- Are you receiving our weekly email (Subject: "Calumet and Stong Colleges - Upcoming events")? If not, please check your Inbox and Junk folders, and if it's not there then please contact ccscadmn@yorku.ca, and request to be added to the listserv. Also, make sure to add your 'preferred email' to your Passport York personal profile to make sure you receive important news and information.

LECTURE SCHEDULE
(subject to revision)

Date	Topic	Notes	Readings
Jan 10	Syllabus handout	Naail Khan lecture	N/A
Jan 12	Properties of light	Naail Khan lecture	N/A
Jan 17	The eye 1		CWE pp 50-63
Jan 19	The eye 2		CWE pp 50-63
Jan 24	Central Visual Pathways		CWE 63-69
Jan 26	Cortical Vision 1 – V1		CWE 69-74
Jan 31	After V1		
Feb 2	Lecture canceled		
Feb 7	Sensation, perception, cognition and action		MG Chapter 1
Feb 9	Test #1		N/A
Feb 14	Magno/Parvo vs Dorsal/Ventral		MG Chapter 2.1-2.3
Feb 16	Dorsal in detail		MG Chapter 2.4-2.5
Feb 28	Test review		N/A
Mar 2	Ventral in detail		MG Chapter 2.6, additional material
Mar 7	Blindsight		MG Chapter 3
Mar 9	Disorders of spatial cognition		MG Chapter 4
Mar 14	Disorders of spatial cognition 2		MG Chapter 4
Mar 16	Test 2		N/A
Mar 21	Visual Agnosia		MG Chapter 5
Mar 23	Normals		MG Chapter 6
Mar 28	Attentional disorders		MG Chapter 7
Mar 30	Clinical Cases - presentations		N/A
Apr 4	Clinical Cases - presentations		N/A
Apr 6	Clinical Cases - presentations		N/A
TBA	Final exam		