

THE UNIVERSITY OF TORONTO SCARBOROUGH Department of Psychology

PSYC51: The Cognitive Neuroscience of Vision, Winter 2020

1.0 CALENDAR DESCRIPTION

This course will provide an in-depth examination of research in the field of visual cognitive neuroscience. Topics will include the visual perception of object features (shape, colour, texture), the perception of high-level categories (objects, faces, bodies, scenes), visual attention, and comparisons between the human and monkey visual systems.

2.0 COURSE INFORMATION

Prerequisite: PSYB51H3 and [(PSYB01H3) or (PSYB04H3) or PSYB70H3] and [PSYB07H3 or

STAB22H3 or STAB23H3] and [PSYB55H3 or (PSYB65H3)]

Exclusion: PSY380H

Class meeting time: Tuesdays between 11 am and 1 pm, Room BV 264

Readings: There is no textbook in this course. Instead, you will be required to read review

articles on the various topics covered in the course (see below).

3.0 INSTRUCTOR AND TEACHING ASSISTANT CONTACT INFORMATION

Instructor:

Professor Jonathan Cant [email: jonathan.cant@utoronto.ca (please put PSYC51 in the subject line of any emails); office hours: Thursdays between 2 – 4 pm (SW 411)]

Teaching assistants:

Tyler Roberts (tyler.roberts@mail.utoronto.ca)

Moaz Shoura (moaz.shoura@mail.utoronto.ca)

TA Office hours: Time and location to be announced.

4.0 ONLINE COURSE RESOURCES

Quercus: https://q.utoronto.ca/

Quercus will be used as the main online resource for this course. All important course-related information (e.g. announcements, syllabus, class schedule, assignment information, message boards, and grades) will be available via Quercus.

5.0 DETAILED COURSE DESCRIPTION

The purpose of this course is to introduce you to a number of fundamental concepts in the study of the cognitive neuroscience of vision. You will learn about the history of research in each topic area, and will also learn about the current understanding of how each concept is represented in the brain. We will be focusing on research conducted using a number of different experimental methods [e.g., behavioural psychophysics, human neuropsychology, monkey electrophysiology, transcranial magnetic stimulation (TMS), and brain imaging techniques such as functional magnetic resonance imaging (fMRI), electroencephalography (EEG), magnetoencephalography (MEG), and positron emission tomography (PET)]. The topics covered, and the associated readings, are listed in the chart below.

Learning Outcomes: As a student in this course, you can expect to develop and improve upon the following types of skills, all of which are important for future academic or work-related endeavors: critical reasoning, problem solving, working effectively in groups, and effective scholarly writing (all assessed via the written assignments and examinations, with the exception of 'working effectively in groups' which is assessed via the group journal club reports). Moreover, you will have developed knowledge of core topics in cognition and perception, and will be able to relate this knowledge to the broader question of how information is represented in the human brain. The knowledge base and skill set that you develop in this course is relevant not only to future academic course work, but also to securing volunteer positions in a number of labs at UTSC and ultimately to applications for graduate school and future career opportunities.

Class Schedule and Readings:

Class Schedule and Readings.		
Date	Topic	Reading
January 7	Course introduction	
·	 Early visual system (retina → LGN) 	
January 14	Primary visual cortex	https://goo.gl/ZnoaTA
	Colour perception	https://goo.gl/epfzD3
January 21	Motion perception	https://cutt.ly/6riyOUz
	 Shape and object perception part 1 	
	(1 st journal club report due)	
January 28	 Shape and object perception part 2 	https://goo.gl/rRxELA
February 4	Face perception	https://goo.gl/1eZ2n1
	(2 nd journal club report due; 1 st journal	
	club revision due before handing in	
	2 nd journal club report)	
February 11	Mid-term exam	
February 18	READING WEEK, NO CLASS	
February 25	Body perception	https://goo.gl/ZztjPV
	(Analysis/thought paper due)	
March 3	Scene perception	https://goo.gl/KKWHjZ
	(3 rd journal club report due; 2 nd	
	journal club revision due before	
	handing in 3 rd journal club report)	
March 10	Word perception	https://cutt.ly/UriyA4P
March 17	Visual attention	https://goo.gl/HtgkNH
	(4 th journal club report due; 3 rd journal	
	club revision due before handing in	
	4 th journal club report)	
March 24	Hemispatial neglect	https://goo.gl/ZQZ1WU
March 31	Visual awareness	https://goo.gl/sYiiJx
	(4 th journal club revision due)	
	(Analysis/thought paper revision due)	
To be determined	Final Exam	

References for Readings:

January 14: Primary Visual Cortex

Grill-Spector, K., & Malach, R. (2004). The human visual cortex. *Annu. Rev. Neurosci.*, 27, 649-677.

The beginning of this article covers processing in early visual cortex, but the rest of the article is relevant to many other topics we will be covering in the course (e.g., colour perception, motion perception, object perception, etc.), so the entire article is required reading.

January 14: Colour Perception

Gegenfurtner, K. R., & Kiper, D. C. (2003). Color vision. *Annual review of neuroscience*, 26(1), 181-206.

January 21: Motion Perception

Culham, J., He, S., Dukelow, S., & Verstraten, F. A. (2001). Visual motion and the human brain: what has neuroimaging told us?. *Acta psychologica*, 107(1), 69-94.

January 21/28: Shape and Object Perception

Peissig, J. J., & Tarr, M. J. (2007). Visual object recognition: do we know more now than we did 20 years ago?. *Annu. Rev. Psychol.*, *58*, 75-96.

February 4: Face Perception

Duchaine, B., & Yovel, G. (2015). A revised neural framework for face processing. *Annual Review of Vision Science*, 1, 393-416.

February 25: Body Perception

Peelen, M. V., & Downing, P. E. (2007). The neural basis of visual body perception. *Nature Reviews Neuroscience*, *8*(8), 636-648.

March 3: Scene Perception

Epstein, R. A., Bar, M., & Kveraga, K. (2014). Neural systems for visual scene recognition. *Scene vision*, 105-134.

March 10: Word Perception

Dehaene, S., & Cohen, L. (2011). The unique role of the visual word form area in reading. *Trends in cognitive sciences*, *15*(6), 254-262.

March 17: Visual Attention

Moore, T., & Zirnsak, M. (2017). Neural mechanisms of selective visual attention. *Annual review of psychology*, *68*, 47-72.

March 24: Hemispatial Neglect

Corbetta, M., & Shulman, G. L. (2011). Spatial neglect and attention networks. *Annual review of neuroscience*, *34*, 569-599.

March 31: Visual Awareness

Rees, G., Kreiman, G., & Koch, C. (2002). Neural correlates of consciousness in humans. *Nature Reviews Neuroscience*, *3*(4), 261-270.

6.0 EVALUATION

Mid-term exam: 33%

Analysis/Thought paper: 14% Group journal club reports: 20%

Final exam: 33%

Mid-term exam (33%)

The mid-term examination will cover material from the first five lectures, and will include material from both the lectures and the assigned readings. Since some of the material presented in class will not be covered in the readings (and vice versa), it is important to both attend class and to read the required readings. There will be a number of multiple choice questions to answer, and you will have to write one essay, the topic of which you will choose from five different essay questions (one question provided per lecture topic).

Analysis/Thought paper (14%)

You will be required to write one analysis/thought paper, which is worth 14% of your final grade. The purpose of this paper is to improve your ability to critically analyse scientific research published in a peer-reviewed journal, and to improve your scientific writing ability. The paper will have two main components (an initial submission and a second, revised submission), and will be based on a specific research article that focuses on either face perception or visual awareness (you will be provided with 2 face perception and 2 visual awareness articles, and you must choose one to write your paper on). The initial submission is due at the beginning of class on February 25. In the initial submission, you will need to: a) evaluate the content of the article, and b) form your own opinion of the research presented in the article.

- a) **Evaluating the content of the article**: this involves summarizing the rationale of the article, the specific hypotheses tested, the methods used, the results found, and the conclusions made by the authors. This summary should be no more than one page in length.
- b) **Forming your own opinion of the article**: this involves critically analysing the data/arguments presented in the article, and evaluating whether or not the conclusions made are supported by the data or arguments. In other words, do you agree or disagree with the conclusions made in the article? If you liked the article, what aspects of it did you like? If you did not like the article, what aspects of it do you think could be improved? In this section, you will need to cite two additional research papers on the topic that support your critical analysis of the primary article.

An important aim for this assignment (and the group journal club reports; see below) is to help you improve your writing skills while thinking critically about relevant course material. However, it is difficult to improve writing after feedback has been given without being given an opportunity to revise your work. Thus, this assignment offers you a direct way to address feedback on written work in order to develop your skills at writing and critical thinking, which are skills that will be required long after your university degree is complete. To do so, there will be two submissions for this assignment: an initial submission, and a second submission where you are able to incorporate the feedback given to you by the TA to improve upon the first submission. More details are given in the rubric posted online on Quercus, but below is a brief breakdown of how the submissions will be graded.

<u>Total Grade (initial and revised submissions combined)</u>: out of 10, with 6 points allocated to the first submission and 4 points allocated to the second (revised) submission. In other words, your final grade for the analysis/thought paper is weighted 60% for the first submission and 40% for the second submission.

<u>First submission</u>: will be given either 4 (both content and formatting need heavy revision), 5 (content is generally acceptable, with room for improvement, but there are major issues with formatting), or 6 points (default expected from a third year student, wherein the content is generally acceptable, but there is still room for improvement, and there are no, or very minor issues with formatting) out of 10. A 0 indicates that no assignment, or a plagiarized assignment, was handed in. A 10 is unlikely on the first submission, but is possible.

Revised Submission: handing in a revision earns you 1 point plus additional points that will vary between 0 (very little feedback has been taken into account) to 3 (all feedback was taken into account) out of 10.

Each component of the assignment (i.e., both the first and revised submissions) is marked by one TA. Late submissions are penalized 10% (1 point) per day past the submission deadline. See the rubric posted online for more specific details.

Formatting: Each paper (i.e., the initial submission) should be no longer than 4 double-spaced pages in length (not including title page and references), should be prepared according to APA format (see http://www.apastyle.org/manual/ and https://owl.english.purdue.edu/owl/resource/560/01/), should be written in 12-point font, should be double-spaced with 1 inch margins, and should include both a title page and reference list. You do not need an abstract for this assignment.

Note: A digital copy needs to be emailed to the appropriate TA (see 'Course Announcements' on Quercus to look up your TA assignment) at the beginning of class on February 25. The initial submission will be emailed back with feedback on it. Unless an extension has been granted, late submissions will result in a 10% deduction (1 point) per day (i.e., 24 hour period) starting after the class has finished at 1:00pm, and after three days you will not be able to hand in a paper.

It is imperative to receive your initial submission back with feedback in order to start working on a revised version. Thus, DO NOT LOSE OR DISCARD THE DIGITAL COPY WITH FEEDBACK ON IT! A digital copy of the revised submission (including a summary of how the feedback was addressed) is to be emailed to your TA at the beginning of class on March 31. Like the initial submission, late submissions will result in a 10% deduction (1 point) per day (i.e., 24 hour period) starting after the class has finished at 1:00pm, and after three days you will not be able to hand in a paper.

Group journal club reports (20%)

The purpose of this assignment is to help you think critically about the quality of research that gets published, and to improve your writing ability. You will form groups of four, and over the course of the semester will write journal club reports on four separate published papers of your choosing, insofar as they relate directly to the course material. Your TA will need to approve your article selections, so please email him a link to each article once your group has found an

appropriate article for each report. For each journal club report, you will need to meet with your group (i.e., have a journal club meeting), either during class when time permits, or outside of class, to discuss the content of the article and to brainstorm your critique (see rubric posted on Quercus for more details). As a group, you can decide if each member will take a turn at being group leader and will thus be responsible for writing up the journal report summarizing the group's discussion of the article, or if all of you will collaborate to write each group journal club report. All members of the group will receive the same grade.

Each journal club report will be marked out of 10 and will be worth 5% of your overall final grade (4 entries = 20% of your final grade). Like the thought paper, you will be handing in a first submission, and after feedback, will hand in a second (revised) submission. The first submission will be graded as 6/10 (if it needs revision) or 10/10 if no revision is needed (which is unlikely but possible). Failing to submit a journal report, or submitting plagiarized or inadequate material, will receive a grade of 0/10. Upon appropriate revision, the grade will be updated to 10/10. Late submissions are penalized 10% (1 point) per day past the submission deadline. Like the analysis/thought paper, the final grade for each journal club report is graded out of 10, with 6 points allocated to the first submission and 4 points allocated to the revised submission. See the rubric posted on Quercus for further details.

Formatting: Each journal club report (i.e., the initial submission) should be no longer than 500 words in length, and should be written in the style of a blog entry. You do not need to worry about writing in APA format, but you should include references where appropriate. You do not need a title page, but all of the names of the group members should be included on each report.

<u>Note:</u> You need to submit the revised journal club report before the next report is due (e.g., you have to hand in the revision of the first journal club report before the due date for the second journal club report; the revision of the second journal club report is due before the due date for the third journal club report, etc.).

A digital copy of the initial submission is to be emailed to your assigned TA at the beginning of class on the day it is due (see the course syllabus for specific dates for all 4 journal club reports). The initial submission will be emailed back to your group with feedback on it, usually no later than 48 hours after you submitted it. Unless an extension has been granted, late submissions will result in a 10% deduction (1 point) per day starting after the class has finished at 1:00pm, and after three days you will not be able to hand it in.

It is imperative to receive your initial submission back with feedback in order to start working on a revised version. Thus, DO NOT LOSE OR DISCARD THE DIGITAL COPY WITH FEEDBACK ON IT! A digital copy of the revised submission is to be emailed to your TA before the next journal club report is due (e.g., the revised submission of the first journal club is due before your group hands in the initial submission of the second journal club report; see the course syllabus for specific due dates for all 4 journal club reports). Like the initial submission, late submissions will result in a 10% deduction (1 point) per day (i.e., 24 hour period) starting after the class has finished at 1:00pm, and after three days you will not be able to hand in a paper.

Final Exam (33%)

The final examination will cover material from the last six lectures, and will include material from both the lectures and the assigned readings. The format of this examination is identical to the format of the mid-term examination.

Important Dates

January 21: 1st group journal club report due at the beginning of class; the revised

submission must be handed in before the 2nd group journal club report is due

February 4: 2nd group journal club report due at the beginning of class; the revised

submission must be handed in before the 3rd group journal club report is due

February 11: Mid-term exam (covering material from lectures 1 - 5, and assigned readings)

February 25: Analysis/thought paper due at the beginning of class

March 3: 3rd group journal club report due at the beginning of class; the revised

submission must be handed in before the 4th group journal club report is due

March 17: 4th group journal club report due at the beginning of class

March 31: 4th group journal club revision due at the beginning of class

Analysis/thought paper revision due at the beginning of class

TBD: Final exam (covering material from lectures 6 – 11, and assigned readings)

<u>Policy on late assignments:</u> late assignments will lose 10% for each day past the deadline that they are not submitted. Extensions will only be granted with proper documentation (i.e., documented family emergency, or UTSC medical certificate). Please note, according to UTSC policy, I am not permitted to extend the deadline for any assignment past the last day of classes for the semester (April 3).

Policy on Missed Term Work due to Medical Illness or Other Emergency:

All students citing a documented reason for missed term work must submit their request for accommodations within three (3) business days of the deadline for the missed work. Students must submit **BOTH** of the following:

- (1.)A completed **Request for Missed Term Work Accommodations form** (http://uoft.me/PSY-MTW), and
- (2.) Appropriate documentation to verify your illness or emergency, as described below.

Appropriate documentation:

For missed **TERM TESTS** due to **ILLNESS**:

- Submit the Request for Missed Term Work Accommodations form (http://uoft.me/PSY-MTW), along with an original copy of the official UTSC Verification of Illness Form (uof-Illness-Form) or an original copy of the record of visitation to a hospital emergency room. Forms are to be completed in full, clearly indicating the start date, anticipated end date, and severity of illness. The physician's registration number and business stamp are required.
- Note: If an end date of "ongoing" is specified, the medical note will be assumed to cover a period of two weeks. If no end date / an "unknown" end date is specified, the note will be assumed to cover a period of three business days (starting from illness start date.)

For missed **TERM TESTS** due to **ACCESSABILITY REASONS**:

 Meet with your AccessAbility consultant and have them email Keely (keely.hicks@utoronto.ca) detailing the accommodations required.

For missed **ASSIGNMENTS** due to **ILLNESS**:

Submit the Request for Missed Term Work Accommodations form (http://uoft.me/PSY-MTW), along with a hardcopy of the Self-Declaration of Student Illness Form (uoft.me/PSY-self-declare-form).

For missed **ASSIGNMENTS** due to **ACCESSABILITY REASONS**:

- If your desired accommodation is **within the scope** of your Accommodation Letter (ex. your letter includes "extensions of up to 7 days" and you need 3 days), submit the Request for Missed Term Work Accommodations form (http://uoft.me/PSY-MTW) and attach a copy of your letter. **Specify how many days extension you are requesting** on the request form.
- If your desired accommodation is outside the scope of your Accommodation Letter
 (ex. your letter includes "extensions of up to 7 days" but you need more time than that)
 you will need to meet with your AccessAbility consultant and have them email Keely
 (keely.hicks@utoronto.ca) detailing the accommodations required.

For missed term tests or assignments in **OTHER CIRCUMSTANCES**:

Submit the Request for Missed Term Work Accommodations form (http://uoft.me/PSY-MTW), along with:

- In the case of a **death of a family member or friend**, please provide a copy of a death certificate.
- For U of T varsity-level or professional athletic commitments, an email from your coach or varsity administrator should be sent directly to Keely Hicks
 (keely.hicks@utoronto.ca) well in advance of the missed work, detailing the dates and nature of the commitment.
- For religious accommodations, please email (<u>keely.hicks@utoronto.ca</u>) well in advance of the missed work.
- For circumstances outside of these guidelines, please email Keely (keely.hicks@utoronto.ca) on or before the date of the test / assignment deadline to describe your circumstances and ask what documentation would be appropriate

Documents covering the following situations are NOT acceptable: medical prescriptions, personal travel, weddings/personal/work commitments.

Procedure:

Submit your (1.) <u>request form</u> and (2.) <u>medical/self-declaration</u>/other documents in person **WITHIN 3 BUSINESS DAYS** of the missed term test or assignment.

<u>Submit to:</u> Keely Hicks, Room SW420B, Monday – Friday, 9 AM – 4 PM. (Slide forms under door if out of office.)

After submitting your documentation, within approximately one to five business days, you will receive a response from your instructor detailing the accommodations to be made (if any).

You are responsible for checking your official U of T email and Quercus course announcements daily, as accommodations may be time-critical.

You should continue to work on your assignments to the best of your ability, as extension accommodations may be as short as one business day, depending on the nature of the illness/emergency.

If an accommodation has been granted but you are unable to meet the conditions of the accommodation (ex. you need a longer extension, or you missed a make-up test), you will need to repeat the missed term work procedure and submit additional forms to request further

accommodation. Note that in the case of a missed make-up test, an opportunity to write a second make-up test may not be provided.

Completion of this form does NOT guarantee that accommodations will be made. The course instructor reserves the right to decide what accommodations (if any) will be made. Failure to adhere to any aspect of this policy may result in a denial of your request for accommodation.

Missed Accommodations

If an accommodation is granted but a continued illness/emergency prevents you from meeting the requirements of your accommodation, you must <u>repeat</u> the missed term work procedure to request additional accommodations.

(E.g.) If you miss a make-up midterm, you would need to submit <u>another</u> Request for Missed Term Work Accommodations form. If your original medical note / documentation included the date of the make-up midterm, then only the Request form is required. If the date of the make-up midterm fell outside of the dates indicated on your original medical note/other documentation, then a new medical note/other appropriate documentation must also be submitted.

Importance of Three Business Day window:

If you are unable to submit your documents in-person within the three business day window, you must email Keely (keely.hicks@utoronto.ca) within the three business day window to explain when you will be able to bring your documents in person. Exceptions to the documentation deadline will only be made under exceptional circumstances. Attach scans of your documentation, and be prepared to bring your documents to Keely in-person as soon as you are well. Late documents may not be accepted.

NOTE: Assignments due at end of term

Instructors cannot accept term work any later than five business days after the last day of class. Beyond this date, you would need to file a petition with the Registrar's Office (https://www.utsc.utoronto.ca/registrar/term-work).

NOTE: Final Exams

This policy applies only to missed assignments and term tests. Missed final exams are handled by the Registrar's Office (http://www.utsc.utoronto.ca/registrar/missing-examination).

Policy on Missed Final Examinations: students are expected to write the final examination. If a student fails to write the final examination, they may petition the Registrar's office for permission to write a deferred exam, but note that the Registrar's office only grants these petitions under conditions of illness or extreme emergency at the time of the examination (see http://www.utsc.utoronto.ca/registrar/deferred-exams for more details). Thus, you must ensure that you have proper documentation to support your petition (e.g., documented family emergency, or UTSC medical certificate). Students who fail to provide proper documentation for missing the final exam will receive a mark of 0% on that exam.

7.0 ADDITIONAL INFORMATION

Help With Writing

If you would like help with academic writing, the following resources are available to you:

- The Centre for Teaching and Learning (AC312) Writing Centre offers students one-to-one

appointments and supplementary materials to help improve upon their writing skills. http://ctl.utsc.utoronto.ca/home/
http://ctl.utsc.utoronto.ca/twc/

- The English Language Development Centre offers support and specialized writing programs for students who do not speak English as their primary language. http://ctl.utsc.utoronto.ca/eld/
- Advice on academic writing http://www.writing.utoronto.ca/advice

Academic Integrity

Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The University of Toronto's Code of Behaviour on Academic Matters (http://www.governingcouncil.utoronto.ca/Assets/Governing+Council+Digital+Assets/Policies/PDF/ppjun011995.pdf) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences. Potential offences include, but are not limited to:

In papers and assignments:

- Using someone else's ideas or words without appropriate acknowledgement;
- Submitting your own work in more than one course without the permission of the instructor;
- Making up sources or facts;
- Obtaining or providing unauthorized assistance on any assignment.

On tests and exams:

- Using or possessing unauthorized aids;
- Looking at someone else's answers during an exam or test;
- Misrepresenting your identity; and
- When you knew or ought to have known you were doing it.

In academic work:

- Falsifying institutional documents or grades;
- Falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes; and
- When you knew or ought to have known you were doing so.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If students have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, they are expected to seek out additional information on academic integrity from their instructors or from other institutional resources.

Note:

You may see advertisements for services offering grammar help, essay editing and proof-reading. Be very careful. If these services take a draft of your work and significantly change the content and/or language, you may be committing an academic offence (unauthorized assistance) under the *Code of Behaviour on Academic Matters*.

It is much better and safer to take your draft to the Writing Centre as early as you can. They will give you guidance you can trust. Students for whom English is not their first language should go to the English Language Development Centre.

If you decide to use these services in spite of this caution, you <u>must</u> keep a draft of your work and any notes you made before you got help and <u>be prepared to give it to your instructor on</u> request.

Turnitin

Written assignments may be subject to submission for textual similarity review and detection of possible plagiarism using the commercial plagiarism detection software under license to the University (http://www.turnitin.com). If used, 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 web site.

Access Ability Services

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the AccessAbility Services as soon as possible.

AccessAbility Services staff (located in Rm SW302, Science Wing) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations 416-287-7560 or email ability@utsc.utoronto.ca. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.

Literature Searches

Students can use the following resources when conducting literature searches to find relevant articles for their presentation and final essay:

The UTSC Library (AC235) http://www.library.utoronto.ca/utsc/

PubMed

http://www.ncbi.nlm.nih.gov/pubmed

PsychINFO

http://www.apa.org/pubs/databases/psycinfo/index.aspx

Google Scholar http://scholar.google.ca/

For Your Health

The Health and Wellness Centre (SL270, 416-287-7065) provides diagnostic, treatment and referral services for all illnesses ranging from the medical to psychological to health promotion. The professional staff of physicians, nurses and counselors provides personal advice and assistance with family issues, eating disorders, depression, stress, drug and alcohol abuse, relationship issues, a positive space for gender/sexuality issues, and more. http://www.utsc.utoronto.ca/wellness