

## COURSE SYLLABUS

**Course:** PSYCH 3A03 AUDITION

**Prerequisites:** One of BIOL 2A03, ISCI 2A18, LIFE SCI 2C03, PNB 2XA3, PNB 2XB3, PSYCH 2E03, PSYCH 2F03 or PSYCH 2NF3.

**Instructor:** Dr. Paul Faure                      Department of Psychology, Neuroscience & Behaviour, PC 111  
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**Course TAs:** Riziq Sayegh                      PC 151; Phone: ext. 26042; email: sayeghr@mcmaster.ca  
Brandon Aubie                                  PC 320; Phone: ext. 26228; email: aubiebn@mcmaster.ca

**Office Hours:** By appointment. The best way to contact us is via email.

**Location:** Lectures are held on Tuesday, Thursday and Friday from 1130-1220 hrs in MDCL 1110.  
Tutorials are held on Monday from 1330-1420 hrs in Hamilton Hall 109.

**Textbook:** Yost WA (2007) Fundamentals of Hearing: An Introduction. Academic Press (5th Edition).

**Logistics:** McMaster University reserves the right to change course dates, assignments and their grading weights, and deadlines in case of an emergency, labour disruption, civil unrest/disobedience, etc.

**Overview:** PSYCH 3A03 is a Faculty of Science course intended for junior or senior undergraduates in the fields of Psychology and Biology. The course provides an introduction to the biology of hearing and auditory perception. The emphasis is on fundamental auditory principles, their underlying physiological mechanisms, and experimental methods used in hearing research. Topics include physical acoustics; sound analysis; structure (neuroanatomy) and function (electrophysiology) of the mammalian auditory system; auditory perception; and psychoacoustics.

**Website:** Check <<http://www.science.mcmaster.ca/psychology/faure/>> for info and updates.

The following policies are necessary in order to be fair and equitable to all students.

**Audio and Video Recordings.** The recording of lectures and exams (video or audio) is prohibited.

**Attendance.** You are expected to attend all lectures, tutorials and exams. If you are late, please do not disrupt and/or disturb your fellow students who arrived in a timelier manner and are already seated and working. Talking during lecture or tutorials, and related disturbing behaviour, is inconsiderate. Do not schedule holiday travel during lectures, tutorials or exams.

**Lectures / Tutorials.** You are responsible for all material presented in lecture and in tutorial sessions. Tutorials will be used to supplement lectures and to provide more detailed examples, problems and demonstrations of relevant course material.

**Readings.** In this course you are expected to go beyond the memorization of facts to display an understanding of the material. Some students will find this difficult. You are strongly encouraged to read the relevant text chapters on a particular topic before and after the lecture/tutorial devoted to that topic. The initial reading will help you to follow along during the lecture/tutorial and to identify those areas in which you are having difficulty understanding. The follow-up reading(s) will help you to recall, synthesize and consolidate the material that was presented.

**Notes.** Handouts and problem sets will be posted as PDF files on the course website. Psych 3A03 has no course packet because it is absolutely essential that you attend class and develop proper note-taking skills. If you miss a lecture/tutorial, it is your responsibility to obtain the notes on this material from a classmate. I advise against trying to take verbatim notes during lectures/tutorials because it will be difficult for you to keep up and to think critically about what is being discussed. Moreover, most of the material discussed in class can also be found in the text or by searching the web, albeit presented from a different perspective. Slides shown in class will not be posted on the web because of copyright restrictions. To consolidate your knowledge, students are encouraged to search the web to obtain additional information and/or pictures pertinent to a particular topic.

**Grading.** Your performance in the course will be evaluated with 3 multiple-choice examinations and 2 writing assignments. The first two exams will be Mid-Term Examinations of one-hour duration each and will be held in-class. Each Mid-Term will count for 25% of your Final Grade. The third exam will be a Final Examination of three-hours duration and will be scheduled by the Office of the Registrar. The Final Exam is cumulative and will count for 40% of your Final Grade. Calculators, books, notes, etc. are prohibited during all examinations; all you will need is a supply of pencils, erasers and, of course, adequate knowledge of the subject matter being tested. The Writing Assignments are worth 10% of your Final Grade (5% each) and instructions for these assignment will be posted on the course website.

**Makeup Exams.** If you miss an exam you will need to have a valid excuse AND be able to document this excuse in order to qualify for a makeup examination. Examples of legitimate excuses include sickness, religious holiday, and conflict with another M.U. academic or sporting event. If you simply skip an exam, hoping that an eventual excuse will become acceptable, then you will receive a zero for that exam. Psych 3A03 does not subscribe to proposals for “extra work” in mitigation of exam delinquencies. Except in the case of illness, **a makeup exam will NOT be given unless arrangements are made with the course Instructor or TAs in advance of the regularly scheduled examination.** In the case of minor medical illness lasting fewer than five days, you must report the illness using the McMaster Student Absence Form (MSAF) and contact the course instructor and/or TAs within 2 working days of the missed exam in order to qualify for a makeup exam. Note that the MSAF may only be used once per term and may NOT be used for the final exam. In the case of major medical illness, you must submit a medical note to your Faculty office within 5 working days of the missed exam in order to qualify for a makeup exam.

**Review Sessions.** The tutorial period prior to each Mid-Term Examination will be used as a question and answer session and to review course material presented in class and during tutorials. You will benefit greatly from these sessions by coming prepared with specific questions in mind. Do not expect the course Instructor or TAs to repeat the original lecture on a particular topic.

**Seeking Help.** Please ask the course Instructor or TAs for help at any time if you need it. As a learner, it is your responsibility to recognize when you need help and then ask for it.

**Academic Dishonesty.** Academic dishonesty consists of misrepresentation by deception or by other fraudulent means, and can result in serious consequences for a student such as the grade of zero on an exam or assignment, loss of course credit with a notation on the student’s transcript that reads “*Grade of F assigned for academic dishonesty*”, and/or suspension or expulsion from McMaster University. It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty, please refer to McMaster’s Academic Integrity Policy located at <http://www.mcmaster.ca/academicintegrity>.

**Course Calendar** (subject to revision) & **Assigned Readings** [Y### = pages to read from textbook]

- SEPT R08: Physical Acoustics 1. The Nature of Sound Waves [Y01-07; Y18-25]  
F09: Physical Acoustics 2. Simple Harmonic Motion [Y11-14; 263-267]  
M12: Harmonic Motion Tutorial (*Full Moon*)  
T13: Physical Acoustics 3. Describing Sound [Y14-18]  
R15: Physical Acoustics 4. Sound Intensity and Pressure [Y269-270]  
F16: Physical Acoustics 5. Sound Transmission I: Propagation, Absorption & Attenuation [Y27-36]  
M19: Decibels Tutorial [Y25-27]  
T20: Physical Acoustics 6. Sound Transmission II: Reflection, Refraction & Diffraction (*Autumnal Equinox*)  
R22: Physical Acoustics 7. Simple versus Complex Sounds [Y37-52]  
F23: Sound Analysis 1. Fourier Analysis [Y271-273]  
M26: Complex Sounds Tutorial  
T27: Sound Analysis 2. Resonators [Y53-55] (*New Moon*)  
R29: Sound Analysis 3. Filters [Y55-63]  
F30: Audio Demonstrations  
M03: Review Session
- OCT T04: **Mid-Term Examination**  
R06: Peripheral Auditory System 1. Outer and Middle Ear [Y67-81]  
F07: Peripheral Auditory System 2. Inner Ear: Anatomy [Y83-90]  
M10: No Class (*Thanksgiving Day, Canada*)  
T11: Peripheral Auditory System 3. Inner Ear: Cochlear Mechanics & Function [Y90-102] (*Full Moon*)  
R13: Peripheral Auditory System 4. Hair Cells, Cochlear Potentials & Emissions [Y103-113]  
F14: Peripheral Auditory System 5. The Auditory Nerve [Y113-120; Y287-293]  
M17: Peripheral Auditory System Tutorial  
T18: Peripheral Auditory System 6. The Neural Code [Y121-131; Y281-286]  
R20: Peripheral Auditory System 7. Afferent & Efferent Physiology [Y131-140]  
F21: Central Auditory System 1. Organization & Neuroanatomy [Y223-229]  
M24: Central Auditory System Tutorial  
T25: Central Auditory System 2. Electrophysiology I: Cochlear Nucleus [Y229-241]  
R27: Human Speech Production [Y215-217]  
F28: TBA  
M31: Review Session (*Halloween*)
- NOV T01: Central Auditory System 3. Electrophysiology II: Midbrain & Cortex [Y241-248]  
R03: Central Auditory System 4. Electrophysiology III: Single Cell Responses  
F04: Auditory Psychophysics [Y275-279]  
M07: Review Session  
T08: **Mid-Term Examination II**  
R10: Psychoacoustics 1. Threshold Detection [Y143-150] (*Full Moon*)  
F11: Psychoacoustics 2. Discrimination Detection [Y150-157]  
M14: Signal Detection Theory Tutorial  
T15: Psychoacoustics 3. Spectral Masking [Y159-163; 184-187]  
R17: Psychoacoustics 4. Critical Bands [Y163-166]  
F18: Psychoacoustics 5. Temporal Masking [Y166-172]  
M21: Auditory Perception Tutorial  
T22: Psychoacoustics 6. Binaural Hearing: Sound Localization & Lateralization [Y173-184]  
R24: Psychoacoustics 7. Loudness Perception [Y189-191] (*New Moon*)  
F25: Psychoacoustics 8. Pitch Perception [Y191-199]  
M28: Perception of Complex Sounds Tutorial  
T29: Psychoacoustics 9. Perception of Complex Auditory Signals I: Spectral Cues [Y203-209]
- DEC R01: Psychoacoustics 10. Perception of Complex Auditory Signals II: Temporal Cues [Y209-221]  
F02: The Abnormal and Aging Auditory System [Y249-261]  
M05: Course Wrap Up and Review Session

**Important Dates**

- 16 September 2011 (Friday): Last day for registration and adding or dropping courses  
04 October 2011 (Tuesday): **Mid-Term Examination I**  
10 October 2011 (Monday): Thanksgiving (no classes)  
08 November 2011 (Tuesday): **Mid-Term Examination II**  
11 November 2011 (Friday): Last Day for canceling courses without failure by default  
07-21 December 2011: **Final Examination** (date & time scheduled by the Office of the Registrar)