

SYLLABUS
COMD 457: Hearing Science, 2 s.h.
University of Wisconsin-Stevens Point
Fall 2016
T/R 3-3:50 pm
Room 229, CPS

Professor: Dr. Rebecca L. Warner Henning
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Office Hours: Monday 3:00-4:00, Wednesday 2:30-3:30, Friday 11-noon, or by appt.

E-mail: I will typically reply within 1-2 business days, but it may be slightly longer if your email does not require an urgent reply. I cannot guarantee that I will check or respond to email during evenings and weekends (I may be out of town or busy with family responsibilities). If you believe that you are delayed on an important matter because I have not replied to your email within 2 business days, then you are responsible for contacting me in person or over the phone (leave a voicemail message if I do not answer).

Prerequisites and Co-requisites:

- CSD 260, 264, 345, & 351; and
- Math 100; and
- Phys 115 recommended
- OR consent of instructor

Course Description:

This course covers the physical characteristic of sound, anatomy and physiology of the auditory and vestibular (i.e., balance) systems, and perception of sound (i.e., psychoacoustics). The course is designed for students who are majoring in Communication Sciences and Disorders, but may be of interest to students in other majors. The course will provide pre-audiology students with sufficient background for AuD-level course work, and will also cover information that will be useful to future speech-language pathologists. Specific applications of the course material in both normal and disordered populations will be discussed.

Required Textbook:

Emanuel, D. C., & Letowski, T. (2009). *Hearing Science*. Baltimore: Lippincott Williams & Wilkins.

Additional required readings will be available on the course D2L site or online.

Course Objectives:

1. Students will demonstrate knowledge of the physical characteristics of sound, and will apply that knowledge to some examples of sound in the environment, and to normal and disordered hearing.
2. Students will demonstrate knowledge of the anatomy and physiology of the peripheral and central auditory system, and will apply that knowledge to some examples of normal and disordered hearing.

- Students will demonstrate basic knowledge of sound perception (i.e., psychoacoustics) in humans, and will apply that knowledge to some examples of normal and disordered hearing and perception.

Instructor’s Objectives:

In order to help you achieve the above objectives, I will do the following:

- 1) Prepare classes that include a mix of lecture and learning activities that are designed to engage you in the material and facilitate your learning;
- 2) Explain difficult concepts to the best of my ability;
- 3) Be available during office hours to answer questions or discuss the material;
- 4) Provide a non-threatening environment in which it is acceptable to learn by trying new ideas, and to not always have the “right” answer.

Course Requirements

Exams: There will be three exams throughout the semester and one final exam. Exams are closed-book, closed-notes, and will be mostly multiple-choice with some short answer. **The final exam is comprehensive, and is on Monday, December 19, from 12:30-2:30 pm.**

In-Class Assignments: On some days (approximately 8-12 throughout the semester), there will be in-class assignments where you will be asked to review and/or apply information that has been recently covered. These will not be announced ahead of time, and they cannot be made up. Typically, these assignments may be completed individually or in small groups of 2-3 students. You will be required to turn in your assignment at the end of class. It will be graded as a 1 if it is completed, and as a 0 if it is incomplete or not turned in. You will be graded on the percentage of possible 1 grades that you earn, and you are allowed one free 0 grade without penalty. For example, if there are 11 of these assignments during the semester and you earn a “1” grade on nine of them and a “0” grade on two of them, then your semester grade for these assignments would be 90% (9/10), because you were allowed the one free “0” grade.

Electronic Devices

Due to the likelihood of distracting both the user and others in the class, electronic/mobile devices (computers, tablets, phones) may not be used during class lectures or exams, but may be used during in-class assignments. If you require an electronic device due to a documented disability or other special circumstance, please see me as early as possible in the semester.

Grading

Your final grade is determined by averaging your percent correct (*not* total number of points) on the following components. I’ll calculate your final grade using the following weighting scale:

- In-class assignments (total) 10%
- Exams I, II, and III 21.67% for each exam
- Final Exam 25%

Grading Scale:

UWSP Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	F
Percentage	92-100	90-91.9	88-89.9	82-87.9	80-81.9	78-79.9	72-77.9	70-71.9	68-69.9	60-67.9	<60

Grading and Making Up Exams:

If you believe a mistake has been made in recording one of your grades, please bring it to my attention as soon as possible, and **no later than BEFORE the final examination begins.** If you believe there is a mistake in your final exam grade, please bring it to my attention as soon as possible.

Exams will not be returned to you, but you are welcome to come to my office hours (or email me to make an appointment) to look at your exam. If you do not understand why you earned a particular grade or a particular number of points, you may ask me politely in order for you to better understand what you did wrong. Please do not request a change to your grade. I will automatically (even without you asking) consider the possibility of a grade change, and if I believe that a change is warranted, I will make the change. If you believe I made a mistake in adding points, please feel free to politely bring it to my attention.

If you believe you will need to miss an exam, you must notify me **as soon as possible.** Exams may only be made up for excused reasons such as major illness or family emergency, and please be prepared to provide documentation whenever possible. (I understand that Student Health Services does not provide notes excusing students from class). A make-up exam may be different from the regular exam, but will cover the same content.

In general, in-class assignments may not be made up, but you are allowed one free "0" grade with no penalty. If you have extenuating circumstances (such as hospitalization or ongoing major family emergency) that may cause you to miss multiple classes and in-class assignments during the semester, please see me and we may be able to arrange a make-up plan.

Please understand that assignment and exam schedules are intended to foster equal opportunity for each student in the class. Out of respect to your classmates, please act and plan responsibly to meet the same requirements as everyone else.

Please refer to the Division of Student Affairs for a description of your rights and responsibilities:
<http://www.uwsp.edu/stuaffairs/Pages/default.aspx>.

Please refer to UWSP Academic Affairs and Dean of Students Offices for other information pertaining to academic conduct; in particular, see the University handbook, especially chapter 5 regarding classroom activities: <http://www.uwsp.edu/acadaff/Pages/handbook.aspx>.
<http://www.uwsp.edu/AcadAff/Handbook/CH5-6%2011-12.pdf>
<http://www.uwsp.edu/dos/Pages/Information%20for%20Students.aspx> (Dean of Students)

Professionalism:

This class is part of your training for your professional career. Professional behavior and attitude are expected. This includes, but is not limited to, respect and tolerance of others, and acting responsibly and with integrity.

For examples of Codes of Ethics for Speech and Hearing Professionals, see:

American Academy of Audiology Code of Ethics

<http://www.audiology.org/resources/documentlibrary/Pages/codeofethics.aspx>

Or

American Speech-Language Hearing Association Code of Ethics

<http://www.asha.org/policy/ET2010-00309/>

Academic Misconduct:

Academic misconduct will not be tolerated, and the UWSP Student Misconduct procedures will be followed for any instances of academic misconduct.

Definition of Academic Misconduct :

From the UWSP Handbook, Chapter UWSP 14, August 2016, pages 10 - 20

<http://www.uwsp.edu/AcadAff/Handbook/CH5-6%2011-12.pdf>

UWSP 14.03 Academic misconduct subject to disciplinary action.

(1) Academic misconduct is an act in which a student:

- (a) Seeks to claim credit for the work or efforts of another without authorization or citation;
- (b) Uses unauthorized materials or fabricated data in any academic exercise;
- (c) Forges or falsifies academic documents or records;
- (d) Intentionally impedes or damages the academic work of others;
- (e) Engages in conduct aimed at making false representation of a student's academic performance; or
- (f) Assists other students in any of these acts.

(2) Examples of academic misconduct include, but are not limited to: cheating on an examination; collaborating with others in work to be presented, contrary to the stated rules of the course; submitting a paper or assignment as one's own work when a part or all of the paper or assignment is the work of another; submitting a paper or assignment that contains ideas or research of others without appropriately identifying the sources of those ideas; stealing examinations or course materials; submitting, if contrary to the rules of a course, work previously presented in another course; tampering with the laboratory experiment or computer program of another student; knowingly and intentionally assisting another student in any of the above, including assistance in an arrangement whereby any work, classroom performance, examination or other activity is submitted or performed by a person other than the student under whose name the work is submitted or performed.

Students with Disabilities:

If any student has a documented disability and requires accommodations in meeting these requirements, please see me as early as possible in the semester to discuss accommodations. Please note that I cannot apply accommodations retroactively to a class requirement that you've already completed. Thus, if you are unsure whether or not you need an accommodation, it is best to discuss the possibility with me beforehand, and we can then decide the best way to proceed.

Religious Observances:

I will accommodate religious beliefs according to UWS 22.03 if you notify me within the first 3 weeks of the semester regarding specific dates with which you have conflicts.

Course Schedule:

The course schedule is tentative and subject to change; however, the schedule for exams will not change.

Day	Date	Topic	Required <i>Textbook</i> Reading (Additional required readings may be posted on D2L).
T	September 6	Watch screencast posted to D2L & complete first assignment (introduction) No class meeting; Dr. Henning will be at AuD orientation in Madison Introduction to course & expectations	
Th	September 8	Waves, pressure, wavelength, velocity, impedance, sound pressure & intensity	89-93, 96, 98-102
T	September 13	Waves, pressure, wavelength, velocity, impedance, sound pressure & intensity	89-93, 96, 98-102
Th	September 15	Taxonomy of sounds	102-106
T	September 20	Absorption, reflection, refraction, reverberation	107-116
Th	September 22	Reverberation, diffraction, interference	112-118
T	September 27	Catch-up/application	
Th	September 29	Exam I	
T	October 4	Doppler effect, SNR	119-124
Th	October 6	Acoustic systems	124-127
T	October 11	Decibels	129-135
Th	October 13	Decibels	136-142
T	October 18	Decibels	142-147
Th	October 20	Outer ear	151-156
T	October 25	Catch-up/application	
Th	October 27	Exam II	
T	November 1	Middle ear	156-160
Th	November 3	Middle ear	160-164
T	November 8	Inner ear and auditory nerve	165-174
Th	November 10	Inner ear and auditory nerve	174-181
T	November 15	Inner ear and auditory nerve	Sections of chapter 12 TBD
Th	November 17	Bone conduction: outer, middle, and inner ear	204-210
T	November 22	Exam III	
Th	November 24	No class: Happy Thanksgiving!	
T	November 29	Central auditory system	185-198
Th	December 1	Central auditory system	198-203, sections of chpt. 12 TBD

T	December 6	Central auditory system	Sections of chpt. 12 TBD
Th	December 8	The vestibular / balance system	181-183
T	December 13	Catch-up/applicaton	
Th	December 15	Catch-up/applicaton/review	
M	December 19, 12:30-2:30 9m	Final Exam	