DEPARTMENT OF COMMUNICATION SCIENCES & DISORDERS
COLLEGE OF EDUCATION, THE UNIVERSITY OF GEORGIA

CMSD 6800 / 4800
NEURAL BASES OF SPEECH, LANGUAGE, & HEARING

FALL 2002. TUES & THURS 12:30 - 1:45 PM ADERHOLD 581 (3 HRS.)

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Office Hours: Wednesday, 10 am -12 pm & Friday, 10 am - 11:30 am.

Please feel free to drop-in and visit with me or the GA during posted office hours in order to ask questions, seek tutoring or discuss any concerns regarding the class. Questions via e-mail are also welcomed. If you cannot attend any of the posted office hours, other meeting times may be scheduled by appointment only.

LISTSERV

Check these e-mails for class announcements, neurospeech-L@listserv.uga.edu

WebCT

- Open your preferred web browser.
- Go to the following URL: https://webct.uga.edu/ . Select the tab **"Login to my WebCT"**. You must have the new **"UGA MyID"** to access the new version of WebCT.
- For those students who do not have an ARCHES account, you can create a "UGA MyID" at http://www.uga.edu/myid .

REQUIRED TEXTBOOKS & SUPPLIES

1. Purves, et al. (2001). **Neuroscience (2nd ed).** Sinauer Publishing Group.
2. Haines, D.E. (2000). **Neuroanatomy: An Atlas of Structures, Sections, & Systems (5th ed.)** Lippincottt Williams, & Wilkins Publishing.
3. Access to a PC or MAC computer with a CD-ROM and the Internet.

COURSE OVERVIEW

CMSD 6800 / 4800 is a lecture-style course designed to provide the student with a basic yet thorough understanding of the current principles in molecular and systems neuroscience that are related to normal neuromuscular control of the human vocal tract during communication and select non-speech behaviours. Select disorders will also be discussed (i.e., Parkinson disease, CVA, dystonias). Hands-on laboratory experiences will be provided throughout the semester. The content areas to be covered in CMSD 6800 / 4800 include the following topics (time permitting):

- Gross structure of the nervous system.
- Microstructure of the nervous system.
- Basic molecular neurobiology, neural signaling & synaptic transmission.
- Sensory Transduction.
- Somatosensory Systems.
- Motor Systems (Direct and Indirect systems)
- Brainstem Systems and the Cranial Nerves.
- Auditory Neurophysiology.
- Cerebral Cortex and Plasticity.
- Neural Control of Speech and Vocalization.

The objectives for this course include the following:

- Ability to comprehend basic underlying principles of neuroanatomy and neurophysiology along with the use of standard terminology.
- Comprehend the basic principals of neuromotor control and sensorimotor integration in the mammal.
- Demonstrate ability to identify and describe the location and function of all neural areas and systems along with their substructures, deemed important for speech and vocalization.
- Demonstrate the ability to analyze, synthesize and evaluate the importance of relationships that exist among central motor and sensory systems during functional control of the human vocal tract.
- Be able to analyze, evaluate and synthesize together the processes for selecting, sequencing and timing the various neural phenomena needed to produce a voluntary action in the vocal tract (from idealization to production).
- Appreciate the comparative diversity of human neuroanatomy and neurophysiology as it pertains to vocalization in different age group populations, genders and across differing states of health & disease.
- Be able to relate your knowledge of normal neuroanatomy and neurophysiology to appreciate more fully the pathophysiology of speech and non-speech disorders due to brain injury, certain progressive disease processes, and select congenital abnormalities.

GRADING & ASSESSMENT PROCEDURES

- An exam will be given approximately every four weeks throughout the semester. A total of 4 exams will be administered, each worth 50 points. All exams are objective in format (i.e., multiple choice, fill-ins, matching, brief essays, perhaps some lab rounds, etc.). Exam questions will be derived equally from lectures, outlines, textbook readings, and any other outside readings. This means that attendance in class is important and will benefit you on exam days.
- There is technically no final exam, but on the day and time of your normally scheduled final exam you will take Exam 4 during the first 1.25 hours of the period.
- If you are satisfied with your performance in the class, then you are done after completing Exam 4.
- **If you are not satisfied with your grade, then you have the choice of taking an Optional Replacement Test worth 50 pts during the second hour of the scheduled exam period.**
- **If you select the replacement option, I will exchange your lowest exam grade with that from the Optional Replacement Test. If the optional test grade is lower than your original exam score, then you will retain your original score. In other words, there is no penalty for trying to improve your grade by taking the replacement test option.**
- **The Optional Replacement Test will be broadly cumulative over material from the whole semester.**

Exam Dates – Fall 2002	
Exam 1 (50 pts)	September 19th
Exam 2 (50 pts)	October 10th
Exam 3 (50 pts)	November 7th
Exam 4 (50 pts)	December 17th @ 8 am – 9:15 am
***Optional Test** (50 pts)	December 17th – 9:45 – 11 am

Paper

All students will write a brief research-based report on the following topic:

- ***Topic:*** *How may neurophysiological and/or neuroanatomical studies performed on mammals such as cats, primates and even birds, help us to understand normal and/or disordered processes of vocalization, speech & language in humans?*
- Some example issues to address in your paper include:
  - What are some of the important insights and findings on the neural bases of human speech and vocalization that have been discovered using animal models in the last 20 years?
  - Is the data from an animal really applicable to human speech and vocalization physiology? Why, or why not?

- How closely related is the structure of human and non-human mammalian brains?
- What behaviours in animals can we study that are "like" speech in terms of its performance? Are there any similar behaviours we can use?

- **Please come by my office to show me the papers that you are choosing or for help on organizing your paper.**
- **Reference sources you can & cannot use:** You are free to use any scholarly research journal in the allied-health, medical-neurology, and neuroscience domain as a reference. You may NOT use any websites, e-journals (unless associated with a print research journal), internet newsgroups, or listserv discussions as a reference.
- **Due Dates:** Papers are due by December 3rd @ 5 pm to my office, but I will gladly accept papers at anytime during the semester if you decide to complete this assignment early. Please submit your final draft as a hardcopy.
- **Submission Formatting:** Your paper should be **no more that 5 double-spaced pages with references** (as per APA 5th edition). Use 10 or 12 pt font. References may be single spaced. Also, format using 1" margins, page #'s in the bottom right corner, and your name in the header on each page. No handwritten papers will be accepted.
- **Evaluation:** This paper is worth 50 points. Based on the following rubric:
  - Did the writer defend their position using the appropriate research literature effectively? (10 pts)
  - Were the writer's points and topics clearly stated? (10 pts)
  - Did the paper flow in a logical and organized manner? (10 pts)
  - Succinctness and originality of the argument? (10 pts)
  - Grammar, spelling, adherence to APA form, presentation, etc. (10 pts)

Final Grades

- Your final grade for this course will be based on a grand total of **250 points** summed across your 4 highest exam scores and the research paper.
- Point totals will be translated into letter grades as follows:
  1. 225-250 pts = A
  2. 200-224 pts = B
  3. 175-199 pts = C
  4. 150-174 pts = D
  5. 000-149 pts = F

COURSE POLICIES SPECIFIC TO THIS CLASS:

- Those students with documented special needs (such as cognitive, learning or physical handicaps), please see me during the first few days of class so that we may discuss your case and plan any modifications to the course that may be necessary.
- A grade of C or better is required in order for this course to count toward your completion of a graduate degree in communication sciences and disorders.
- There are no extra-credit assignments provided.
- There is no official attendance policy for this course. Being in class everyday is your responsibility.
- Make up quizzes and exams will only be given in cases of documented illnesses and/or emergencies, and are at the discretion of the instructor.
    1. In case you are suddenly ill or have an emergency, please let me know your status within 72 hours of the missed quiz or exam date by e-mail or in person.
    2. Any notification after the 72 hour period will not be accepted and you will not be able to make up the missed exam or quiz.
- Please refer to your current student bulletin and the Fall 2002 Schedule of Classes for details about drop/add, course withdrawal policies and procedures, and any other general UGA academic policies.
- The University of Georgia's Policy on Academic Honestly will be STRICTLY followed for this course. In summary, all students are responsible for maintaining the highest standards of honesty and integrity in every phase of their academics. The penalties for academic dishonesty are severe and ignorance is not an acceptable defense. All students are responsible for informing themselves about UGA's academic honesty standards before performing any academic work. You can familiarize yourself with the UGA Academic Honesty Policy by referring to the following web page for details:

  http://www.uga.edu/ovpi/academic_honesty/academic_honesty.htm
- As recommended by *UGA's Office of Vice President for Instruction*, a few examples of academic dishonesty specific to this course are offered:
    1. Using references or detailed information from the internet without properly crediting or citing original authorship and passing this information off as your own original work.
    2. Working collaboratively with other students to develop and write the research paper. In other words, two or more students working together to come up with a single argument that each person then uses for their own paper.
    3. Purchasing pre-completed papers from the internet and passing them off as your own original work.

SOME FRIENDLY SUGGESTIONS TO HELP YOU SUCCEED

- Download the notes from WebCT and review them prior to class.
- Visit my office hours if you are confused or need further explanations.
- Do the readings.
- Do the readings before lecture. This way the stuff I lecture on isn't brand new to you.
- Study your material and brain atlas a little everyday in order to keep the anatomy fresh in your mind (Trust me, it will be very difficult to cram all this neuroanatomy the night before a quiz or exam – like they say…'been there, done that ☺.
- ASK QUESTIONS IN CLASS. There is NO such thing as a stupid or silly question, so….. Please ask if something related to the lecture is not clear in your mind.
- Please read the tutorial on using the Sylvius CD-ROM that accompanies your textbook. Be sure to use this software in accordance with the suggestions in your readings. This CD-ROM is also excellent for quizzing yourself and studying. This is a beautifully designed software package (I wish I had this in school).
- Develop study groups to help quiz each other and fill-in pieces of information from lecture or the readings you may have missed.
- Review past material before tackling new information. This course is additive in that your understanding of new concepts depends on your understanding of past material.
- Relate new information as much as possible to something you've already learned.
- Draw lots of your own pictures and flow charts.
- Make up your own analogies and real-world examples to help you remember the material as you study. (These tend to stick with you for the long haul)
- **Last, (but not least), if your having trouble with the content, get help from me, the GA or one of you classmates ASAP! Please, don't wait !**

WEB-SITES FOR HELP AND INFORMATION

- CMSD Home Page: http://www.coe.uga.edu/csd/
- Login to my WebCT: https://webct.uga.edu/
- UGA MyID: http://www.uga.edu/myid
- Student Resources for WebCT: https://webct.uga.edu/www/student.html
- Student Electronic Services: http://www.uga.edu/ses/
- Division of Academic Assistance: http://www.uga.edu/daa/
- Important Dates for Students: http://www.reg.uga.edu/or.nsf/public/acalendar
- UGA Libraries: http://www.libs.uga.edu/
- University Computing and Networking Services: http://www.uga.edu/ucns/
- Computer Lab Sites @ UGA: http://www.uga.edu/ucns/sites/
    - Lastly, it's important to have fun and play too: http://www.uga.edu/recsports/

6800 / 4800 Topic Schedule and Text Readings

- Topic dates are flexible and strongly influenced by the pace of the class. The course syllabus is a general plan for the semester. Deviations announced to the class by the instructor (either verbally, through listserv e-mails and/or through postings on the course website) may be necessary.
- The Haines brain atlas is for your own study, to help you visualize the structures and pathways we are discussing or reading about.
    - I will assign specific plates/pages from the atlas for each lecture topic. Please study these plates. Only, these plates will be fair game for exams.
- I will also post specific pages to read for each chapter on the course web site. Be sure to check the course website regularly for updates and announcements.
- Dates that are **BOLDED** signify exam dates.

Meeting Dates	Topic	Purves
August 20, 22, 27, 29. **September** 3, 5, 10, 12,	Gross structure of the human nervous system. Basics of cellular and molecular neurobiology. *(this sounds more scary than it actually is)*	Ch. 1 & Sections of Chapters. 2 - 6
September 17, **19**, 24, 26. **October** 1,	Sensory transduction, & somatosensory systems and sensory cortex plasticity.	Ch.9
October 3, 8, **10**, 15, 17, 22,	Neuromuscular control of movement, descending motor pathways, & motor plasticity	Ch. 16 - 17
October 24, 29, ***31st – The GAME*** **November** 5, **7**, 12, 14, 19,	Cerebellum & Basal ganglia. Neural control of language. *Guest Speaker (TBA)*	Ch. 19 & Ch. 18 Ch. 27
November 21, 26. ***28 - Thanksgiving***	Cranial Nerves	Ch. 1
December **3 (Papers Due),** 5	Central Auditory System	Ch. 13
Exam 4 - Tue, December 17, 2002, 8 am – 11 am and ***Optional Replacement Test***		