

**Neural Basis of Communication (SPAU 3345)**  
**The University of Texas at Dallas**  
**Spring 2013**

<b>Instructor</b>	Diane Garst, M.S., CCC-SLP	<b>Class days/time</b>	Mon/Wed 4:00-5:15pm
<b>Office</b>	Callier Richardson (CR), 1.530	<b>Class location</b>	CR 1.202
<b>Telephone</b>	(972) 883-3610	<b>Office Hours</b>	Weds 1-2pm & by appointment
<b>E-mail</b>	digarst@utdallas.edu	<b>Teaching Assistant</b>	Sujin Shin alwaysjin@gmail.com

**Course Description**

This course will provide an introduction to the structure and function of the human brain and nervous system (including general organization, cranial nerves, neurons, neurotransmitters, ascending and descending sensory/motor pathways) as related to the fields of speech-language pathology and audiology.

After completing this course, students should be able to:

- Discuss the gross anatomy of the central and peripheral nervous systems
- Describe the neuromuscular control for normal speech and gestural production
- Discuss the central nervous system as it relates to normal language production and comprehension
- Describe the central and peripheral nervous systems as they relate to hearing, balance, and vision.
- Explain communication and hearing disorders associated with acquired neurological damage

**Required Resources**

Webb, W.G. & Adler, R. K. (2008). *Neurology for the speech-language pathologist (5<sup>th</sup> edition)*. Saint Louis, MO: Mosby Elsevier.

**Suggested resource**

Diamond, M.C., Scheibel, A.B., & Elson, L.M. (1985). *The Human Brain Coloring Book*. Oakville, CA: Collins.

**Course Pre-requisites, Co-requisites, and/or Other Restrictions**

None.

**Requirements**

**Assigned Reading:**

It is important to read the assigned materials (textbook with any additional recommendations) before each class.

**Class Attendance/Participation**

Students are responsible for information presented in lecture and from indicated portions of textbooks. Regular attendance to lectures is extremely valuable in this course – as many illustrations, videos, photographs will not be available otherwise. Questions and discussion during lecture is encouraged. Cell phones must be turned off in class.

**GRADING POLICY**

Acquired knowledge will be assessed via exams, case-study paper and assignment.

**Exams**

Exams will consist of multiple-choice, matching, true-false, fill-in-the-blank and short-answer questions. Exams will be given in class on the date assigned. The final exam is cumulative covering material across the semester. \*\*\*There will be no make-up exams unless (1) the instructor has been notified in advance of the exam via email or phone, and (2) there is evidence of sickness or emergency.\*\*\*

**Case-Study Paper**

Details to be discussed separately.

Submission to Turnitin.com by 5:45pm and paper copy turned in during lecture on Wednesday, May 1.  
100 points

**Illustrations Assignment** - Due in class **2pm on Friday, May 10** (50 points)

The study of neurology involves many structures that will be discussed in detail. To aid in visualization, you will compile a series of drawings or charts and label important structures (don't worry if you are not an artist - There are many illustrations available that can be used as resources!). A list of required structures/information to be included in this section will be posted online at the course section in eLearning and updated as the course progresses. Illustrations can be traced and in black & white or color. In some instances color may help! References should be cited following APA formatting at the bottom of each page as needed.

Final course grades will be calculated as follows:

- Case Study Paper (100 points)
- Illustrations Assignment (50 points)
- Exams 1-3 (100 points each = 300 points)
- Final Exam (150 points)

Point total will be divided by "6" to compute a 100 percentile figure for the final course grade

The Undergraduate Grading Scale will be used to assign semester grades.

A + {≥96.7%}	B + {≥86.7%}	C + {≥76.7%}	D + {≥66.7%}	F {▼60%}
A {≥93.3%}	B {≥83.3%}	C {≥73.3%}	D {≥63.3%}	
A - {≥90%}	B - {≥80%}	C - {≥70%}	D - {≥60%}	

<b>Tentative Course Schedule (subject to change or revision)</b>		
<b>Date</b>	<b>Lecture Topic</b>	<b>Readings</b>
Jan 14	Course introduction – Essential Principles	Ch 1
Jan 16	Basic principles of neuroscience and basic structures/terms	Ch 1
Jan 21	Gross Anatomy CNS	Ch 2
Jan 23	Gross Anatomy cont'	
Jan 28	Meninges & Ventricular system	Ch 3, pp. 54-65
Jan 30	Cerebrovascular System	
Feb 4	Anatomy at the neuronal level	Ch 4
Feb 6	Anatomy at the neuronal level cont'	
Feb 11	<b>Exam 1</b>	
Feb 13	Spinal Cord	Ch 2, pp. 43-44
Feb 18	Sensory systems & tracts	
Feb 20	Sensory systems & tracts cont'	Ch 5, pp. 107-112
Feb 25	Sensory systems & tracts cont'	
Feb 27	Motor systems & tracks,	Ch 6
March 4	Motor systems & tracks cont'	
March 6	<b>Exam 2</b>	
<b>March 11-15 Spring Break</b>		
March 18	<b>No Class</b>	
March 20	Upper/lower motor neurons & basal ganglia	
March 25	Upper/lower motor neurons & basal ganglia cont'	
March 27	Peripheral Nervous System	
April 1	Peripheral Nervous System	Ch 3, pp 48-54
April 3	<b>Exam 3</b>	
April 8	Cranial Nerves: smell/taste, vision, hearing & balance, face	Ch 7, pp. 152-158
April 10	Cranial Nerves: smell/taste, vision, hearing & balance, face	Ch 7, pp. 152-158
April 15	Cranial Nerves: tongue, jaw, soft palate, pharynx, larynx, head, shoulder	Ch 7, pp. 153-160
April 17	Cranial Nerves: tongue, jaw, soft palate, pharynx, larynx, head, shoulder	Ch 7, pp. 153-160
April 22	Neurogenic language and cognitive communication disorders	Ch 11

April 24	Neurogenic language and cognitive communication disorders cont'	Ch 11
April 29	Neurogenic speech disorders	Ch 8
May 1	Cases Discussion/Wrap up <b>Case Paper Due by 5:45pm on turnitin.com</b>	
Friday May 10	<b>Cumulative Final Exam 2-4:45pm</b> <b>Illustrations Assignment Due at 2pm</b>	

**ASHA Competencies and Standards Addressed in this Course:**

This course has been designed to ensure that students demonstrate required knowledge and skills as outlined in the Standards and Implementation Guidelines for the Certificate of Clinical Competence in Speech-Language Pathology/Audiology. The specific standards addressed in this course are: III-B, III-C, III-D, III-E, III-F

**STUDENT LEARNING OBJECTIVES:**

Students will:

1. Identify the major landmarks of the central nervous system as it relates to normal and abnormal communication. (III-B, III-C, III-D)
2. Identify the major landmarks of the peripheral nervous system as it relates to normal and abnormal communication. (III-B, III-C, III-D)
3. Identify and describe the functions of the central and peripheral nervous system as they relate to normal and abnormal communication. (III-B, III-C, III-D)
4. Describe etiologies of basic characteristics of patients with adult speech, language, and cognitive disorders. (III-B, III-C, III-D, )
5. Recognize ethical issues that impact assessment and treatment of adults with communication disorders. (III-B, III-C, III-D, III-E, III-F)

**ASHA Standards of Accreditation Addressed in this Course**

**Standard 3.0B Curriculum in SPEECH LANGUAGE PATHOLOGY**

**3.1B The curriculum (academic and clinical education) is consistent with the mission and goals of the program and prepares students in the full breadth and depth of the scope of practice in speech-language pathology.**

The intent of this standard is to ensure that program graduates have opportunities to acquire the knowledge and skills needed for entry into professional practice across the range of practice settings (included but not limited to hospitals, schools, private practice, community speech and hearing centers, and industry) and to qualify for those state and national credentials for independent professional practice that are relevant to the program's purpose and goals.

The program must provide an academic and clinical curriculum that is sufficient for students to acquire and demonstrate, at a minimum, knowledge of basic human communication and swallowing processes, including their biological, neurological, acoustic, psychological, developmental, and linguistic and cultural bases.

The program must provide opportunities for students to acquire and demonstrate knowledge of the nature of speech, language, hearing, and communication disorders and differences, as well as swallowing disorders, including etiologies, characteristics, and the anatomical/physiological, acoustic, psychological, developmental, linguistic, and cultural correlates. These opportunities will be provided in this class in the area of hearing and speech science.

**The program must provide opportunities for students to acquire and demonstrate knowledge in the following areas:**

- principles and methods of prevention, assessment, and intervention for people with communication and swallowing disorders across the life span, including consideration of anatomical/physiological, psychological, developmental, linguistic, and cultural correlates of the disorders;
- standards of ethical conduct;
- interaction and interdependence of speech, language, and hearing in the discipline of human communication sciences and disorders;
- processes used in research and the integration of research principles into evidence-based clinical practice;

- contemporary professional issues and advocacy;
- certification, specialty recognition, licensure, and other relevant professional credentials.

**The program must provide opportunities for students to acquire and demonstrate skills in the following areas:**

- oral and written or other forms of communication;
- prevention, evaluation, and intervention of communication disorders and swallowing disorders;
- interaction and personal qualities, including counseling, collaboration, ethical practice, and professional behavior;
- effective interaction with patients, families, professionals, and other individuals, as appropriate;
- delivery of services to culturally and linguistically diverse populations;
- application of the principles of evidence-based practice;
- self-evaluation of effectiveness of practice.

**3.2B Academic and clinical education reflects current knowledge, skills, technology, and scope of practice. The curriculum is regularly reviewed and updated. The diversity of society is reflected throughout the curriculum.**

**3.3B The scientific and research foundations of the profession are evident in the curriculum.**

***Knowledge will be conveyed via class lectures and readings.***

***Acquisition will be demonstrated via class discussions, exams and required projects.***

**Students will demonstrate the following skills:**

1. Identify structures of the central nervous system as they relate to normal communication.  
As measured by:  
Successful completion of exams  
Successful completion of projects
2. Identify functions of the central nervous system as they relate to normal communication.  
As measured by:  
Successful completion of exams  
Successful completion of projects
3. Identify structures of the peripheral nervous system as they relate to normal communication.  
As measured by:  
Successful completion of exams  
Successful completion of projects
4. Identify functions of the peripheral nervous system as they relate to normal communication.  
As measured by:  
Successful completion of exams  
Successful completion of projects
5. Discuss etiology and symptomatology of neurogenic communication disorders.  
As measured by:  
Successful completion of exams  
Successful completion of projects
6. Identify standards of ethical conduct as they relate to knowledge of the human nervous system.  
As measured by:  
Successful completion of Exams  
Successful completion of projects

## **Field Trip Policies**

### **Off-campus Instruction and Course Activities**

*Off-campus, out-of-state, and foreign instruction and activities are subject to state law and University policies and procedures regarding travel and risk-related activities. Information regarding these rules and regulations may be found at the website address [http://www.utdallas.edu/BusinessAffairs/Travel\\_Risk\\_Activities.htm](http://www.utdallas.edu/BusinessAffairs/Travel_Risk_Activities.htm). Additional information is available from the office of the school dean. Below is a description of any travel and/or risk-related activity associated with this course*

### **Student Conduct & Discipline**

The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, *A to Z Guide*, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and Regulations, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3*, and in Title V, Rules on Student Services and Activities of the university's *Handbook of Operating Procedures*. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391).

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

### **Academic Integrity**

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work. Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings. Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.

### **Email Use**

The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

### **Withdrawal from Class**

The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.

### **Student Grievance Procedures**

Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*. In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

### **Incomplete Grade Policy**

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of **F**.

### **Student AccessAbility**

The goal of Student AccessAbility is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Student AccessAbility is located in room 3.200 in the Student Services Building.

Office hours are Monday -Thursday, 8:30 a.m. to 6 p.m. and Friday, 8 a.m. to 5 p.m.

The contact information for the Office of Student AccessAbility is:

The University of Texas at Dallas, SSB32

Richardson, Texas 75083-0688

(972) 883-2098 (voice or TTY)

Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes

enrolled students with mobility impairments may have to be rescheduled in accessible facilities.

The college or university may need to provide special services such as registration, note-taking, or mobility assistance. It is the student's responsibility to notify his or her professors of the need for such an accommodation.

Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

### **Religious Holy Days**

The University of Texas at Dallas will excuse a student from class or other required activities for travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete

the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e. for the purpose of observing a religious holy day] or if there is a similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.