Required Text


Note 1: To insure the relevance of the study guides contained within this website to this course's materials, most of the study guide notes have been taken (all or in part) from the above text.

Some students find using a supplemental text helpful. One resource is Bhatnagar, S. (2013). Neuroscience for the study of Communicative Disorders.

Course Description

Neuroanatomy-physiology related to speech, language and hearing; neuropathologies of the central nervous system and results of neurological insult.

3 semester hours

Course Objectives

- Students will demonstrate an understanding of the gross anatomy of the central and peripheral nervous systems.
- Students will define technical terms used in describing the structure and function of the nervous systems.
• Students will list principal embryonic division of the brain.
• Students will explain the parts of nerve cells and describe their function.
• Students will explain the electrical and chemical properties of nerve cells (synapse).
• Students will identify the gross anatomy of the spinal cord.
• Students will describe the meninges, their location and function.
• Students will demonstrate an understanding of the function of cranial nerves as they related to communication disorders.
• Students will demonstrate an understanding of motor systems and motor system disorders.
• Student will learn the names and functions of major structures in the central and peripheral nervous system.
• Students will describe the consequences of damage to major neurological systems.
• Students will discuss common neurotransmitters and their function.
• Students will describe the ventricular system.
• Students will describe the vascular system of the brain.

Course Overview and Guidelines

Welcome to Neuroanatomy and Neurophysiology. When you begin the course, you can introduce yourself to me in an email. I would like to know who you are and why you are taking this course.

Although not required, most students find completion of a course in Basic Anatomy and Introduction of Audiology beneficial before taking this course.

It is essential that you read and study all of the required chapters and review the diagrams carefully. The content of this course is interesting and you will learn many new neural systems and their relationships with other systems. Along the way, you will learn at least 1,000 new content-specific vocabulary words. The text is an important guide in this process, so read it carefully.

Course materials is the heart of this course. The units have course notes, links to additional information, study questions and assignments. You will find the link to the exams there as well. You can visit the grade book to see assignment and exam grades.

As you complete selected chapters, you will visit one or more web sites that display either actual photos of, or improved imaging of, the brain structures or systems discussed in the text. The resources on the Web are incredible. Move back and forth between the web-based presentations and the materials covered in your text. It's an amazing adventure.

I will provide study questions which will help you prepare for the exams. Remember the exams sample what you learn and do address all of the important topics in the course. While studying for the course exams, I would suggest drawing pictures and diagrams of some of the structures and systems. You must complete the assignments in the three sections of the course before you take the exam for that section. Students are most successful if they read the book, review the
course notes, answer the study questions and visit the websites. Enjoy.

Be sure to complete each chapter and all activities. We will not study every portion of every chapter as a class, but you will need to know all the material summarized in the course notes.

When completing written assignments, please use at least two current references from print and web site sources. Complete each assignment with care. Research the topics and provide a complete response. Current references are important. Use APA for your referencing your text and reference list. Failure to use APA will result in reduced points for the assignment.

There will be three objective exams within the course. In addition, you will complete 10 assignments. You can work at your own rate. Let me know if you have questions. I use only UNC email addresses assigned when you enroll in this class. I try to respond to e-mail within 24 hours; however, if you don’t hear back from me right away, be patient; I will answer.

Finally, this course prepares you for disorders courses in speech language pathology and audiology. It satisfies Standard IV-B of ASHA certification requirements.

**Standard IV-B**

The applicant must have demonstrated knowledge of basic human communication and swallowing processes, including the appropriate biological, neurological, acoustic, psychological, developmental, and linguistic and cultural bases. The applicant must have demonstrated the ability to integrate information pertaining to normal and abnormal human development across the life span.

**Course Outline**

**Neuroanatomy-Neuropophysiology of Communication**

<table>
<thead>
<tr>
<th>Unit 1</th>
<th>Introduction of the Nervous System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit 2</td>
<td>The Physiology of Nerve Cells</td>
</tr>
<tr>
<td>Unit 3</td>
<td>The Spinal Nerves</td>
</tr>
<tr>
<td>Unit 4</td>
<td>Spinal Reflexes and Muscle Tone</td>
</tr>
<tr>
<td>Unit 5</td>
<td>The Autonomic Nervous System</td>
</tr>
<tr>
<td>Unit 6</td>
<td>Pain and Temperature</td>
</tr>
<tr>
<td>Unit 7</td>
<td>Proprioception, Touch and Tactile Discrimination</td>
</tr>
<tr>
<td>EXAM 1</td>
<td></td>
</tr>
<tr>
<td>Unit 8</td>
<td>Motor Pathways</td>
</tr>
<tr>
<td>Unit 9</td>
<td>Lesions of the Peripheral Nerves, Spinal Roots and Spinal Cord</td>
</tr>
<tr>
<td>Unit 10</td>
<td>Organization of the Brain Stem and Cranial Nerves</td>
</tr>
<tr>
<td>Unit 11</td>
<td>Cranial Nerves of the Medulla</td>
</tr>
<tr>
<td>Unit 12</td>
<td>Cranial Nerves of the Pons and Midbrain</td>
</tr>
<tr>
<td>Unit 13</td>
<td>Lesions of the Brain Stem</td>
</tr>
</tbody>
</table>
Grading Policies

You will have three objective exams of 50 points each, for a maximum of 150 possible points and ten assignments worth 10 points each. Total for the course is 250.

<table>
<thead>
<tr>
<th>Course Components</th>
<th>Points Each</th>
<th>Total Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments</td>
<td>10</td>
<td>100</td>
</tr>
<tr>
<td>Exams</td>
<td>50</td>
<td>150</td>
</tr>
<tr>
<td><strong>Total Points</strong></td>
<td></td>
<td><strong>250</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points and Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90% 250 – 225</td>
</tr>
<tr>
<td>B</td>
<td>80% 224 - 200</td>
</tr>
<tr>
<td>C</td>
<td>70% 199 - 175</td>
</tr>
<tr>
<td>D</td>
<td>60% 174 - 150</td>
</tr>
<tr>
<td>F</td>
<td>&lt;60% 149 and below</td>
</tr>
</tbody>
</table>

Course Requirements

Three examinations are required.
You will have 10 short assignments, which you will attach through the course. Attach your assignments -do not type into the course response box. You must include at least two current academic references with each assignment. Use APA for format guidelines. Below is a link to an APA format reference guide. [OWL - Purdue Online Writing Lab](https://owl.purdue.edu/owl/)
The 10-point grade is broken down as follows:

A minimum of 2 current references = 1 point

Correct APA format in text and reference list -1 point

Clear accurate writing = 1 point

Content - complete and responsive to the question = 7 points
  
  o missing minor content = 6 points
  o missing two or more content items= 5 points
  o several topics missing or poorly explained = 4 points
  o major components of the response are missing = 3 points
  o minimal information provided = 1 - 2 points

NOTE - when you click on some of the websites, you get a security warning message - click on NO and you will get to the web site. You can use Firefox as an alternative Browser.

University Information for Independent Study Students

- **Independent Study Guide**
  
  [http://extended.unco.edu/courses-workshops/independent-study/is-docs/IS_Student_Guide.pdf](http://extended.unco.edu/courses-workshops/independent-study/is-docs/IS_Student_Guide.pdf)

- **Library Services for Distance Education and Off-Campus Students:**
  Obtaining Materials from UNC Libraries

Off-campus students residing within 50 miles of the UNC campus are required to come to the library and borrow materials in person. Students residing more than 50 miles from campus may request that materials be delivered to them. All requests must include complete citations. We will supply materials from the UNC Libraries, as well as materials from other libraries obtained via Interlibrary Loan. Articles will be delivered via email. Books will be mailed first class. Delivery time by U.S. postal service is approximately 1 week. It is the responsibility of the student to return books by the due date. UNC does not pay return postage on books. For information on document delivery, call (970) 351-1446.

Requests for materials may be made through the following methods:

Online: [http://www.unco.edu/library/services/distance_students.aspx](http://www.unco.edu/library/services/distance_students.aspx)

By email: library.ocp@unco.edu
By fax: (970) 351-2540

- **Students with Disabilities:**

Any student requesting disability accommodation for this class should contact Disability Support Services at (970) 351-2289 to certify documentation of disability and to ensure appropriate accommodations are implemented in a timely manner.

- **Honor Code**

All members of the University of Northern Colorado community are entrusted with the responsibility to uphold and promote five fundamental values: Honesty, Trust, Respect, Fairness, and Responsibility. These core elements foster an atmosphere, inside and outside of the classroom, which serves as a foundation and guides the UNC community’s academic, professional, and personal growth. Endorsement of these core elements by students, faculty, staff, administration, and trustees strengthens the integrity and value of our academic climate.

- **UNC’s Policies**

UNC’s policies and recommendations for academic misconduct will be followed. For additional information, please see the Dean of Student's website, [http://www.unco.edu/dean-of-students/](http://www.unco.edu/dean-of-students/).

- **Student Satisfaction Evaluation**

Participants will be asked to evaluate the course for instructors’ knowledge, interest and enthusiasm as well as providing additional information on classes or topics which you would like to see developed as a future offering from UNC.

Off-campus students taking courses from UNC, should familiarize themselves with the academic regulations and procedures contained in the current UNC catalog: [http://catalog.unco.edu/](http://catalog.unco.edu/)