

**Bisc 543: Functional Neuroanatomy**  
**Dr. Lainy Day**  
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**Tu, Th 11:00-12:15**  
**Classroom: Shoemaker 516**  
**Office Hours Tu, Th 4-5 pm**

Texts: A functional neuroanatomy text is required: I suggest *Nolte's, The Human Brain, An introduction to its functional anatomy, 7<sup>th</sup> Ed.* I have several similar texts that I can make available to you if the cost of the textbook is a problem for you and you may also use a previous editions of the textbook. Alternative text will be on reserve at the library including an early edition of the suggested textbook. Additional readings will be posted on blackboard or handed out in class. Please see blackboard for course handouts.

**Prerequisites:**

Undergraduates: Bisc 330, 327 or 331, or a B or above in Psych 319

Graduate Students: Graduate Standing

**Course Description:** Architectural and functional organization of the vertebrate brain and spinal cord will be described in some detail. Students should be prepared to develop both an understanding of how the nervous system is organized and to learn detailed anatomical nomenclature. Most of the information you are expected to know will come from the lectures. I will specify when something in the readings should be closely observed. Otherwise, the text and the reading packet should be used as supplemental sources to help clarify, confirm, and illustrate the information provided in lectures.

Graduate students will be required to complete short essays for each exam and a long essay for the final that will demonstrate critical thinking skills and necessitate synthesis of several domains covered in lectures.

**Learning Objectives:**

- Understand the principles of vertebrate nervous system organization
- Recognize how form guides function
- Learn the names of the parts of the CNS
- Graduate students will, in addition, be required to creatively integrate lecture materials to demonstrate understanding of how various systems (perception, motor, association) interact.

**Exams and Grading:** For undergraduates, there will be two in-class exams (50 points each) plus a 50 point non-comprehensive exam. Exams will be multiple choice, fill in the blank, and short answer. In addition, there may be several announced or unannounced quizzes. Graduate students will complete the same exams as undergraduate students. In addition, graduate students will be given short essay questions at the end of the first two exams that will be worth 50 points each. These short essays will be due by the end of the exam day or the following day depending on student's schedules. Graduate students will also have a long essay take home portion to the final exam that will be worth 100 points and be due one week before the final exam. A = 90% and above, B = 80-89%, C = 70-79%, D = 60-69%, F = 59% and below. Will use the plus/minus grading system. Cut off levels will be determined by examining the grade distribution of the class rather than by using a particular percentage. However, you would not obtain a minus for a percentage score in the middle to upper third of the percentage spread for that letter grade.

**Attendance First Two Weeks:** I have no attendance policy for this class. However, the University must comply with federal mandates that require us to submit attendance reports for the first two weeks of class. Unless you have some special exception such as personal or family health issues or University based excursions that will keep you out of class the first two weeks of school, you must be certain to attend class at least once during the first two weeks or you will be dropped from the class. I will verify attendance by taking roll in class.

Accommodations: Students with disabilities, which have been verified through the Office of Student Disability Services, are encouraged to contact the instructor to discuss their individual needs for accommodations.

Make-up Exams: If you miss an exam, you must contact the instructor within one week or you will be given a zero for the exam. Make up exams will be given only for reasonable and documented excuses. Make-up exams will cover the same material as that given during the scheduled time but will not contain the same questions. There will be no makeup exam for the final.

Course Schedule: \*\*\*Please begin to read ahead. If we finish one topic we will move on to the next up to the content intended to be covered for each exam.

T	21-Jan	Introduction	Nolte C1, 7, & 8 if no background in neuroscience
R	23-Jan	Development/ Brain Organization	Nolte C2 & 3 (4, 5, & 6 also good)
T	28-Jan	Spinal Cord/Somatosensory	Nolte C10, C9
R	30-Jan	Brainstem/ cranial nerves	Nolte C11 to p 276
T	4-Feb	Brainstem/ cranial nerves	Nolte C12
R	6-Feb	Auditory System	Nolte C14 to p 358, KSJ p604
T	11-Feb	Auditory System	Nolte C14 to p 358, KSJ p604
R	13-Feb	Reticular Formation	Nolte C11 p276-280, Afifi C32 p398-401
T	18-Feb	Monoamine Systems	Angevine and Cotman, C14
<b>R</b>	<b>20-Feb</b>	<b>MAS conference, no class</b>	
<b>T</b>	<b>25-Feb</b>	<b>Brain Organization</b>	Nolte C2 & 3 (4, 5, & 6 also good)
<b>R</b>	<b>27-Feb</b>	<b>First Exam</b>	<b>(may need 1 extra hour)</b>
T	3-Mar	Cerebellum	Nolte C20
R	5-Mar	Diencephalon	Nolte C16, March 2 <sup>nd</sup> last day to drop class
<b>T</b>	<b>10-Mar</b>	<b>Spring Break</b>	
<b>R</b>	<b>12-Mar</b>	<b>Spring Break</b>	
T	17-Mar	Dorsal Thalamus	Nolte C16
R	19-Mar	Neocortex	Nolte C22
<b>T</b>	<b>24-Mar</b>	<b>Neuroscience Showcase</b>	<b>Attendance Required</b>
R	26-Mar	Neocortex/ Vision	Nolte C17
T	31-Mar	Neocortex/ Vision	Nolte C17
R	2-Apr	Neocortex/ Lateralization	Nolte C22 p549-552
<b>T</b>	<b>7-Apr</b>	<b>Second Exam</b>	
R	9-Apr	Basil Ganglia	Nolte C19
T	14-Apr	Limbic System/Hypothalamus	Nolte C23 p560
R	16-Apr	Hypothalamus	Nolte C23 p560-568, Angevine and Cotman, C12
T	21-Apr	Amygdala	Nolte C23 p581-583, Isaacson p 23-32
R	23-Apr	Olfaction	Nolte C13 p325-334
T	28-Apr	Hippocampus	Nolte C23 p 570-578, Afifi p284-291
R	30-Apr	Forebrain Systems Relationships	Afifi p284-291

**R 7-May Third\_Final Exam Noon**