

INTRODUCTION TO NEUROBIOLOGY
Fall Semester, 2006

PSYC 461-003, PSYC 527-001, BIOL 515-001, NEUR 601-001 (2:2:0)
Tuesdays 9:30 – 11:20 Krasnow Institute, Room 229

Prerequisites: Completion of 60 hours, including either Psyc 372 or Biol 213 and Biol 303.

Instructor: Dr. Ann Butler
Office: Krasnow Institute 222 (lab: 126) – Phone: 993-3631
MSN 2A1
Office Hours: Tuesdays 1:00 – 2:00 and by appointment
Email: ABButler@gmu.edu

Text (Required):

Haines, D.E., *Fundamental Neuroscience*, 2002, second edition, Churchill Livingstone, New York.

Texts (Recommended):

Sanes, D.H. et al, *Development of the Nervous System*, 2000, Academic Press, San Diego.

DeArmond, S.J., Fusco, M.M., and Dewey, M.M., *Structure of the Human Brain: A Photographic Atlas*, 3rd Edition, 1989, Oxford University Press, New York.

Goals and Requirements: The goals of this course are to achieve a specific knowledge base in the developmental and evolutionary aspects of the nervous system and to introduce systems neurobiology by study of the visual system and some related motor system pathways. This course is a prerequisite for Psyc 531, Mammalian Neurobiology, in which systems neuroanatomy is continued. The requirements for this course are to learn the material presented in lecture and in relevant portions of the text and other material as made available.

Nature of Course Content: See the list of lectures below.

Method of Instruction and Assignments: The course consists of a series of didactic lectures with occasional, short periods of time for discussion. No specific assignments are made. Students are expected to read the material in their textbook relevant to the lecture content as an aid to learning the latter.

Attendance: Lecture attendance is very important since the material presented will cover both the required readings and additional material presented in lecture. The lectures constitute the core material of the course.

Office Hours: Tuesdays 1:00 – 2:00. This hour is listed here only to conform to syllabus format requirements. I tend to be forgetful about it, so making an appointment for any mutually convenient time is highly recommended.

Last day to add - Sept. 12th.

Last day to drop - Sept. 29th.

Method of Evaluation – Exams: Two interim exams will be given during the course of the semester, and the final exam will be **comprehensive**. Exams will consist of questions in the form of multiple choice, fill in a blank or short list, fill in a label on a figure, and/or longer written answers. The **final exam** will be held **Tues., Dec. 12 from 9:30 – 11:30**. The final grade will be the average of the two interim exams weighted as 50% of the final grade and the final exam weighted as 50%. The instructor reserves the option of weighting the final exam to a greater percentage if marked improvement over the interim exams has occurred. A course score of 90 or above generally results in a grade of A- or above, 80 or above in B- or above, and 70 or above in C- or above. The numerical score is only a guideline, however, and is not absolute. The final grades may be determined on a curve if this is to the students' favor and justified in the opinion of the instructor.

Please note that Psyc 527 and Biol 515 are graduate level courses and subject to the graduate system of grading, whether you are a graduate student or an advanced undergraduate. If you are registered for the course at this level, you will be subject to graduate standards of grading, whether you are using the course for graduate or undergraduate credit.

Policy regarding missed exams: Unless the student has the previously obtained consent of the instructor for postponing an exam or has written medical documentation for absence from an exam, there will be an automatic grade-loss penalty of 10% that will be deducted from the score for the make-up exam. Permission to postpone an exam can be granted for various reasons but only for a few days, since such arrangements are potentially unfair to the other students in the class. Examples of valid reasons, with prior (or same day) permission, include illness, a major exam in another course very close in time, needing to take one's pet to the veterinarian, or the chance to take a trip to Paris. No more than one trip to Paris should be invoked per semester, however. The make-up exam will either be structured like the original exam or will be a combination of short-answer, essay, and/or oral questions. The type of make-up exam will be chosen by the instructor based on what is most convenient for her.

Honor Code, Incompletes, and Disability Accommodation: University policy on the honor code and incompletes applies to the exams. "If you are a student with a disability and you need academic accommodations, please see me and contact the Disability Resource Center (DRC) at 703-993-2474. All academic accommodations must be arranged through that office."

Psyc 328: The option for undergraduates of enrolling in Psyc 328 to earn an extra hour of course credit is **NOT** offered.

INTRODUCTION TO NEUROBIOLOGY: LECTURES

Week 1	Part I – Cellular Basis of Nervous System: 1. Introduction and Orientation to the Nervous System
Week 2	Part II – Genetic and Tissue Bases of Nervous System: 2. Embryological Development of the Body, Head, and Peripheral Nervous System in Invertebrates and Vertebrates
Week 3	3. Embryological Development of the Brain I
Week 4	4. Embryological Development of the Brain II
Week 5	Part III – Evolutionary Basis of Nervous System: 5. Evolutionary Perspective on Nervous System Diversity and Development
Week 6	EXAM I: on Lectures 1 – 5
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Week 7	Special Topics in Visual Neuroscience and/or Society for Neuroscience Annual Meeting: NO CLASS MEETING
Week 8	Part IV – Example of Systems Anatomy—Visual System: 6. Eye and Retina & 7. Geniculostriate Visual Pathway
Week 9	8. Visual Cortices
Week 10	9. Brainstem Visual Pathways and Visuomotor System
Week 11	10. Comparative Aspects of Visual System Organization I
Week 12	EXAM II: on Lectures 6 – 9
Week 13	11. Comparative Aspects of Visual System Organization II
Week 14	12. Overview of Sensory and Motor System Organization and Review