Moravian College
Department of Biological Sciences
 Neuroscience - BIO 362 
Fall 2010

Instructor:	Dr. Cecilia M. Fox
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Office:	Collier Science Room 304
Office Hours:	Mondays 9-10am and 12pm-2pm, Wednesdays 12-2pm, Fridays 9-10am *and by appointment*
Lecture:	Mondays, Wednesday and Fridays 10:20am-11:10am PPHAC 335
Lab:	Thursdays 8:30am-11:30am Collier Hall of Science, Room 303
Required Textbook:	Neuroscience: Exploring the Brain – 3rd edition By Mark F. Bear, Barry W. Connors and Michael A. Paradiso Lippincott Williams and Wilkins

Course Description: The study of neuroanatomy, neurophysiology and neuropathology; special emphasis on the functional aspect of brain organization; introduction to theories and research advances in the field of neuroscience will be presented through journal club and "Neuroscience in the News" activities. Laboratory includes gross anatomy and microscopic study of the central nervous system, computer assisted neurophysiology experimentation, computerized and radiographic study of the brain and a semester long behavior project.

Course Objectives: Upon completion of this course the student will be able to:

1) identify and discuss neuroanatomical structures and their related functions
2) appreciate the interrelationships among neurological structures
3) understand the various means through which neural transmission of information is achieved
4) realize the interrelationships among the central nervous system, peripheral nervous system and musculoskeletal system
5) become familiar with various imaging techniques in studying and identifying structures of the central and peripheral nervous systems
6) effectively discuss current advances in scientific research regarding various areas in neuroscience through journal club and "Neuroscience in the news" activities
7) understand and discuss the symptoms, pathology, current therapies and research regarding neurodegenerative diseases such as Parkinson's disease, Alzheimer's disease and ALS

Grading: The grading system is as follows: *(+/- will be administered as the professor deems appropriate)*

A = 90 - 100
B = 80 - 89
C = 70 - 79
D = 60 – 69

Course Requirements: The student's grade will be based on the following:

Three written lecture exams	100 points each
Two laboratory exams	100 points each
Journal club and "Neuroscience in the News" presentation /participation	100 points
Neurotransmitter presentation	100 points
Behavior experiment	**200 points**
Brain Awareness Service Learning Assignment	100 points
Comprehensive final exam	200 points
	1200 points

** Both lecture material and reading assignments are fair game for lecture exams.
** The final lecture exam is cumulative.
** The "presentation / participation grade" is based on your participation during the journal club and "news" discussions, preparation for discussion and quality of presentation.
** Presentations, assignments and behavior experiment will be discussed once the course is in progress.

Expectations:

a) *Attendance:* Regular lecture and lab attendance is expected. **No** make-up exams will be given unless you have an acceptable reason (family emergency, illness, etc). If an emergency should arise, you must notify me **prior to** the exam and **not** after. If you plan to miss lab please notify me in advance.
b) Cheating: will not be tolerated. Students will be held to the highest standards as specified by the Moravian College Honor Code. Violations of this code will be handled in the most severe manner allowed by university policy.
c) Reading Assignments: should be completed prior to lecture as well as lab.
d) Neuroscience in the News: Each student will present some new information in the field of Neuroscience that has been mentioned in the news that week. A schedule of presentations will be posted on Blackboard once the semester begins. Presentations will be on Fridays.
e) Extra Help: If difficulties interpreting lecture or lab material arise, please contact me regarding tutoring sessions. *I will be more than happy to help!!*
f) Cell Phones/Pagers: Please turn off (or set on vibrate/quiet mode) your cell phones and pagers prior to entering the lecture hall and laboratory. **As a courtesy to the professor, no text messaging during lecture and lab!**

** I look forward to introducing the field of Neuroscience to you. Best wishes for a great semester!*

- C. Fox

Lecture Schedule

Week of:	Topic	Reading Assignment
Aug. 30	Introduction to Neuroscience	Chapter 1
Sept. 6	Neurons and Glia	Chapter 2
Sept. 6	**No Class - Labor Day**	
Sept. 13	Resting Membrane and Action Potentials	Chapters 3, 4
Sept. 20	Synaptic Transmission and Neurotransmitter Systems	Chapters 5, 6
Sept. 23	**Fall Convocation**	
Sept. 27	Structure of the Nervous System	Chapter 7
Sept. 29	**Exam 1 (Introduction through Neurotransmitter Systems)**	
Oct. 4	Structure of the Nervous System (con't)	
Oct. 11-12	**Fall Break**	
Oct. 11	Cranial Nerves and Chemical Senses	Chapter 8
Oct. 18	Somatic Sensory System	Chapter 12
Oct. 25	Spinal Control of Movement	Chapter 13
Nov. 1	Chemical Control of Brain and Behavior	Chapter 15
Nov. 3	**Exam 2 (Structure of NS through Spinal Control of Movement)**	
Nov. 8	Sex and the Brain	Chapter 17
Nov. 15	Rhythms of the Brain	Chapter 19
Nov. 22	Brain Mechanisms of Emotion	Chapter 18
Nov. 24-28	**Thanksgiving Holiday**	
Dec. 1	**Exam 3 (Chemical Control through Brain Mechanisms of Emotion)**	

Dec. 6	The Aging Brain
Dec. 14	**Final Exam at 8:30am**

Laboratory Schedule

Lab	Topic
Sept. 2	Library Instruction Session – *meet in Reeves Library at 9:00am*
Sept. 9	Microscopic Study of the Nervous System Physio Ex. Neurophysiology of Nerve Impulses Neuroscience Abstract Writing Exercise
Sept. 16	Behavior Experiment - Positive Reinforcement Meet in Collier 303 followed by Animal Facility
Sept. 23	**Fall Convocation**
Sept. 30	Gross Anatomy of the Brain, Spinal Cord and Skull; Radiographs Journal Club Presentation: Group 1
Oct. 7	Cranial Nerve and Special Senses Testing
Oct. 14	**Exam 1**
Oct. 21	Introduction to Biopac Software Reflex Testing; Biopac – Reaction Time Journal Club Presentation: Group 2
Oct. 28	Biopac: GSR and Polygraph
Nov. 4	Sex and the Brain: Brain gender exercises Biopac: EEG 1 and 2 Journal Club Presentation: Group 3
Nov. 11	**Exam 2**
Nov. 18	BAW Service Learning Activity
Nov. 25	**No Lab – Thanksgiving Holiday**
Dec. 2	Behavior Experiment Presentations

Professor reserves the right to amend this syllabus as the course progresses