Attention!

This is a *representative* syllabus.

The syllabus for the course when you enroll may be **different**.

Use the syllabus provided **by your instructor** for the most up-to-date information. Please refer to your instructor for more information for the specific requirements for a given quarter.

NEUROSCIENCE 300
INTRODUCTION TO NEUROSCIENCE 4 credits

INSTRUCTOR Dr. R. Thomas Boyd
292-4391
5152 Graves Hall
boyd.16@osu.edu

TIME: Tuesday and Thursday 3:30-5:18. 107 Hamilton Hall
#15265

TEXT: Neuroscience, Exploring the Brain, by M.F. Bear, B.W. Connors, and M.A. Paradiso, 3rd edition, 2007, Lippincott, Williams and Wilkins.

Textbook is recommended. Readings assigned from the text will reinforce the material covered in class.

TEACHING ASSISTANTS: TBA

WEBSITE:

www.carmen.osu.edu. Powerpoint presentations of the lectures will be placed here. Announcements will be posted and papers to be read will also be listed.

ADDITIONAL READINGS:

In addition to the lectures and text readings, papers related to various diseases of the nervous system with be assigned. These will be discussed in class. It is expected that the papers will be read by the assigned date and that students will be prepared to participate in class discussion. Some topics will be decided by the class, but multiple sclerosis, muscular dystrophies, Alzheimer's Disease, Parkinson's Disease, and schizophrenia will be covered. Approximately ten neurological diseases will be studied. Primary literature sources will be used. The papers will selected by the instructor at the time of the course so that the readings will be current and at the appropriate level of difficulty for each topic. Some examination questions will be based on these additional readings.

LECTURES:

The material presented in the lectures will cover the most important parts of the text reading assignments, therefore class attendance is important.

ACADEMIC INTEGRITY (ACADEMIC MISCONDUCT)

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the University's Code of Student Conduct, and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the University's Code of Student Conduct and this syllabus may constitute "Academic Misconduct." The Ohio State University's Code of Student Conduct (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the university, or subvert the educational process." Examples of academic misconduct include (but are not limited to)

plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the University's Code of Student Conduct is never considered an "excuse" for academic misconduct, so I recommend that you review the Code of Student Conduct and, specifically, the sections dealing with academic misconduct. If I suspect that a student has committed academic misconduct in this course, I am obligated by University Rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the University's Code of Student Conduct (i.e., committed academic misconduct), the sanctions for the misconduct could include suspension or dismissal from the University and a failing grade in this course. If you have any questions about the above policy, please contact me. Other sources of information on academic misconduct (integrity) include: COAM's web page (<http://oaa.osu.edu/coam/home.html>) "Eight Cardinal Rules of Academic Integrity" (<http://www.northwestern.edu/uacc/8cards.html>)

EXAMS AND GRADING:

3 tests (100 points each) and a final exam in two parts (100 points points each). The final grade will be based on 300 points, ie. the three best tests. Tests will be composed of multiple choice, fill in the blank, and short answer questions.

Grade	Total points	%
A	270-300	90-100
B	240-269	80-89
C	210-239	70-79
D	180-209	60-69
E	<180	<60

OFFICE HOURS: At specific times (TBA) as well as by appointment.

ACCOMODATIONS FOR DISABLED STUDENTS: Everything possible will be done to make every reasonable program or facility adjustment to assure success for each student.

COURSE DESCRIPTION:

This course is designed for biology majors or non-majors with a basic knowledge of biology. This course will survey the organization and function of the nervous system at a level understandable to both science and non-science majors. We will the cover the history of neuroscience, structure and functions of neurons and glia, cell communication, development and structure of the nervous system, how we perceive and react to the world around us (visual system, motor system, sensory system). Diseases affecting the nervous system will be discussed each week.

			Reading Chapter in NEB
March	27	Overview of course, history of neuroscience	1, 2
	29	Cells of the nervous system, basic cell biology, structure of neurons and glia	2
April	3	Neuronal membranes, membrane structure, movement of ions ionic basis of resting membrane potential	3
	5	Action Potentials, voltage-gated ion channels	4

	10	Action potentials, voltage-gated ion channels	4
	12	Synaptic transmission, synapse structure, principles of synaptic integration	5
	17	Synaptic transmission, synapse structure, principles of synaptic integration	5
	19	Neurotransmitters and receptors, methods of study, chemistry, Ion channels and receptors (cholinergic, dopaminergic, serotonergic, etc.), general principles	6
	24	"	
	26	Examination #1 Chapters 1-5	
May	1	Structure and development of the nervous system	7,23
	3	"	
	8	Chemical Senses: Taste and Smell	8
	10	Eye	9
	15	Eye and Central Visual System	9,10
	17	Central Visual System	10
	22	Examination #2, Chapters 6-8	
	24	Somatic Sensation	12
	29	Somatic Sensation	12
	31	Examination #3 Chapters 9,10,12	
June	5	Final exam 3:30-5:18 PM	