

**Northeastern State University  
Oklahoma College of Optometry**

Ocular Motility and Binocular Vision -5215  
**Spring, 2011**

**INSTRUCTORS:**

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**COURSE TITLE AND NUMBER:**

**CLASS DAYS & TIME:**

**LABORATORY:**

Ocular Motility and Binocular Vision,5215 Mondays, Tuesdays 1:00-2:30 Thursdays 8:00-12:00

**PREREQUISITES:**

The student must be a second year optometry student, in good standing, who has taken and passed Vision Science II: Sensory Aspects (OPT 5134).

**CATALOG DESCRIPTION OF COURSE:**

Actions and functions of the intraocular and extraocular muscles integrated with the basic principles of binocular vision. Neurophysiological pathways and control of ocular movements: saccade, pursuit, vergence, version, OKN, VOR, reading, nystagmus. Functions and control of accommodation and accommodative-convergence. Motor and sensory fusion, the horopter, fixation disparity, stereopsis, and binocular interactions, aniseikonia, anomalous correspondence, neurophysiology and development of binocular vision. Lecture and laboratory.

## **COURSE PURPOSE:**

This course will complete your didactic preparation in the basic vision sciences. It is designed to facilitate a solid understanding of the underlying neurophysiological aspects of eye movements and binocular vision that are so important to proper patient care, especially if you work with infants, children of school age, stroke patients, athletes, computer users, or monovision contact lens patients. What you learn in this class will have applications into all areas of your patient care; it will allow you to not only to identify the patient's problem, but also to understand **why** and **how** the problem is happening. This will allow you to intervene in a timely manner and potentially change that person's life.

## **EXPECTED COURSE OUTCOMES:**

Upon completion of the course, you should be able to:

- 1) Understand the basic neurophysiological pathways and principles of the various types of eye movements and eye movement dysfunction, how to assess them, and how to clinically manage them.
- 2) Understand the relationships of the extraocular muscles and be able to relate them to the various laws of ocular movement
- 3) Understand the basic principles of binocular vision, testing of binocular vision and other clinical applications.
- 4) Be prepared for relevant portions of the National Board examination

## **INSTRUCTIONAL MATERIALS:**

Eye Movement Disorders, Agnes Wong

Adler's Physiology of the Eye, 10th Ed

Steinman, Scott et al. Foundations of Binocular Vision. McGraw-Hill, New York, 2000

Class Notes

## **STUDENT PERFORMANCE ACTIVITIES:**

Attendance

Non Professional Conduct

Examinations

Lectures & Labs

- 1) Students are expected to attend all lectures and be present prior to the assigned time for the lecture.
- 2) When lecture topics cover material in the course textbooks, students are required to read the appropriate chapter prior to the lecture. The student is responsible for all material assigned even if not discussed in class. Unannounced quizzes may be given to verify that you have

read the chapter. Lecture and laboratory notes and figures will need to be printed from the Blackboard and/or other websites prior to class time. Lecture supplements will either be placed in the students' mailboxes or be handed out at the beginning of lecture. Lectures may include diagrams and video tapes for which the student will be responsible, unless informed otherwise by the instructor.

- 3) Questions related to the topic of discussion are strongly encouraged during lectures and presentations. Please keep questions pertinent to the presented information. All other questions are welcomed after class or during office hours.
- 4) Lab attendance is mandatory and will represent a portion of your grade. We will divide the class into four lab sections that will meet at 8:00, 9:00, 10:00, and 11:00 am. During the first hour, students will conduct experiments and collect data. During the second hour, they must vacate the laboratory and work in teams elsewhere to discuss and analyze results. Lab reports must be submitted at the first lecture on the following Monday in order to receive credit, unless otherwise specified.
- 5) Class participation is an integral part of this class. You each are responsible for how much you learn in this course and will get out of it what you put into it. You will also play a role in helping your classmates to learn during lectures and labs.
- 6) If you must be absent from class, please notify the instructor ahead of time, so he or she can ensure that you receive instructional material. *No make-up will be provided for tests;* The points from that test will be added to the next tests, which may include some additional questions, or some other methods, including an oral exam, to ensure that you have mastered the material. Labs will be graded as pass/fail based upon attendance and submission of the lab report.

### **STUDENT EVALUATION:**

	<u>Proportion of grade</u>
Ocular motility Exam 1	100 points
Ocular motility Exam 2	100 points
Ocular motility labs	100points
Midterm Exam	200 points
Binocular vision Exam 1	150 points
Binocular vision Exam 2	150 points
Binocular vision labs	50 points
Final Exam	<u>200 points</u>
Total Points	1000 points

Final letter grades will be assigned according to the following cut-off percentages:

A	900-1000 Points
B	800-899 Points
C	700-799 Points
F	<700 Points

Optometry maintains high professional and ethical standards; academic dishonesty is incompatible with these standards. Academic dishonesty includes: obtaining unauthorized

advance information about a test, providing such information, cheating during a test, and failure to report known instances of cheating. Anyone caught cheating in this course may receive an F as the final course grade, and the matter will be referred to the Committee on Ethics and Professionalism for possible disciplinary action

Please go to <http://offices.nsuok.edu/academicaffairs/SyllabiInformation.aspx> for required information pertaining to:

1. Academic Misconduct
2. American Disabilities Act Compliance
3. Inclement Weather/Disaster Policy
4. Teach Act
5. Accessibility
6. Release of Confidential Information