

# INVESTIGATIVE NEUROSCIENCE (NEURO 203/NRSC 201)

## LECTURE SCHEDULE – as of 16 AUGUST 2016

LSU Neuroscience Center Seminar Room (8th floor)

Lion Eye Center Building, 2020 Gravier Street,

New Orleans LA 70112 USA

Tuesdays & Thursdays – 2 - 4 PM (exceptions as indicated)

**Course Director: Walter J. Lukiw, BS, MS, PhD**

Neuroscience Center and Departments of Neurology and Ophthalmology

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- **Overview:** 23 two-hour lectures by leading experts in the field on neuroscience with emphasis on brain and visual structure and function, technical approaches to research, and brain and visual pathology
- **Grade Evaluation:** one preliminary examination (30%); one research topic paper (30%); one final exam (40%); details will be given in first class meeting 08/13/2015
- **Textbooks** (Note that individual lecturers may assign specific scientific journal articles, or specific chapters from the two texts listed below, or other texts, for review prior to class, disseminated by email as .pdf files):  
*Basic Neurochemistry, Molecular, Cellular & Medical Aspects, 7th Edition, 2006 (editors Siegel, Albers, Brady, Price); Principles of Neural Science, 5th Edition, 2012, (editors Kandel, Schwartz, Jessel, Siegelbaum, Hudspeth).*

## SCHEDULE

| <u>DATE</u> | <u>TOPIC</u>                                                                                           | <u>LECTURER</u>   |
|-------------|--------------------------------------------------------------------------------------------------------|-------------------|
| 08/16       | First Class Meeting, introduction to NEURO 203 and course overview                                     | Dr. WJ Lukiw      |
| 08/18       | Overview of the nervous system                                                                         | Dr. T. Weyand     |
| 08/23       | Experimental design and statistics                                                                     | Dr. Z. Fang       |
| 08/25       | The development of nervous system                                                                      | Dr. C. Wu         |
| 08/30       | Electrotonic properties, membrane potential and action potential                                       | Dr. S. Gasparini  |
| 09/01       | Synaptic (chemical) transmission and synaptic plasticity                                               | Dr. J. Erickson   |
| 09/06       | Synaptic transmission and synaptic integration                                                         | Dr. X. Tian       |
| 09/08       | Receptors and non-classic signaling                                                                    | Dr. C. Chen       |
| 09/13       | Overview of neuronal circuits: construction of a receptive field                                       | Dr. T. Weyand     |
| 09/15       | Apoptosis/necrosis/signal transduction/neurovascular unit                                              | Dr. NG Bazan      |
| 09/20       | Regulation of gene expression                                                                          | Dr. H. Xia        |
| 09/22       | <u>Preliminary examination (first 11 lectures; 30% of grade)</u>                                       |                   |
| 09/22       | <u>List of 'Neuroscience Research Topics' handed out (each student writes a 3-page research paper)</u> |                   |
| =====       |                                                                                                        |                   |
| 09/27       | Gene expression in neurons                                                                             | Dr. W.J. Lukiw    |
| 09/29       | Visual System I                                                                                        | Dr. Song Hong     |
| 10/04       | Visual system II                                                                                       | Dr. M. Jin        |
| 10/07       | Auditory system I (note change to Friday 10/7 2-4 pm)                                                  | Dr. H. Farris     |
| 10/11       | Auditory System II                                                                                     | Dr. J. Lentz      |
| 10/13       | Motor system                                                                                           | Dr. T. Weyand     |
| 10/18       | Neuroplasticity and vocal behavior                                                                     | Dr. Xiao Ching Li |
| 10/20       | Visual system pathology/inflammation                                                                   | Dr. H.E. Bazan    |
| 10/25       | Epilepsy                                                                                               | Dr. L. Belayev    |
| 10/27       | Speech and language processing                                                                         | Dr. H. Farris     |
| 11/01       | Stroke and head trauma                                                                                 | Dr. L. Belayev    |
| 11/03       | Alzheimer's disease                                                                                    | Dr. W.J. Lukiw    |
| 11/08       | <u>Final Research Topics Papers due (30% of grade)</u>                                                 |                   |
| 11/08       | <u>Final Exam (last 12 lectures; 40% of grade)</u>                                                     |                   |
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