PRINCIPLES OF NEUROSCIENCE IV:
‘NEURAL INTEGRATION AND CONTROL’

GMS6024 -- FALL/2013
2 CREDITS

CLASS LOCATION: MBI BUILDING, L1-101
MEETING TIME: MONDAY, WEDNESDAY, FRIDAY (9-11:00 AM)

COURSE DIRECTORS: Benoit Giasson, Ph.D.  Paul J. Reier, Ph.D.
bgiasson@ufl.edu  reier@ufl.edu
352-273-9363  352-392-8696

COURSE DESCRIPTION AND OBJECTIVES:
This course is a 5-week module and represents the 4th part of the Principles of Neuroscience series. There will be 6 contact hours per week.

The primary objective of this course is to provide students with an overview of neuroscience concepts associated with specific topics related to higher-order and integrated nervous system functions. The course will focus on translational aspects with emphasis on experimental designs and methodology. This is an advanced neuroscience course with the expectation that the students will contribute to each lecture with interactive feedback and discussions.

Format: 1.5 hour lecture followed by a 30 min student presentation of a related paper.

COURSE TEXTBOOK:
From Neuron to Brain by Nicholls, et al, 5th Ed., 2011

Reasonable Alternatives:

Additional Reading will be assigned for each lecture.

HANDOUTS AND WRITTEN ASSIGNMENTS: Course handouts and reading materials in addition to course text will be provided using Drop Box. Registered students are to provide email addresses for file sharing purposes to Dr. Reier prior to the first class (Oct. 25).

PREREQUISITE KNOWLEDGE AND SKILLS:
Participation in either Neuropharmacology and its Clinical Application (GMS 6023) or Functional Human Neuroanatomy (GMS 6705).

Exceptions require instructor approval.
<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
<th>Topic</th>
<th>Reading Chapter(s) in Nicholls and/or Kandel, Purves</th>
<th>Lecturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Oct 25</td>
<td>Brain Function &amp; Neurodegenerative Diseases</td>
<td></td>
<td>Dr. Benoit Giasson</td>
</tr>
<tr>
<td>2</td>
<td>Oct 28</td>
<td>Somatosensory Systems/Pain</td>
<td></td>
<td>Dr. Andy Ahn</td>
</tr>
</tbody>
</table>
| 3   | Oct 30 | Special Sensory Systems                                | *Nicholls* – 16 (*IIIrd Ed.* or Retina LGN chapter other eds.)  
  *Kandel* – 26  
  *Purves* – *IIIrd Ed.*/*Vision: The Eye*  
  Papers to read in Dropbox folder | Dr. Barbara Battelle                        |
| 4   | Nov 1  | Autonomic Nervous System & Emotions                    | *Nicholls* -- 17  
  *Kandel* -- 50,51,61 | Dr. Paul Reier                          |
| 5   | Nov 4  | Memory and Higher-order Cognition                      |                                                     | Dr. Jennifer Bizon                |
| 6   | Nov 6  | Language & Aphasias                                    |                                                     | Dr. Kenneth Heilman               |
| 7   | Nov 8  | UF Homecoming – NO CLASS                               |                                                     |                                   |
| 8   | Nov 11 | Veteran’s Day – NO CLASS                                |                                                     |                                   |
| 9   | Nov 13 | MIDTERM EXAM  
  Material thru Nov 11<sup>st</sup> |                                                     | Drs. Benoit Giasson & Paul Reier |
| 10  | Nov 15 | Repetitive Behaviors, Clinical Issues & Animal Models  |                                                     | Dr. Mark Lewis                    |
| 11  | Nov 18 | Stroke: Pathobiology, Modeling & Outcome               |                                                     | Dr. Sylvain Dore                  |
| 12  | Nov 20 | Chemosensory Neurobiology                              |                                                     | Dr. Shawn Dotson                  |
| 13  | Nov 22 | Functional Magnetic Resonance Imaging of the Brain     | *Review article NK Logothetis*                    | Dr. Marcelo Febo                  |
| 14  | Nov 25 | Blood Brain Barrier & Blood-Nerve Barrier              |                                                     | Dr. Eduardo Candelario-Jalil      |
| 15  | Nov 27/29 | THANKSGIVING HOLIDAYS – NO CLASS |                                                     |                                   |
| 16  | Dec 2  | Drug Discovery & the Nervous System                    |                                                     | Dr. Kevin Felsenstein             |
|     | Dec 4  | FINAL EXAM  
  Material from Nov 15<sup>th</sup> – Dec 2<sup>nd</sup> |                                                     | Drs. Benoit Giasson & Paul Reier |

Disclaimer: This syllabus represents our current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected.
GRADING POLICIES:

Student Presentation/Weekly attendance: 30%
Midterm Exam: 35%
Final Exam: 35%

INSTRUCTIONAL METHODS: Course materials will be delivered using traditional lectures. In addition, reading material and supplemental material will be posted using Drop Box.

COURSE POLICIES:

ATTENDANCE POLICY: You are expected to attend each lecture and actively participate in the student projects.

QUIZ/EXAM POLICY: There are two exams in this course, a mid-term and a final. They are in-class exams comprised primarily of multiple choice and short answer questions.

MAKE-UP POLICY: You are expected to notify the course directors of any anticipated absences. You should make every effort to take the exams on the days they are scheduled. If extenuating circumstances prevent you from taking a scheduled exam, you will need to schedule an appointment to meet with the course directors to identify an alternative exam date.

UF POLICIES:

UNIVERSITY POLICY ON ACCOMMODATING STUDENTS WITH DISABILITIES: Students requesting accommodation for disabilities must first register with the Dean of Students Office (http://www.dso.ufl.edu/drc/). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

UNIVERSITY POLICY ON ACADEMIC MISCONDUCT: Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at http://www.dso.ufl.edu/students.php

ABOUT THE LECTURERS

COURSE CO-DIRECTORS:

Benoit Giasson, Ph.D. is Associate Professor in the Department of Neuroscience and is Co-director of the course
Email: bgiasson@ufl.edu Phone: 352-273-9363

Paul J. Reier, Ph.D. is Professor in the Department of Neuroscience and is Co-director of the course
Email: reier@ufl.edu Phone: 352-392-8696

COURSE FACULTY:

Andrew Ahn, M.D. is Assistant Professor in the Department of Neurology
Email: ahn@neurology.ufl.edu

Barbara Battelle, Ph.D. is Professor in the Department of Neuroscience at the Whitney Marine Laboratory, St. Augustine, FL
Email: battelle@whitney.ufl.edu Phone: 904-461-4022

Jennifer Bizon, Ph.D. is Associate Professor in the Department of Neuroscience
Email: bizonj@ufl.edu Phone: 352-294-5149

Eduardo Candelario-Jalil, Ph.D. is Assistant Professor in the Department of Neuroscience
Email: ecandelario@ufl.edu Phone: 352-273-7116

Shawn Dotson, Ph.D. is Assistant Professor in the Department of Neuroscience
Email: dotson@ufl.edu Phone: 352-294-0030

Sylvain Doré, Ph.D. is Associate Professor in the Department of Anesthesiology
Email: sdore@ufl.edu Phone: 352-273-9663

Marcelo Febo, Ph.D. is Assistant Professor in the Department of Psychiatry
Email: febo@ufl.edu Phone: 352-294-4911

Kevin Felsenstein, Ph.D. is Associate Professor in the Department of Neuroscience
Email: kfelsenstein@ufl.edu Phone: 352-294-5308

Kenneth M. Heilman, M.D. is Professor in the Department of Neurology
Email: heilman@neurology.ufl.edu

Mark Lewis, Ph.D. is Professor in the Department of Psychiatry
Email: marklewis@ufl.edu Phone: 352-294-0415