

**University of Florida**  
**College of Medicine Syllabus**  
**Course: Neurobiology of Pain (1 credit)**  
 Spring, 2015  
 Delivery Format: On-Campus

Instructor Name: Yenisel Cruz-Almeida, MSPH, PhD  
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**Prerequisites** None

## **PURPOSE AND OUTCOME**

### **Course Overview**

Overview of the neurobiology of pain, including peripheral, spinal, subcortical and cortical nociceptive processing in both humans and non-humans animals.

### **Course Objectives and/or Goals**

At the completion of this course participants will be able to:

- 1) Define the scope of the societal impact of pain on healthcare systems
- 2) Describe the neurobiological processes involved in nociception and the pain experience
- 3) Describe methods for investigating pain processing in both nonhuman and human animals
- 4) Explain the mechanisms of pharmacologic and psychological modulation of pain.
- 5) Compare and contrast sources of variability in the human pain experience
- 6) Develop an intervention plan for individuals experiencing a pain condition

### **Instructional Methods**

The course will be taught using lecture and discussion formats. As a participant in this course you will be expected to complete assigned readings prior to attending class.

## **DESCRIPTION OF COURSE CONTENT**

### **Topical Outline/Course Schedule**

| Week | Date(s) | Topic(s)                                | Faculty                                     |
|------|---------|---|---|
| 1    | 12-Jan  | Introduction                            | Yenisel Cruz-Almeida, PhD; Mark Bishop, PhD |
|      | 12-Jan  | Theories of pain                        | Steven George, PhD                          |
| 2    | 26-Jan  | Peripheral Neurobiology                 | Rick Johnson, PhD                           |
| 3    | 2-Feb   | Spinal Neurobiology                     | Robert Caudle, PhD                          |
|      | 2-Feb   | Trigeminal System                       | John Neubert, PhD                           |
| 4    | 9-Feb   | Supraspinal Neurobiology and Processing | Yenisel Cruz-Almeida, PhD                   |
| 5    | 16-Feb  | Pharmacology of pain                    | Robert Caudle, PhD                          |

| Week | Date(s) | Topic(s)                             | Faculty               |
|------|---------|--------------------------------------|-----------------------|
| 6    | 23-Feb  | Pain Assessment in non-human animals | Bob Yeziarski, PhD    |
| 7    | 2-Mar   | <b>Spring Break</b>                  |                       |
| 8    | 9-Mar   | Pain modulation                      | Joseph Riley, PhD     |
| 9    | 16-Mar  | Variability in pain                  | Roger Fillingim, PhD  |
| 10   | 23-Mar  | Variability in pain                  | Mark Bishop, PhD      |
| 11   | 30-Mar  | Pain behavior in humans              | Michael Robinson, PhD |
| 12   | 6-Apr   | Pain behavior in humans              | Steven George, PhD    |
| 13   | 13-Apr  | Pain conditions                      | Mark Bishop, PhD      |
| 14   | 20-Apr  | Presentations                        | Students              |

### Course Materials and Technology

#### CLASS WEBSITE:

The website for this course can be accessed through Sakai. You can sign onto the website using your Gatorlink user name and password. Here you will find class announcements, a copy of the syllabus, links to the assigned readings, and a copy of the lecture slides.

#### REQUIRED TEXTBOOK:

There is no required textbook for this course. Readings will be required for each week of the course and will be provided on the course website.

For technical support for this class, please contact the UF Help Desk at:

- [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu)
- (352) 392-HELP - select option 2
- <https://lss.at.ufl.edu/help.shtml>

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### ACADEMIC REQUIREMENTS AND GRADING

#### Assignments

#### Grading

| Requirement | Due date | Points or % of final grade (% must sum to 100%) |
|-------------|----------|---|
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|--------|---|----|----|---|----|----|---|----|----|---|----|---|----|---|----|----|
| Letter | A | A- | B+ | B | B- | C+ | C | C- | D+ | D | D- | E | WF | I | NG | S- |
|--------|---|----|----|---|----|----|---|----|----|---|----|---|----|---|----|----|

|                     |     |      |      |     |      |      |     |      |      |     |      |     |     |     |     |          |
|---------------------|-----|------|------|-----|------|------|-----|------|------|-----|------|-----|-----|-----|-----|----------|
| <b>Grade</b>        |     |      |      |     |      |      |     |      |      |     |      |     |     |     |     | <b>U</b> |
| <b>Grade Points</b> | 4.0 | 3.67 | 3.33 | 3.0 | 2.67 | 2.33 | 2.0 | 1.67 | 1.33 | 1.0 | 0.67 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0      |

Please be aware that a C- is not an acceptable grade for graduate students. In addition, a grade of C counts toward a graduate degree only if an equal number of credits in courses numbered 5000 or higher have been earned with an A.

For greater detail on the meaning of letter grades and university policies related to them, see the Registrar's Grade Policy regulations at:  
<http://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

## Exam Policy

### Policy Related to Make up Exams or Other Work

Please note: Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from LSS when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail me within 24 hours of the technical difficulty if you wish to request a make-up.

### Policy Related to Required Class Attendance

All faculty are bound by the UF policy for excused absences. For information regarding the UF Attendance Policy see the Registrar website for additional details:  
<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

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## STUDENT EXPECTATIONS, ROLES, AND OPPORTUNITIES FOR INPUT

### Expectations Regarding Course Behavior

#### Communication Guidelines

#### Academic Integrity

Students are expected to act in accordance with the University of Florida policy on academic integrity. As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge:

**“We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.”**

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied:

**“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”**

It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary

action. For additional information regarding Academic Integrity, please see Student Conduct and Honor Code or the Graduate Student Website for additional details:

<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>  
<http://gradschool.ufl.edu/students/introduction.html>

Please remember cheating, lying, misrepresentation, or plagiarism in any form is unacceptable and inexcusable behavior.

### **Online Faculty Course Evaluation Process**

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

## **SUPPORT SERVICES**

### **Accommodations for Students with Disabilities**

If you require classroom accommodation because of a disability, you must register with the Dean of Students Office <http://www.dso.ufl.edu> within the first week of class. The Dean of Students Office will provide documentation of accommodations to you, which you then give to me as the instructor of the course to receive accommodations. Please make sure you provide this letter to me by the end of the second week of the course. The College is committed to providing reasonable accommodations to assist students in their coursework.

### **Counseling and Student Health**

Students sometimes experience stress from academic expectations and/or personal and interpersonal issues that may interfere with their academic performance. If you find yourself facing issues that have the potential to or are already negatively affecting your coursework, you are encouraged to talk with an instructor and/or seek help through University resources available to you.

- The Counseling and Wellness Center 352-392-1575 offers a variety of support services such as psychological assessment and intervention and assistance for math and test anxiety. Visit their web site for more information: <http://www.counseling.ufl.edu>. On line and in person assistance is available.
- You Matter We Care website: <http://www.umatter.ufl.edu/>. If you are feeling overwhelmed or stressed, you can reach out for help through the You Matter We Care website, which is staffed by Dean of Students and Counseling Center personnel.
- The Student Health Care Center at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 392-0627 or check out the web site at: <https://shcc.ufl.edu/>
- Crisis intervention is always available 24/7 from:  
 Alachua County Crisis Center  
 (352) 264-6789

<http://www.alachuacounty.us/DEPTS/CSS/CRISISCENTER/Pages/CrisisCenter.aspx>

Do not wait until you reach a crisis to come in and talk with us. We have helped many students through stressful situations impacting their academic performance. You are not alone so do not be afraid to ask for assistance.