# Syllabus: Comparative Physiology

# Florida International University, Department of Biological sciences

# PCB 4724 - U01, Fall 2021

**Class number:** 81649

**Instructor**: **Fernando Gabriel Noriega**

Web page Course: **http://faculty.fiu.edu/~noriegaf/NoriegaClass.htm**

**Lectures:** Tuesdays-Thursdays 9.30 AM-10.45 AM

**Room: Deuxieme Maison 193**

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**Office hours:** Monday 9 AM- 11 AM

**Prerequisites: General Biology I and II, Organic Chemistry I**

**Course Objectives**: To use a comparative approach to study how physiological processes in groups of unrelated animals have evolved to cope with similar environmental challenges.

**Text**: **Animal Physiology**, Hill, Wyse and Anderson. 2016, 4nd edition. Sinauer Associates, MA. ISBN 9781605354712. **REQUIRED (1st , 2nd and 3rd editions are accepted)**

**Grading if face to face**: There will be a total of 100 combined earnable points.

* 30 points will come from Quizzes.
* 10 points will come from a paper presentation.
* 30 points will come from a Midterm exam.
* 30 points will come from a Final exam.

**Quizzes:** There will be a short quiz during the first 10 minutes of most classes. If you are late, the time is lost. Each quiz is a single question that you must answer with a short and concise paragraph. You will be permitted to drop 20% of quiz scores in determining your final quiz grade, so the 80% highest quiz scores will be used to determine your quiz grade. The quizzes will cover material from the lectures and the assigned reading.

**Papers:** Oral presentation of a paper on topic and format to be discussed.

**Midterm and Final exams**: they will consist of written answers to questions in the same format as the daily quiz.

Numeric Grade Equivalents:

**A = 90% - 100% (89= A-)**

**B = 80% - 88% (79= B-)**

**C = 70% - 78% (69= C-)**

**D = 60% - 68%**

**F = Below 60%**

**Lecture and Activities Schedule** (**subject to change**)

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| **Date** | **Topic** | **Required Reading** |
| **Tu 8/24** | [**Introduction**](file:///C%3A%5CUsers%5CFernando%20Noriega%5CDocuments%5CWSFTP%20WEBSITE%5CNoriega%5Cimg%5Cwebpage%5C4.power%20points%20comp%20physiol%5C1.%20Introduction-2013.pdf) **(1)** | **Chapter 1** |
| **Th 8/26** | [**Fundamentals of Physiology**](file:///C%3A%5CUsers%5CFernando%20Noriega%5CDocuments%5CWSFTP%20WEBSITE%5CNoriega%5Cimg%5Cwebpage%5C4.power%20points%20comp%20physiol%5C2.Fundaments%20of%20Physiology%201.pdf) **(2)** | **Chapter 2** |
| **Tu 8/31** | **Fundamentals of Physiology (3)** | **Chapter 5** |
| **Th 9/2** | **Comparative Physiology in the post-genomic era (4)**  | **Chapter 3, 4** |
| ***II. Food, Energy and Temperature*** |
| **Tu 9/7** | **Nutrition and feeding (5)** | **Chapter 6** |
| **Th 9/9** | **Digestion (6)**  | **Chapter 6** |
| **Tu 9/14** | **Energy Metabolism I (7)**  | **Chapter 7- 8** |
| **Th 9/16** | **Energy Metabolism II (8)**  | **Chapter 8-9** |
| **Tu 9/21** | **Thermoregulation I (9)**  | **Chapter 10** |
| **Th 9/23** | **Thermoregulation II (10)**  | **Chapter 10** |
| ***III.* *Integrating Systems*** |
| **Tu 9/28** | **Neurobiology I (11)**  | **Chapter 12, 13, 15** |
| **Th 9/30** | **Neurobiology II (12)** | **Chapter 12, 13, 15** |
| **Tu 10/5** | **Sensory physiology (13)** | **Chapter 14** |
| **Th 10/7** | **MIDTERM EXAM (14)** |  **Chapters 1-14** |
| **Tu 10/12** | **Endocrinology (15)**  | **Chapter 16** |
| **Th 10/14** | **Muscle (16)**  | **Chapters 19-20** |
|  | ***V. Gas exchange and internal transport*** |  |
| **Tu 10/19** | **Respiration (17)**  | **Chapter 22,23, 24** |
| **Th 10/21** | **Paper discussion; (18) Groups 1 and 2** |  |
| **Tu 10/26** | **Paper discussion; (19) Groups 3 and 4** |  |
| **Th 10/28** | **Paper discussion; (20) Groups 5 and 6** |  |
| **Tu 11/2** | **Paper discussion: (21) Groups 7 and 8** |  |
| **Th 11/4** | **Paper Discussion (22) Groups 9 and 10** |  |
| **Tu 11/9** | **Paper Discussion (23) Groups 11 and 12** |  |
| **Tu 11/16** | **Circulation (24)** | **Chapter 25** |
|  | ***VI. Water, Salt and Excretion*** |  |
| **Tu 11/18** | **Water and salt physiology I (25)** | **Chapter 27,28** |
| **Th 11/23** | **Water and salt physiology II (26)** | **Chapter 27,28** |
| **Tu 11/30** | **Excretion (27)**  | **Chapter 29** |
| **Th 12/2** | **Review** |  |
| **Tu 12/7** | FINAL EXAM  | Chapters 16-29 |