

## **Biology 3200: Human Physiology**

Fall Semester, 2020

Lecturer: Dr. David Njus

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Phone: 313-577-3105

Open Zoom sessions: Tuesdays, 1:00 – 2:15 pm

Zoom meetings by appointment: Thursdays, 1:00 – 2:15 pm

Instructional Assistant: Despina Tsitlakidou ([despo@wayne.edu](mailto:despo@wayne.edu))

Lectures: online

### **Course description:**

This course will cover the functioning of the main physiological systems: endocrine, nervous, musculoskeletal, circulatory, respiratory, digestive, urinary, immune and reproductive. The course is about the principles of physiology, so you must understand how and why these systems function as they do and not just memorize facts. Physiology integrates what you have learned about biology at the molecular and cellular levels to explain the functioning and survival of the organism as a whole.

### **Course objectives:**

The objectives of the course are for students to be able to explain how the major organ systems work. You will be able to integrate physical and chemical processes from molecular to organ levels. You will be able to analyze how physiological systems are regulated to maintain normal function. Finally, you will be able to explain what happens when physiological systems fail.

### **Online Instruction:**

Lectures, class announcements, homework and grades will be posted on Canvas. Exams will be administered online during regularly scheduled class times using the Respondus lockdown browser and monitor (<https://tech.wayne.edu/kb/academic-services/canvas/598>). For this, you will require reliable hardware and software including the following:

#### Hardware

- a desktop or laptop computer with reliable internet access, a web cam, microphone and speakers.

#### Software

- a web browser (e.g., Firefox, Chrome, Safari)
- Microsoft Office (free to students)
- the Canvas, Zoom, and Respondus lockdown browser/monitor apps (free to students)

**Prerequisites:**

Students taking this course should have completed the prerequisite courses: either BIO 2600 or BIO 2870 with a grade of C- or better.

**Required Materials:**

Textbook: *Human Physiology: An Integrated Approach*, Eighth Edition by Dee Unglaub Silverthorn.

**Exams and Grading:** Grades will be based on a 1000-point scale as follows:

|                             |             |
|-----------------------------|-------------|
| Exam 1                      | 200         |
| Exam 2                      | 200         |
| Exam 3                      | 200         |
| Exam 4                      | 200         |
| <u>Homework assignments</u> | <u>200</u>  |
| Total                       | 1000 points |

Grades will be calculated on the following scale:

|    |           |                   |
|----|-----------|-------------------|
| A  | 92.5-100  | (925-1000 points) |
| A- | 90.0-92.4 | (900-924)         |
| B+ | 87.5-89.9 | (875-899)         |
| B  | 82.5-87.4 | (825-874)         |
| B- | 80.0-82.4 | (800-824)         |
| C+ | 77.5-79.9 | (775-799)         |
| C  | 72.5-77.4 | (725-774)         |
| C- | 70.0-72.4 | (700-724)         |
| D+ | 67.5-69.9 | (675-699)         |
| D  | 62.5-67.4 | (625-674)         |
| D- | 60.0-62.4 | (600-624)         |
| F  | 0-59.9    | (0-599)           |

**Exams:** There will be four exams. Each of the exams will consist of 50 multiple choice questions and be worth 200 points. Missed exams will be scored as zero, unless arrangements are made in advance or a valid excuse is documented. In this case, the missing exam score will be determined by a makeup exam given during final exam week.

**Assignments:** There will be 8 homework assignments all intended to give you a chance to think about how specific physiological systems work. Homework will be distributed and submitted as Assignments on Canvas. These will each be worth 25 points and will be due as follows:

- |                 |               |                |                |
|-----------------|---------------|----------------|----------------|
| 1. September 10 | 3. October 6  | 5. October 29  | 7. November 24 |
| 2. September 17 | 4. October 13 | 6. November 10 | 8. December 3  |

## General Policies:

1) Anyone caught cheating or plagiarizing will automatically receive a failing grade for that exam or assignment, with no opportunity to drop or replace that score. A second episode of cheating will result in a grade of F for the course and may also result in initiation of university disciplinary action. For discussions of cheating and plagiarism, see the "Student Code of Conduct," which can be found at <https://doso.wayne.edu/conduct/pdf/student-code-of-conduct.pdf>.

2) Any special considerations (disabilities, religious holiday conflicts, etc.) must be brought to the attention of the instructor by September 10, 2020 or as soon as possible. If you have a disability that may interfere with your ability to successfully complete the requirements for this course, you are invited to contact Student Disability Services (1600 Undergraduate Library; 313-577-1851) to discuss appropriate accommodations on a confidential basis.

3) Conflicts regarding the grading of any exam or assignment must be brought to the attention of Dr. Njus in a concise and typed appeal within one week of the date the exam or assignment key is posted. Appeals may be sent as an email.

4) Tuesday, September 15, 2020 is the last day you can drop the class and get your tuition refunded. Sunday, November 15, 2020 is the deadline for withdrawing from the course. Please note that “**incomplete**” grades will not be issued to students in poor standing who are seeking an alternative to a late drop.

### 5) Technology Access and Support

For assistance with Canvas, see C&IT’s Student Introduction to Canvas course (<https://canvas.wayne.edu/courses/20804>) and Comprehensive Student Guide. For assistance with any technology issues, contact the C&IT Helpdesk M-F from 7:30 am to 8 pm at 313-577-4357 or [helpdesk@wayne.edu](mailto:helpdesk@wayne.edu).

Students who lack adequate hardware or reliable internet access should email [doso@wayne.edu](mailto:doso@wayne.edu) or call 313-577-1010 for assistance. Students on campus also have access to equipment through University Libraries. See Equipment Checkout Policy and Procedures (<https://library.wayne.edu/equipmentcheckout#borrowing-agreement>). The University Libraries also have computer labs in several campus locations.

### 6) Support for Online Learning

- *The Effective Online Learner* is a self-paced Canvas course to bolster the skills needed for remote and online learning.
- *Learn Anywhere* (<https://success.wayne.edu/learnanywhere>) is a webpage that provides resources and tips for taking online courses.
- *Academic Success Center* (<https://success.wayne.edu/>) offers resources for improving study skills, building study groups, and similar activities.
- *Study Skills Academy* (<https://success.wayne.edu/study-skills>) offers free study skills counseling (<https://success.wayne.edu/study-skills/counseling>) and other services.

## Lecture Schedule

| <b>Date</b>    | <b>Topic</b>                             | <b>Reading</b>                 |
|----------------|--|--------------------------------|
| 1-Sept         | 1. Introduction to Physiology            | Chapter 1                      |
| 3-Sept         | 2. Communication, Homeostasis            | Chapter 6                      |
| 8-Sept         | 3. Endocrine System                      | Chapter 7                      |
| 10-Sept        | 4. Neurons                               | Chapter 8 Homework due         |
| <b>15-Sept</b> | 5. Neurons                               | Chapter 8 <b>Practice Exam</b> |
| 17-Sept        | 6. Central Nervous System                | Chapter 9 Homework due         |
| 22-Sept        | 7. Sensory Physiology                    | Chapter 10                     |
| <b>24-Sept</b> | <b>Exam 1</b>                            |                                |
| 29-Sept        | 8. Efferent Division                     | Chapter 11                     |
| 1-Oct          | 9. Muscles                               | Chapter 12                     |
| 6-Oct          | 10. Control of Body Movement             | Chapter 13 Homework due        |
| 8-Oct          | 11. Cardiovascular Physiology            | Chapter 14                     |
| 13-Oct         | 12. Cardiovascular Physiology            | Chapter 14 Homework due        |
| 15-Oct         | 13. Blood Flow and Pressure              | Chapter 15                     |
| <b>20-Oct</b>  | <b>Exam 2</b>                            |                                |
| 22-Oct         | 14. Blood                                | Chapter 16                     |
| 27-Oct         | 15. Mechanics of Breathing               | Chapter 17                     |
| 29-Oct         | 16. Gas Exchange and Transport           | Chapter 18 Homework due        |
| 3-Nov          | <i>Election Holiday</i>                  |                                |
| 5-Nov          | 17. The Kidneys                          | Chapter 19                     |
| 10-Nov         | 18. The Kidneys                          | Chapter 19 Homework due        |
| 12-Nov         | 19. Fluid & Electrolyte Balance          | Chapter 20                     |
| <b>17-Nov</b>  | <b>Exam 3</b>                            |                                |
| 19-Nov         | 20. The Digestive System                 | Chapter 21                     |
| 24-Nov         | 21. Metabolism & Energy Balance          | Chapter 22 Homework due        |
| 26-Nov         | <i>Thanksgiving Holiday</i>              |                                |
| 1-Dec          | 22. Endocrine Control of Growth          | Chapter 23                     |
| 3-Dec          | 23. The Immune System                    | Chapter 24 Homework due        |
| 8-Dec          | 24. Reproduction & Development           | Chapter 26                     |
| <b>10-Dec</b>  | <b>Exam 4</b>                            |                                |
| <b>17-Dec</b>  | <b>Makeup Exam from 12:30 pm-2:30 pm</b> |                                |