NJIT BIOLOGY

Course Syllabus

SPRING 2024

BIOLOGY 340: MAMMALIAN PHYSIOLOGY

INSTRUCTOR:	John Yarotsky, PhD	**PHONE:**	973-642-7976
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LECTURES:	Kupf 210 Mon/Thurs: 4-5:20		
OFFICE HOURS:	**Wed 3-6**		

DESCRIPTION:

In this course we will examine basic concepts of mammalian physiology, including membrane biology, protein structure as applied to the structure of transmembrane transport proteins, cellular excitability and neuronal signaling, mechanisms of muscle physiology, sensory-motor integration, blood and fluid mechanics, cardiovascular physiology and regulation, gas transport and control of respiration, digestive system function, renal physiology and electrolyte homeostasis, endocrine function, growth and metabolism. We will examine the physico-chemical basis of how each system operates and build from this an understanding of the function of each system as a whole. This knowledge will be applied to the understanding of everyday activities of the human body.

GOALS:

This course will review general principles of the function of the human body as a mammal, with emphasis on the function and regulation of neuromuscular, cardiovascular, respiratory, endocrine, digestive, and excretory systems. The goal is to provide students with the basic knowledge to understand how their own bodies operate.

PREREQUISITES:

Foundations of Biology (R120: 201, 202)

TEXTBOOKS:

- **Lecture Textbook**: Human Anat & Phys— 10th edition— Marieb, & Hoehn **ISBN-13: 9780133995190** A physical used copy can be found for a reasonable price (Usually less than $30) and an online version can be purchased for $54 from a number of online retailers.

- **Lab Materials:**
  1) **Lab Textbook:** Human Anatomy & Physiology Laboratory Manual, Main Version- 11th Edition- Marieb & Hoehn, **ISBN-13: 978-0133873214**

  2) **PhysioEx** is a software that will be used for the virtual Lab Exercises. Access can be purchased on this page:

  https://media.pearsoncmg.com/bc/bc_0media_ap/physioex//10/login/sign-in.php?dest=https://media.pearsoncmg.com/bc/bc_0media_ap/physioex/10/index.php

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WEEK	DATES	TOPICS
Week 1	Jan 18	Lecture 1-Homeostasis
Week 2	Jan 22-25	Lecture 2-Cell Signaling — Lecture 3-Nervous System
Week 3	Jan 29 Feb 1	Lecture 4- Nervous System Part 2 — Lecture 5-Central Nervous System
Week 4	Feb 5-8	Lecture 6- CNS Part 2 — Lecture 7- Muscle Part 1
Week 5	Feb 12-15	**Mini Exam #1** — Lecture 8- Muscle Part 2
Week 6	Feb 19-22	Lecture 9- Blood — Lecture 10-Blood Part 2
Week 7	Feb 26-29	Lecture 11-Blood Vessels — Lecture 12- Heart
Week 8	Mar 4-7	Lecture 13- Heart Conducting System — Lecture 14- Respiratory System Part 1
Week 9	Mar 11-14	**SPRING BREAK – NO CLASSES**
Week 10	Mar 18-21	**Mini Exam #2** — Lecture 15- Respiratory System Part 2
Week 11	Mar 25-28	Lecture 16- Digestive System Part 1 — Lecture 17- Digestive System Part 2
Week 12	Apr 1-4	Lecture 18- Endocrine System Part 1 — Lecture 19- Endocrine System Part 2
Week 13	Apr 8-11	**Mini Exam #3** — Lecture 20- Immune System Part 1
Week 14	Apr 15-18	Lecture 21 Immune System Part 2 — Lecture 22- Urinary System Part 1
Week 15	Apr 22-25	Lecture 23- Urinary System Part 2
Week 16	April 29	**MINI EXAM #4**
Important Semester Dates		▪ **March 11-14** Spring Break ▪ **March 29 (F):** **Good Friday** – University Closed. ▪ **April 30 (T):** Last Day of Classes.

FINALS	FINAL EXAM WEEK: May 10th 8:30 AM GITC 1100

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EXAMINATIONS:

- Your final letter grade is based on lecture exams (75%) and laboratory (25%). There are 4 lecture exams. I will drop the lowest grade of the 4 exams. Each exam will be worth 20% (60% of total lecture) and the cumulative final exam is worth 40% of the total lecture grade. **Extra credit is not an option**.

- Students will have 80 minutes to complete 50 multiple choice questions. **ATTENDANCE IS MANDATORY FOR MINI EXAM PERIODS**. Make up exams will only be given after authorization from the Office of the Dean of Student Affairs. You must bring proper documentation to that office **ONLY.** Do not contact the instructors or TAs regarding a missed assignment as they are not authorized to grant make ups. Only the Dean of Student Affairs is to be contacted.

- The **Final Exam is cumulative** and it is during the Final Exam Period: Wil be announced in class

- **ATTENDANCE POLICY:**

Laboratory attendance is **MANDATORY**. **If you miss two lab classes, you FAIL the course.** Attendance is also required to do well in the lecture section of the course. Attendance (sign-in sheets) is taken in every lab class.

- If attendance becomes a problem, the lecture and lab instructor will begin to administer impromptu quizzes that will later be calculated into the Lecture exam grades, valuing at 10% of total semester grade.

HONOR CODE:

This course will strictly adhere to the NJIT Honor Code!! Both the lecture and the lab will have zero tolerance for violations to the NJIT's University Code on Academic Integrity!!

This is a reading intensive course! Due the volume of material that is to be covered, students are expected to know topics in the text book that could not be covered during lectures. ◄ READ CHAPTERS BEF ►