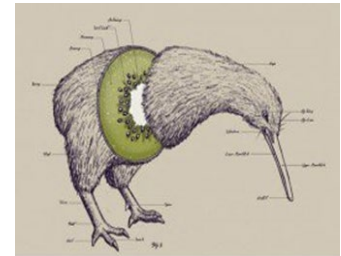


**BIOLOGY 610-001: COMPARATIVE VERTEBRATE ANATOMY**

<b>INSTRUCTOR:</b>	Dr. Brooke Flammang-Lockyer	<b>EMAIL:</b>	<a href="mailto:flammang@njit.edu">flammang@njit.edu</a>
<b>TA:</b>	Audrey Biondi	<b>EMAIL:</b>	<a href="mailto:aab53@njit.edu">aab53@njit.edu</a>
<b>OFFICE:</b>	428K Central King Bldg.	<b>OFFICE HOURS:</b>	W: 12:00PM –1:00PM or by appointment
<b>COURSE SCHEDULE:</b>	M, W: 1:00PM - 2:20PM <a href="#">course times &amp; location</a>	<b>COURSE WEBSITE:</b>	<a href="https://canvas.njit.edu/">https://canvas.njit.edu/</a>

**COURSE DESCRIPTION:**

This course introduces students to the groups of vertebrates and explores the anatomical evolution of vertebrates within the context of the functional interrelationships of organs and the changing environments to which vertebrates have adapted. An ideal entry point into the ways living creatures interact with their immediate physical world, we examine how the forms and activities of animals reflect the materials available to nature and consider rules for structural design under environmental forces.



**COURSE PREREQUISITES:** BIOL 200 and BIOL 205/206

**Required Materials:** Colored pens/pencils and blank paper for notetaking and drawing.

**Required Texts:**

- Subin, Neil (2008) Your Inner Fish: A journey into the 3.5 billion-year history of the human body. Pantheon Books. ISBN: 978-0375424472
- Gilbert, Stephen. (1973) Pictorial Anatomy of the Dogfish. University of Washington Press. ISBN: 978-0295951485
- Gilbert, Stephen. (1975) Pictorial Anatomy of the Cat, Revised Edition. University of Washington Press. ISBN: 978-0295954547

**CLASS POLICIES:**

**Cell Phones:** The use of cell phones during class or exam times is prohibited. However, use of technology during lab sections to photograph dissections for study purposes and look up pertinent anatomical information online is encouraged.

**Makeup Exam Policy:** There will be no makeup exams, except in rare situations where the student has a legitimate reason for missing an exam, including illness, death in the family, accident, requirement to appear in court, etc. The student must notify the Biological Sciences office and the Instructor that he/she will miss an exam. In all cases, the student must present proof for missing the exam TO THE DEAN OF STUDENTS OFFICE, e.g., a doctor's note, police report, or court notice, etc., clearly stating the date and times.

**BIOLOGY 610-001: COMPARATIVE VERTEBRATE ANATOMY**

**Academic Integrity:** Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at: ([Academic Integrity](#)). Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at [dos@njit.edu](mailto:dos@njit.edu). Rutgers has similar rules (<http://www.ncas.rutgers.edu/oas/ai>).

**Extra Credit:** I do **not** give extra credit at the end of the semester or in return for doing poorly on a test or assignment (please don't even ask). However students may earn 1 point toward their final point score (note, this is not the same as a point toward your calculated grade) for each comparative anatomy meme or cartoon that relates directly to a topic we have recently discussed (within the week). **There is a limit of 1 point per lecture for submissions**, and they must be funny and not inappropriate to earn a point.

**TEACHING ASSISTANT:** Audrey Biondi ([aab53@njit.edu](mailto:aab53@njit.edu))

**GRADING POLICY:**

COMPONENT	PERCENT
Reading Quizzes	20%
Midterm Exam	20%
Lab Notes	20%
Lab Practical	20%
Final Exam	20%
<b>TOTAL</b>	<b>100%</b>

GRADING SCALE	
A	90-100
B+	83-89
B	73-82
C+	65-72
C	60-64
D	50-59
F	0-49

- Reading quizzes will be at the beginning of lecture every Monday. Please be prompt. There are no make-ups.
- Lab Practicals cannot be made up and must be completed in the time allotted.
- Exams can only be made up for valid reasons (see the University's policy regarding make up exams) and your reason must be approved through the Academic Affairs Office.

Exams and practicals will not be curved and the lowest grade will not be dropped.

## BIOLOGY 610-001: COMPARATIVE VERTEBRATE ANATOMY

### LEARNING EXPECTATIONS AND ASSESSMENT:

In this course, students will learn to:

1. Demonstrate the role of physics in the life of biological organisms
2. Identify parameters important to the function of physiological systems
3. Define anatomical structures in fish, reptiles, and mammals
4. Identify homologous structures in different organisms
5. Diagram the forces acting on skeletal structures to generate motion of an organism
6. Explain the factors that influence stability of a physiological structure
7. Explain the ontogenetic and evolutionary changes to the nervous, respiratory, circulatory, digestive, and urogenital systems as organisms adapted to new ecological niches and physiological needs over time

### COURSE OUTLINE:

DATES	LECTURE TOPICS	LAB	READINGS
Sept. 4	Introduction to the Course		
Sept. 9, 11	Finding Your Inner Fish	NO LAB	Ch. 1
Sept. 16, 18	Getting a Grip	LAB 1: Cranial skeleton	Ch. 2
Sept. 23, 25	Handy Genes	LAB 2: Cranial skeleton	Ch. 3
Sept. 30, Oct 2	Teeth Everywhere	LAB 3: Cranial skeleton	Ch. 4
Oct. 7, 9	Getting Ahead	<b>LAB PRACTICAL</b>	Ch. 5
Oct. 14, 16	<b>No Lecture (M 14 Oct), EXAM (W 16 Oct)</b>	Axial skeleton	
Oct. 21, 23	The Best-Laid (Body) Plans	LAB 4: Appendicular skeleton	Ch. 6
Oct. 28, 30	Adventures in Bodybuilding	LAB 5: Appendicular skeleton	Ch. 7
Nov. 4, 6	Making Scents	<b>LAB PRACTICAL</b>	Ch. 8
Nov. 11, 13	Vision	LAB 7: Muscles	Ch. 9
Nov. 18, 20	Ears	LAB 8: Muscles	Ch. 10
Nov. 25	<i>No lecture</i>	LAB 9: Organs	Ch. 11
Dec. 2, 4	The Meaning of it All, Summary Pt 1	LAB 10: Organs	
Dec. 9, 11	Summary Parts and 3	<b>LAB PRACTICAL</b>	
<b>FINALS: TBD</b>	<b>FINAL EXAM WEEK: DECEMBER 14-20, 2019</b>		