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Fall 2018

BIOL 285-001-005: Comparative Vertebrate Anatomy

Brooke Flammang-Lockye

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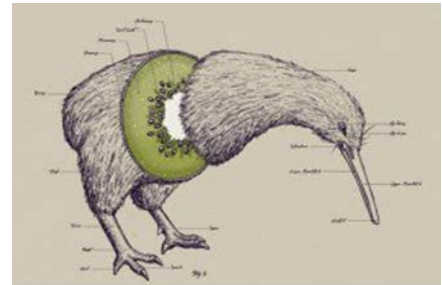
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BIOLOGY 285(001-005): COMPARATIVE VERTEBRATE ANATOMY

INSTRUCTOR:	Dr. Brooke Flammang-Lockye	EMAIL:	flammang@njit.edu
OFFICE:	428K Central King Bldg.	OFFICE HOURS:	W: 12:00PM –1:00PM or by appointment
COURSE SCHEDULE:	M, W: 1:00PM - 2:20PM course times & location	COURSE WEBSITE:	http://moodle.njit.edu/

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

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.

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.

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If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at 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 ASSISTANTS: Callie Crawford (chc24@njit.edu)

Justin Bernstein (jmbernst223@gmail.com)

GRADING POLICY:

COMPONENT	PERCENT
Mini Exam	20%
Midterm Exam	20%
Lab Quizzes	20%
Lab Practical	20%
Final Exam	20%
TOTAL	100%

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 Quizzes cannot be made up and must be completed in the time allotted.
- Exams (including the lab practical) can only be made up for valid reasons (see the University's policy regarding make up exams) and must be accompanied by valid documentation (Dr's note, police report, etc.).

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

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

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COURSE OUTLINE:

DATES	LECTURE TOPICS	LAB	READINGS
Sept. 5	Introduction to the Course		
Sept. 10, 12	Finding Your Inner Fish	LAB 1: "Look at your fish"	Ch. 1
Sept. 17, 19	Getting a Grip	LAB 2: Skeletal system I	Ch. 2
Sept. 24, 26	Handy Genes	LAB 3: Skeletal system II	Ch. 3
Oct. 1, 3	Teeth Everywhere	LAB 4: Muscular System I	Ch. 4
Oct. 8, 10	Getting Ahead	LAB 5: Muscular System II	Ch. 5
Oct. 15, 17	Review (M 15 Oct), MIDTERM EXAM (W 17 Oct)		
Oct. 22, 24	The Best-Laid (Body) Plans	LAB 6: Biomechanics	Ch. 6
Oct. 29, 31	Adventures in Bodybuilding	LAB 7: Nervous System	Ch. 7
Nov. 5, 7	Making Scents	LAB 8: Respiratory System	Ch. 8
Nov. 12, 14	Vision	LAB 9: Circulatory System	Ch. 9
Nov. 19	Ears	LAB 10: Digestive System	Ch. 10
Nov. 26, 28	The Meaning of it All, Summary Pt 1	LAB 11: Urogenital System	Ch. 11
Dec. 3, 5	Summary Parts 2 and 3	Review	
Dec. 10	Final Exam Review	LAB PRACTICAL	
FINALS: TBD	FINAL EXAM WEEK: DECEMBER 15-21, 2018		