

Fall 2015

BIOS 1083

Jacqueline Nesbit
University of New Orleans

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THE HEARTBEAT of
the **CRESCENT CITY**

The University of New Orleans

Department of Biological Sciences

Form & Function

Fall 2015 Education Building Rm 203

MW 3:30 - 4:45

BIOS 1083, section 002

Instructor

Dr. Nesbit (Preferred contact via e-mail listed below)

Office: Biological Sciences Building, Room 230

Phone: (504)280-6478

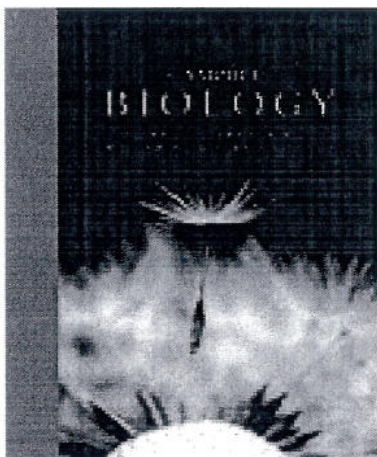
Email: jbnesbit@uno.edu

Office Hours: M Tu W 12:30 - 2:30

Course Description

This course is intended for College of Sciences majors. Non-science majors and science education majors may enroll with the consent of department. An introduction to animal and plant structure and function at the level of cells, tissues, and organ systems. Prerequisites: Eligibility for enrollment in, or credit for, ENGL 1157 and MATH 1125, or credit for a higher level English or Math. Concurrent enrollment in BIOS 1081 is strongly recommended.

Textbooks & Resources Required



Biology 10th Edition ISBN 9780321775658. You may use the 8th or 9th editions as the online code comes with an eText so you will have access to information that may differ between editions.

You will also be required to purchase the Pearson Mastering Biology On-Line Resource. This code comes with an eText. Please go to the following link for directions and information:

<http://www.pearsonmylabandmastering.com/northamerica/masteringbiology/students/get-registered/index.html>

Course ID: MBNESBIT36422

Options for purchasing the above materials:

At the bookstore:

Hardcopy plus Mastering Biology Online Resource

Looseleaf version plus Mastering Biology Online Resource

Mastering Biology code stand-alone

Through Pearson Online Resource Website (see link above):

Mastering Biology code online access

Course Objectives

By the end of this course students will be able to:

Describe the common themes of life.

Explain the core theme of evolution and how evolution accounts for the unity and diversity of life.

Define an hypothesis and theory as well as a controlled experiment.

Describe the relationship between matter, elements and the three main subatomic particles.

Define a covalent, ionic and hydrogen bond and explain their importance in biology.

Understand the structure of water and the concept of pH.

Describe a carbohydrate, lipid, protein and nucleic acid and give examples of each.

Compare and contrast a prokaryotic and eukaryotic cell.

Describe the structure of a plasma membrane and define diffusion, facilitated diffusion, osmosis and active transport.

Define an enzyme and their importance to biology.

Explain in basic terms, cellular respiration and photosynthesis and how the two are related.

Compare and contrast mitosis and meiosis.

Explain the central dogma of molecular biology; transcription, translation and replication.

Define a gene, an allele, a chromosome and genome.

Describe a virus and a prion.

Identify the four mammalian tissues.

Define homeostasis.

Identify the components of the mammalian cardiovascular system and trace the blood flow through the pulmonary and systemic circuits.

Compare and contrast mammalian organ systems to insect, fish, bird, amphibian and reptile systems.

Compare and contrast an artery, vein and capillary.

Identify the components of the mammalian respiratory system.

Explain pulmonary ventilation and systemic gas exchange. Compare gas exchange to other life forms.

Compare and contrast the nervous system and endocrine systems of mammals.

Explain the relationship between the hypothalamus and the pituitary gland.

Describe how a motor neuron excites a skeletal muscle cell.

Describe a graded potential and an action potential.

Describe a general sensory receptor and the mammalian eye.

Course Policies and Expectations

Attendance:

Attendance is mandatory for all 1000/2000 level classes. You will not receive extra points for attendance. However, please see the grading rubric for the benefit of excellent attendance. There are no make-ups for exams. If an emergency forces you to miss an exam, then you may be allowed a make-up exam only with a valid and documented excuse, i.e. a written note from a physician or nurse at the University Health Center stating:

1. the suspected nature of the illness
2. The suspected severity of the illness, i.e., that the illness could be severe enough to warrant missing class.

Academic Integrity:

Students are expected to conduct themselves according to the principles of academic integrity as defined in the statement on Academic Dishonesty in the UNO Student Code of Conduct. Any student or group found to have committed an act of academic dishonesty shall have their case turned over to the Office of Student Accountability and Advocacy for disciplinary action which may result in penalties as severe as indefinite suspension from the University. Academic dishonesty includes, but is not limited to: cheating, plagiarism, fabrication, or misrepresentation, and being an accessory to an act of academic dishonesty. The University of New Orleans Student Code of Conduct can be found at <http://www.uno.edu/studentaffairs/sadocuments/studentcodeofconduct.pdf> and should be consulted if there are any questions.

Please Note: I have ZERO tolerance for cheating during an exam. I will STRICTLY enforce the following rules:

1. I will give ONE warning for wandering eyes. It will sound like this: "Keep your eyes on your own exam". After that, I will take your exam and you will receive a zero.
2. There will be NO cell phones in your lap, on your desk, in your pocket, or on the floor. Your cell phones are to be put on vibrate and put away in your purse or backpack. If I see a cell phone out during an exam, I will take your exam and you will receive a zero.
3. Do not wear a hat during an exam.
4. Do not be late for an exam. Once the first student has finished an exam and left the room, the door will be locked and no one will be allowed to take an exam after that time.
5. Do not ask to leave once you have begun your exam. You may not take a restroom break during the exam so take care of business before you arrive.

Students with Disabilities:

The Office of Disability Services (ODS), in conjunction with the Office of Academic Affairs' campus wide administrative policy regarding the accommodations of students with disabilities, has two primary objectives: 1) to ensure compliance with Section 504 of the 1973 Rehabilitation Act and the Americans with Disabilities Act (ADA) in regard to equal access for qualified students to academic programs; and 2) to uphold the academic integrity of UNO. When these two objectives are met, those students who qualify for services based on clear, comprehensive, and relevant documentation will receive those services or academic modifications for which they are legally entitled.

ODS is considered the University's designated office for determining eligibility for services, reviewing and maintaining documentation, and recommending appropriate accommodations. Students, however, do not have to register with ODS in order to advocate for disability related accommodations. For those instructors who have students with disabilities who choose not to register for services with ODS, and who request academic accommodations, ODS is available as a resource to verify eligibility and recommend appropriate accommodations.

Part of this policy regulates the accommodative testing services. These accommodations are made available in the ODS Accommodative Testing and Adaptive Technology Center (ATATC), located in the Library Room 120. The breakdown of responsibility for ensuring efficient and secure accommodative testing in the ATATC is as follows:

Registered ODS students should:

1. Request from ODS in writing Accommodation Agreements each semester.
2. Set up appointments to meet with each instructor each semester to discuss accommodations and complete agreements.
3. Ensure each party involved receives their copy of the Agreement.
4. Complete Student Section of the Accommodative Testing Form for each test.
5. Arrive promptly at the ATATC and follow test proctor's instructions.

Classroom Etiquette:

1. Please refrain from using your cell phone during class.
2. Please avoid any disruptive behavior.
3. Hostile, harassing and non-inclusive language will not be tolerated. If any of these violations are severe enough, the student and the case can be referred to the Office of Student Accountability and Advocacy, and have possible judiciary consequences.

Once again the University of New Orleans Student code of conduct outlines this process and should be referred to if there are questions. The University of New Orleans Student Code of Conduct can be found at <http://www.uno.edu/studentaffairs/sa-documents/studentcodeofconduct.pdf>.

Conflict Resolution

All conflicts must be resolved in a civil, meaningful manner. Whether the conflict is between students or between student and an instructor, the conflict should be resolved in a private, yet safe environment. If a conflict between students cannot be resolved by the parties alone, then the instructor should step in or be consulted, to either resolve the conflict or direct it to the appropriate resources. If the conflict is between instructor and student, and the conflict cannot be resolved privately, additional consultation may be needed from the chair of the Biological Department, Dr. Wendy Schluchter. Dr. Schluchter can be contacted via email at w Schluchter@uno.edu.

Student Responsibility

It is the responsibility of the student to come prepared for lecture. The student will have already read the appropriate section of the text that corresponds to the lecture topic of the day. Students will arrive to class in a timely manner and display conduct that shows respect for the instructor as well as the other classmates.

"Who you are tomorrow begins with what you do today." Tim Fargo

Instructor Responsibility

As instructors at the University of New Orleans, it is our responsibility to provide students with the best education possible. It is the instructor's responsibility to ensure that each student has an equal opportunity to learn in a safe educational background. As instructors we will arrive to class on time, we will be prompt with grading and returning exams. Every instructor will keep at least 4 hours per week set aside for students to seek additional help or instruction. It is the responsibility of the instructor to answer a student's question to the best of their ability or be able to direct the student to that appropriate resource to answer the question. Instructors will not show bias to any student with regards to gender, race, nationality, sexual orientation/identification or age. All students will be treated fairly and equally.

Exams & Bonus Points

Exams:

There will be four (4) exams in the class. Each exam is worth 100 points and will consist of a combination of multiple choice, matching, true/false and short answer types of questions. You will need a GREEN scantron and a number 2 pencil for all exams. You will have one complete class period to finish your exam (75 minutes). Note: Because there is an optional final exam, one exam grade will be dropped. This means that if you are happy with your grade after exam 4, then you do not have to take the final exam. So, the final exam is your dropped grade. On the other hand, if you are NOT happy with your grade after exam four, you can take the final exam in hopes of boosting your grade. I will drop the lowest exam grade of the five. Taking the final cannot hurt your grade. Please see under academic integrity my rules for taking exams. I will adhere strictly to these rules. The exams will count toward 80% of your grade.

Final Exam:

There is an OPTIONAL final exam. The final exam is cumulative and will be multiple choice questions only. Note the date is Tuesday, Dec 8 at 3:00 in the same room that we meet all semester. While there is a two hour time slot for this exam, you are not allowed a leisure arrival time. The exam begins at 3:00 sharp. DO NOT BE LATE! You will not be allowed to take the exam if any student has already completed his/her exam and left the room. NO EXCEPTIONS!

Exam Keys:

I will return your exam scantron in a timely manner. If you would like a copy of the written portion of the exam, you may come to my office and retrieve one. Please note, however, you will only be allowed to retrieve the exam copy up until the date of the next exam. For instance, if you wish to have a copy of exam one, then you have until the date of exam 2 to pick up the copy. After exam two is administered, exam one is no longer available to you. This is to prevent students bombarding me at the end of the semester (a very busy time for me) with requests for all of the copies of exams. The exam keys will be posted on my door. Please do not take this key farther than the table outside of my office. The keys are for ALL students to use so please keep it available for ALL students to use.

Mastering Biology Quizzes:

There are a total of 18 quizzes on the Mastering Biology website. See Moodle for instructions for registration information. These quizzes are not optional. The quizzes are worth a total of 275 points. Each quiz has a specific due date listed below. The due dates are also posted to your Mastering Biology homepage so please pay attention to them as there will be a 10% reduction in points for every day after the due date. Each quiz is due at midnight on the specific due date. The quizzes will count toward 20% of your grade.

Quiz	Points Possible	Due Date
Chapter 1	20	Aug 30
Chapter 2	25	Aug 30
Chapter 3	15	Sep 1
Chapter 4	10	Sep 8
Chapter 5	40	Sep 8
Chapter 6	25	Sep 20
Chapter 7	15	Sep 23
Chapter 8	10	Sep 27
Chapter 9	15	Oct 4
Chapter 10	10	Oct 11
Chapter 12	10	Oct 18
Chapter 13	10	Oct 18
Chapter 16	15	Oct 25
Chapter 17	15	Nov 1
Chapter 48	10	Nov 22
Chapter 50	10	Nov 22
Chapter 45	10	Nov 29
Chapter 46	10	Dec 3

Bonus Points:

There will be several worksheets handed out in the course of the semester that will be worth bonus points. The amount of bonus points will vary and you must be present in class the day the worksheet is handed out in order to receive the bonus points. The bonus points will be added to the next exam grade.

In addition, you may also earn up to 10 bonus points for reading *The Immortal Life of Henrietta Lacks* by Rebecca Skloot. After reading the book, you must write a three page, 12 font, 1.5 spaced report with 2.5 pages dedicated to a detailed summary of the book and 0.5 pages dedicated to your thoughts and opinion of the book and the story. This report should be in your own writing style. Do not plagiarize (see rules regarding academic integrity above). I have several copies of the book that I can loan to you. Come to my office to sign one out. The report is due March 31st. No reports will be accepted after that deadline. No exceptions. The bonus points will added to your Exam 3 grade.

Grading Rubric

Final Grade

You may earn a total of 400 points for exams and 145 points for quizzes. Exams are worth 80% of your grade and quizzes are worth 20% of your grade.

Category Name	Percentage Earned	Weight of Category	Contribution
Exams	84%	x 0.8	0.672
Quizzes	86%	x 0.2	0.172

0.844 = 84%

Final Grade

Example grades:

Exam 1 83%

Exam 2 90%

Exam 3 78%

Exam 4 85%

Avg 84%

Quizzes 125 points out of 145 = 86%

89.45 - 100% is an A and corresponds to exception effort.

79.45 - 89.44 is a B and corresponds to above average effort.

69.45 - 79.44 is a C and corresponds to average effort.

59.45 - 69.44 is a D and corresponds to below average effort.

Anything below a 59.44% is a F, which corresponds to an inadequate amount of effort.

If you have less than three absences for the semester, then the grading rubric is as follows:

88.45 - 100% A

78.45 - 88.44% B

68.45 - 78.44% C

58.45 - 68.44% D

58.44 and below F

Any exam grade that you see posted on Moodle already includes any bonus points you may have earned.

Study Guide

I will not hand out a formal study guide. Use the following weekly class schedule as your guide to determine what material you must understand for each exam. If it is on the weekly class schedule, it is fair game for the exam.

In addition, you can use your Mastering Biology homework assignments to study. You are allowed to rework those assignments as many times as you would like without affecting your assignment grade.

Weekly Class Schedule

Aug 19	Concept 1.1 Themes of Life Concept 1.2 Evolution: The Core Theme
Aug 24/26	Concept 1.3 The Scientific Method Scientific Skills Exercise: Interpreting a Pair of Bar Graphs Concept 2.1 Matter and the Elements of Life Concept 2.2 Properties of Elements Scientific Skills Exercise: Calibrating a Standard Radioactive Isotope Decay Curve Concept 2.3 Chemical Bonds
Aug 31	Concept 3.1 Hydrogen Bonds & Water Concept 3.2 Water: The Solvent of Life & Hydrophilic/Hydrophobic substances Concept 3.3 pH and buffers
Sep 2	Concept 4.2 The Formation of Bonds with Carbon Concept 4.3 Functional Groups Concept 5.2 - 5.5 Macromolecules Scientific Skills Exercise: Analyzing Polypeptide Sequence Data
Sep 7	Labor Day
Sep 9/14	Concept 6.2 Comparison of Eukaryotic & Prokaryotic Cells Concept 6.3 & 6.4 The Nucleus, Ribosomes and the Endomembrane System Scientific Skills Exercise: Using a Scale Bar to Calculate Volume & Surface Area of a Cell
Sep 16	Exam I
Sep 21/23	Concept 7.1 Structure of the Plasma Membrane Concept 7.2 Selective Permeability Concept 7.3 - 7.5 Transport Concept 8.1 Energy & Thermodynamics Concept 8.3 ATP Concept 8.4 Enzymes Concept 6.5 Mitochondria & Chloroplasts
Sep 28/30	Concept 9.1 Redox Reactions & The Stages of Cellular Respiration Concept 9.2 - 9.4 Glycolysis, Intermediate Stage, Citric Acid Cycle & The Electron Transport Chain Concept 9.5 Fermentation

Weekly Class Schedule

Oct 5/7	Concept 10.1 Photosynthesis Concept 10.3 The Calvin Cycle Concept 10.4 Alternative Mechanisms of Carbon Fixation Concept 12.1 Cell division
Oct 12/14	Concept 12.2 The Cell Cycle & Mitosis Concept 12.3 Regulation of the Cell Cycle Concept 11.5 Apoptosis Concept 13.1 Sexual Reproduction Concept 13.2 - 13.4 Meiosis
Oct 19	Exam 2
Oct 21	Concept 16.1 DNA is the Genetic Material Concept 16.2 Replication Concept 16.3 Chromatin Packing in a Eukaryotic Chromosome
Oct 26/28	Concept 17.1 The Central Dogma of Molecular Biology Concept 17.2 Transcription Concept 17.4 Translation Scientific Skills Exercise: Interpreting a Sequence Logo Concept 17.5 Mutation
Nov 2/4	Concept 18.2 Regulation of Eukaryotic Gene Expression Concept 17.3 Alternative Splicing Concept 18.4 Differential Gene Expression Concept 18.5 Cancer Concept 19.1 Viruses Concept 19.2 Viral Replication Concept 19.3 Emerging Viruses & Prions
Nov 9	Exam 3
Nov 11	Concept 40.1 Mammalian Tissues Concept 40.2 Homeostasis Concept 48.1 Neuron Structure & Organization
Nov 16	Concept 48.2 Resting Membrane Potential Concept 48.3 Action Potentials & Graded Potentials Concept 48.4 Synapses & Neurotransmitters
Nov 18	Concept 50.1 Sensory Reception and Transduction Concept 50.5 Skeletal Muscle Contraction

Weekly Class Schedule

Nov 23	Concept 45.1 Hormones & Other Signaling Molecules Concept 11.1 - 11.4 The Three Stages of Cell Signaling Concept 45.2 The Hypothalamus & the Pituitary Gland
Nov 25/30	Concept 43.1 Innate Immunity Concept 43.2 - 43.3 Adaptive Immunity
Dec 2	Concept 46.1 Asexual and Sexual Reproduction Concept 46.2 Fertilization Concept 46.3 Reproductive Organs Concept 46.4 Reproductive Hormones Concept 46.5 Conception, Development and Birth
Dec 4	Exam 4
Dec 8	Final Exam 3:00 p.m. SHARP!

Office Hours:

I am available to answer questions during my office hours. This time is set aside specifically for student support and should be utilized.

Appointment Hours:

If you are having difficulty coordinating your schedule with my office hours, then a specific appointment can be made. An email is the best way to schedule an appointment.

Science Tutoring Center:

Science building room 207 is the home of the Science tutoring center. There is no specific A&P program, but there are graduate and undergraduate students who facilitate the center and may be of assistance if other avenues are exhausted.

Note: Segments of this syllabus have been adopted from the syllabi of other faculty and it is subject for revision upon the instructor's need.