Intro to Biology II (for Non-Science Majors)
BIOL 1409.048DC – Face to Face at Pittsburg High School
Course Syllabus: Spring 2026

"Northeast Texas Community College exists to provide personal, dynamic learning experiences empowering students to succeed."

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Remind App Info: text @advdualbio to 81010 to join
Quizlet Info: Mrs_Griffin_Bio

Office Hours:

Monday	Tuesday	Wednesday	Thursday	Friday	Weekends/Evenings
Before school: 7:30 am to 7:50 am After school: 3:35 pm to 4:15 pm					Email anytime between 7:00 am and 10:00 pm. These are the times that I can/will respond promptly.

The information contained within the syllabus is subject to change without notice.
Students are expected to be aware of any additional course policies presented by the instructor during the course.

Course Description: 4 credit hours. Lecture/Lab: Three hours of lecture and three hours of lab each week. This course will provide a survey of biological principles with an emphasis on humans, including evolution, ecology, plant and animal diversity, and physiology. Lab activities reinforce these topics.

Required Textbook: Essentials of Biology E-text with Connect Plus, Mader, 7th Edition, McGraw-Hill

Inclusive Access: We have negotiated with the Publisher to obtain a discounted price for your lecture course materials. Your ebook and Connect Access Code are included with your tuition and will be available through Blackboard on the first class day. The materials are required for your class and essential in your success. If you also determine that you would like a print copy of your text in addition to your exclusive access loose-leaf copies will be available in the College Store at a discounted price. You may opt out of purchasing materials from the College Store through the Census Date for the course. If you choose to opt out you will be responsible for purchasing your Connect Access Code from another website. You will receive a refund for the Exclusive Access if you opt out.

Student Learning Outcomes: Upon successful completion of this course, students will:

1. Apply scientific reasoning to investigate questions and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
2. Use critical thinking and scientific problem solving to make informed decisions in the laboratory.
3. Communicate effectively the results of scientific investigations.
4. Define modern evolutionary synthesis, natural selection, population genetics, micro and macroevolution, and speciation.
5. Describe phylogenetic relationships and classification schemes.
6. Identify the major phyla of life with an emphasis on plants and animals, including the basis for classification, structural and physiological adaptations, evolutionary history, and ecological significance.
7. Describe basic animal physiology and homeostasis as maintained by organ systems.
8. Compare different sexual and asexual life cycles noting their adaptive advantages.
9. Illustrate the relationship between major geologic change, extinctions, and evolutionary trends

Evaluation/Grading Policy:
Daily Assignments/Homework/Connect Assignments = 20%
Unit Exams = 40%
Laboratory Experiments/Activities = 20%
Final Exam = 20%

Instructional Materials: None.

Minimum Technology Requirements: Students will need a Chromebook or laptop with access to high speed daily internet in order to complete their assignments.

Required Computer Literacy Skills: Student must know how to access Blackboard and how to access and submit assignments in Blackboard. Students must also know how to join a Google Classroom, as well access assignments in Google Classroom via Google Forms, Docs, and Slides.

Course Structure and Overview: This course covers Chapters 1 through 16 in the textbook, Essentials of Biology. The following is a general time frame for each Unit. Also listed are the readings, assignments, labs, activities, quizzes, and exams that correlate with each unit.

Communications: Between the hours of 7:00 am and 10:00 pm is the only time that I can/will respond to you whether it is email, Remind message or phone call. Email or Remind message is the preferred method for contacting me. I will typically respond within the hour to your email/message.

Institutional/Course Policy: Students will be required to follow all rules and guidelines as listed in the Pittsburg High School Student Handbook and Code of Conduct.

Alternate Operations During Campus Closure and/or Alternate Course Delivery Requirements: In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Northeast Texas Community College to move to altered operations. During this time, Northeast Texas Community College may opt to continue delivery of instruction through methods that include, but are not limited to, online through the Blackboard Learning Management System, online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor NTCC's website (http://www.ntcc.edu/) for instructions about continuing courses remotely, Blackboard for each class for course-specific communication, and NTCC email for important general information.

Additionally, there may be instances where a course may not be able to be continued in the same delivery format as it originates (face-to-face, fully online, live remote, or hybrid). Should this be the case, every effort will be made to continue instruction in an alternative delivery format. Students will be informed of any changes of this nature through email messaging and/or the Blackboard course site.

Statement Regarding the Use of Artificial Intelligence (AI) Technology:
Absent a clear statement from a course instructor, use of or consultation with generative AI shall be treated analogously to assistance from another person (collusion). Generative AI is a subset of AI that utilizes machine learning models to create new, original content, such as images, text, or music, based on patterns and structures learned from existing data (Cornell, Center for Teaching Innovation). Unauthorized use of generative AI tools to complete an assignment or exam is not permitted. Students should acknowledge the use of generative AI and default to disclosing such assistance when in doubt. Individual course instructors may set their own policies regulating the use of generative AI tools in their courses, including allowing or disallowing some or all uses of such tools. Students who are unsure of policies regarding generative AI tools are encouraged to ask their instructors for clarification. (A**dapted from the Stanford University Office of Community Standards-- accessed August 31, 2023)**

NTCC Academic Honesty/Ethics Statement:
NTCC upholds the highest standards of academic integrity. The college expects all students to engage in their academic pursuits in an honest manner that is beyond reproach using their intellect and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. This course will follow the NTCC Academic Honesty and Academic Ethics policies stated in the Student Handbook. Refer to the student handbook for more information on these subjects.

ADA Statement:
It is the policy of NTCC to provide reasonable accommodations for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to request accommodations. An appointment can be made with the Academic Advisor/Coordinator of Special Populations located in Student Services and can be reached at 903-434-8264. For more information and to obtain a copy of the Request for Accommodations, please refer to the special populations page on the NTCC website.

FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT (FERPA):
The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children's educational records. These rights transfer to the student when he

or she attends a school beyond the high school level. Students to whom the rights have transferred are considered "eligible students." In essence, a parent has no legal right to obtain information concerning the child's college records without the written consent of the student. In compliance with FERPA, information classified as "directory information" may be released to the general public without the written consent of the student unless the student makes a request in writing. Directory information is defined as: the student's name, permanent address and/or local address, telephone listing, dates of attendance, most recent previous education institution attended, other information including major, field of study, degrees, awards received, and participation in officially recognized activities/sports.

Teaching Strategies

In addition to laboratory experiments and/or activities, class time will be divided between lectures/discussions, hands-on activities/simulations and student/group presentations. The following is a breakdown of the various types of strategies that will be utilized in this year's AP Biology class.

- **Lecture/Class Discussions**
  - Students will be given reading assignments ahead of time. Students are expected to read and study the topics before coming to class. This way students will be able to participate during class discussions if they are familiar with the information. Pop quizzes will be given to make sure that students are staying on topic and on track with the current material being covered in class.
- **Lecture Notes**
  - Students will be given lecture notes or an outline of the material that is covered during the lecture. Since students will not being writing down everything, these notes or outlines will allow us to move quickly through the lecture.
- **Unit Tests**
  - A typical Unit Test will consist of a variety of question types (multiple choice, short answer, matching, completion, free response, essay).
    - Each Unit Test will have some questions modeled after ACT/SAT questions.
- **Quizzes**
  - A quiz may be given at any point while covering material for a Unit.
    - Some quizzes will be announced while others will be "pop" quizzes based on reading assignments.
- **Laboratory and Laboratory Reports**
  - Students will be engaged in laboratory investigations for at least 25% of instructional time. These laboratory investigations will be student-directed.
    - Models, teacher-made labs, paper manipulatives and computer/internet simulations will supplement these laboratory investigations.
  - For some labs, students must complete a pre-lab assignment, which usually means they will complete pre-lab questions, research and/or review the lab handout.
  - Post-lab activities could include one or more of the following:
    - a formal lab report (which would include a title, an abstract, an introduction, a purpose, a hypothesis, procedures used, data and results, analysis of these data/results, conclusion that includes explaining any limitations and or recommendations of the lab completed).
    - informal lab reports (these would require only a title, an introduction, procedures, data, conclusion and answering any follow-up or analysis questions that are on the lab handout)
    - oral presentation of results (with or without the use of charts, graphs, or other visual means)
    - a lab practical or lab exam (either of these could be used to test students on their laboratory skills or their understanding of a lab completed in class)

    *With the various post-lab activities, students will be able to review and reflect on their writing, their science practice skills, and the overall quality of their work.

Lectures and Discussions: This course covers Chapters 16 through 32 in the textbook, Essentials of Biology. The following is a general time frame for each Unit. Also listed are the readings, assignments, labs, activities, quizzes, and exams that correlate with each unit.

Spring 2026 Units of Study/Instruction - Tentative Course Timeline: *(*note* instructor reserves the right to make adjustments to this timeline at any point in the term):*

- **Unit 1: Classification/Taxonomy of Living Organisms (Jan 9 – Jan 20)**
    - Topics for Notes and Lecture
        - Speciation and Macroevolution
            - Evolution of Populations
            - Hardy-Weinberg Principle and Equation
            - Genetic Drift
            - Types of Selection
            - Speciation
        - History of Life on Earth
            - How Conditions of the Early Earth Made Life Possibly
            - Fossil Record and Dating
            - Key Events in Life's History
            - Plate Tectonics and Continental Drift
            - Extinction and Mass Extinctions
            - Adaptive Radiations
        - Phylogeny and Tree of Life
            - Phylogeny and Systematics
            - Binomial Classification and Hierarchical Classification
            - Phylogenetic Trees
        - Tree of Life
            - The Three Domains
            - Kingdom of Life and How Organisms are Classified
    - Readings
        - Chapter 16: Evolution on a Large Scale
        - Organic Compound Synthesis on the Primitive Earth Article from *Science*
    - Assignments and Homework
        - Article Review over Organic Compound Synthesis on the Primitive Earth Article
        - Unit 1 Questions (which includes: History of Life Questions, Reviewing Plate Tectonics, Continental Drift & Extinction Questions, Phylogeny, Cladistics and Systematics Practice, and Kingdoms of Life Questions)
    - Activities and Labs
        - Prezygotic Barrier Card Sort
        - Geologic Time Scale Activity
        - Identifying Organisms Using Dichotomous Keys
        - Constructing a Phylogenic Tree Activity
    - Quizzes and Tests
        - Unit 1 Prefix/Suffix Quiz
        - Summative Test over Speciation, Macroevolution, History of Life, Phylogeny & Tree of Life, and Kingdoms of Life

- **Unit 2: Viruses, Prokaryotes, Protists and Fungi (Jan 21 – Feb 9)**
    - Topics for Notes and Lecture
        - Prokaryotes
            - Introduction to Prokaryotes
            - Structural and Functional Adaptations Contribute to Prokaryotic Success
            - Reproduction and Adaptations of Prokaryotes Make them Highly Successful
            - Rapid Reproduction, Mutations & Genetic Recombinations Promote Genetic Diversity in Prokaryotes
            - Bacterial Nutrition

        - Environmental and Medical Importance of Bacteria
        - Archaea
    - Viruses
        - Structure of a Virus
        - Viral Replication
        - Bacteriophages
        - Plant and Animal Viruses
        - Retroviruses
        - Emerging Viruses
        - Viroids and Prions
    - Protists
        - Structural and Function Diversity
        - Endosymbiosis in Eukaryotic Evolution
        - Five Supergroups of Protists
    - Fungi
        - General Biology of Fungus
        - Fungal Diversity
        - Ecological Benefits of Fungi
        - Fungi as Disease-Causing Organisms
        - Practical Uses of Fungi
- Readings
    - Chapter 17: The Microorganisms: Viruses, Bacteria and Protists
    - Chapter 18: The Plants and Fungi - only Section 3: The Fungi
    - The Ultimate Social Network Article from *Scientific American*
- Assignments/Homework
    - Prokaryote Questions
    - The Ultimate Social Network Article Questions
    - Bacterial Transformation Pre-Lab
    - Unit 2 Questions (which includes: Prokaryote Questions, Virus Questions, Protist Questions & Fungi Questions)
    - Exploring Protists Worksheet
    - Outbreak Movie Questions
- Activities and Labs
    - Bacterial Shape Identification Lab
    - Bacterial Transformation Lab
    - Virus Snowflake Models Lab Activity
    - Pond Water Protist Lab
    - Identifying Fungus Lab
    - View the movie Outbreak
- Quizzes and Tests
    - Unit 2 Prefix/Suffix Quiz
    - Summative Test over Prokaryotes, Viruses, Protists and Fungi

- **Unit 3: Plant Structures, Functions and Diversity (Feb 3 – Feb 11)**
    - Topics for Notes and Lecture
        - Evolutionary Process in Plant Diversity
            - Four Distinctive Traits with Land Plants
            - Adaptations Enabling to Move to Land
            - Diversification of Land Plants
        - Alternation of Generations
        - Plant Structure and Function
            - Plant Cells and Tissues

            - Plant Organs
            - Organization of Leaves, Stems and Roots
            - Plant Nutrition
        - Plant Responses and Hormones
            - Plant Hormones
            - Plant Tropisms
    - Readings
        - Chapter 18: The Plants and Fungi
            - Section 1: Overview of Plants and Section 2: Diversity of Plants
        - Chapter 20: Plant Growth and Anatomy
        - Chapter 21: Plant Responses and Reproduction
    - Assignments and Homework
        - Unit 3 Questions (which includes: Plant Diversity Questions and Plant Structure and Function Questions)
    - Activities and Labs
        - Virtual Collection of Plant Samples
        - Viewing Plant Microanatomy
        - Viewing External Structures of Plants
        - Plant Responses Card Sort
    - Quizzes and Tests
        - Unit 3 Prefix/Suffix Quiz
        - Summative Test over Plant Structures, Function and Diversity

- **Unit 4: Animal Diversity and Major Phyla of Life (Feb 12 to Feb 24)**
    - Topics for Notes and Lecture
        - Ancestry of Animals/Evolutionary Tree of Animals
        - Evolutionary Trends
        - Major Phyla of Life
            - Sponges and Cnidarians
            - The Lophotrochozoans: Flatworms, Molluscs and Annelids
            - Roundworms
            - Arthropods
            - Echinoderms and Chordates
                - Invertebrate Chordates
                - Vertebrate Chordates
                    - Fishes
                    - Amphibians
                    - Reptiles
                    - Birds
                    - Mammals
    - Readings
        - Chapter 19: The Animals
    - Assignments and Homework
        - Unit 4 Questions (which includes: Animal Diversity and Evolutionary Trends Questions, Sponges and Cnidarians Questions, Lophotrochozoans Questions, Echinoderms, Invertebrate Chordates and Fishes Questions, The Ecdysozoans Questions, and Mammals Questions)
    - Activities and Labs
        - Reviewing Symmetry Exercise
        - Evolutionary Trends of the Animal Kingdom Lab Activity
        - Lophotrochozoans Lab Activity
        - Ecdysozoans Lab Activity
        - Phylum Echinodermata Lab Activity

        - Phylum Porifera & Phylum Cnidaria Lab Activity
        - Evolutionary Trends of the Animal Kingdom Lab Activity
    - Quizzes and Tests
        - Unit 4 Prefix/Suffix Quiz
        - Summative Test over Animal Diversity and Major Phyla of Life

- **Unit 5: Animal Structures & Functions: Overview of Physiology, The Transport Systems and The Maintenance Systems (Feb 25 – March 6)**
    - Topics for Notes and Lecture
        - Overview of Physiology
            - Levels of Biological Organization
            - Four Tissue Types
            - Organs and Organ Systems
            - Homeostasis
            - Types of Feedback
        - The Transport Systems
            - Open and Closed Circulatory Systems
            - Transport in Humans
            - The Human Heart
            - The Cardiac Cycle/Understanding the Electrical System of the Heart
            - Electrocardiogram
            - Blood
            - The Lymphatic System
        - The Maintenance Systems
            - The Respiratory System
                - Steps in Respiration
                - Human Respiratory Tract
                - Upper and Lower Respiratory Tracts
                - Respiration in Other Animals
                - Breathing
            - Urinary System
                - Human Kidneys
                - Nephrons
                - Urine Formation
                - Problems with Kidney Function
    - Readings
        - Chapter 22: Organization of the Animal Body and Homeostasis
        - Chapter 23: The Transport Systems
        - Chapter 24: The Maintenance Systems
    - Assignments and Homework
        - Unit 5 Questions (which includes: Homeostasis and Types of Feedback Questions, The Transport Systems Questions, and The Maintenance Systems Questions)
    - Activities and Labs
        - Type of Feedback Card Sort
        - Types of Tissues Lab Activity
        - Introduction to Circulatory Systems Lab
        - Circulatory System Lab Activity
        - Measuring Pulse Rate Lab
        - Heart Anatomy Labeling
        - Urinalysis Lab
    - Quizzes and Tests

        - Unit 5 Prefix/Suffix Quiz
        - Summative Test over Overview of Physiology and The Transport Systems

- **Unit 6: Animal Structures & Functions: Digestion & Nutrition, and Defensive Systems (March 9 – March 27)**
    - Topics for Notes and Lecture
        - Digestion
            - The Digestive Tract
            - Accessory Organs
        - Nutrition
            - Introduction to Nutrients
            - Classes of Nutrients
            - Understanding Nutrition Guidelines
        - Defensive Systems
            - Lymphatic Organs
            - Cells of the Immune System
            - Nonspecific Defenses and Innate Immunity
            - Specific Defense and Adaptive Immunity
    - Readings
        - Chapter 25: Digestion and Human Nutrition
        - Chapter 26: Defenses Against Disease
    - Assignments and Homework
        - Unit 6 Questions (which includes: Digestive System Questions, Nutrition Questions, and Defensive System Questions)
    - Activities and Labs
        - Digestive Enzymes Lab
        - Measuring Lung Capacity Lab
        - Urinalysis Lab
        - Illustrating Adaptive Immunity Activity
    - Quizzes and Tests
        - Unit 6 Prefix/Suffix Quiz
        - Summative Test over Digestion, Nutrition, and Defensive Systems

- **Unit 7: Animal Structures & Functions: Control Systems, Sensory Input, Motor Output and Reproduction (March 31 – April 10)**
    - Topics for Notes and Lecture
        - Control Systems
            - Nervous System
                - Neurons
                - The Nerve Impulse
                - The Central Nervous System
                - The Brain
                - The Limbic System
                - The Peripheral Nervous System
            - Endocrine System
                - Major Organs and Glands
        - Sensory Input
            - Sense Organs
        - Motor Output
            - Functions of Muscles and Bones
            - Types of Skeletons

                - The Human Skeleton
                - Structure of a Bone
                - Skeletal Muscle Structure and Physiology
                - Skeletal Muscle Contraction
                - Joint Classification
            - Reproduction
                - Asexual and Sexual Reproduction
                - Reproduction on Land vs. Water
                - Human Reproduction
                - Embryonic Development
                - Stages of Birth
    - Readings
        - Chapter 27: The Control Systems
        - Chapter 28: Sensory Input and Motor Output
        - Chapter 29: Reproduction, Development and Aging
    - Assignments and Homework
        - Unit 7 Questions (which includes: Control Systems Questions, Reviewing Cranial and Spinal Nerves Questions, The Senses Questions, and Reviewing the Male and Female Reproductive Systems Questions)
        - Phineas Gage Article Questions
    - Activities and Labs
        - Neuron Diagram Labeling
        - Phineas Gage Article
        - Brain Lobe Lab Activities
        - Colorblindness Test Simulation
        - Taste and Smell Relationship Activity
        - Blind Spot Lab
        - Classifying Movement Activity
        - Viewing Bones Activity
        - Muscle Fatigue Lab
        - Fetal Pig Dissection
    - Quizzes and Tests
        - Unit 7 Prefix/Suffix Quiz
        - Summative Test over Control Systems, Sensory Input, Motor Output and Reproduction

- **Unit 8: Ecology/Interactions in the Environment (April 13 – April 27)**
    - Topics for Notes and Lecture
        - Ecology
            - Levels of Biological Organization
            - The Human Population
        - Populations
            - The Human Population
            - Characteristics of Populations
        - Ecology of Communities
            - Species Composition and Richness
            - Ecological Succession
            - Interactions in Communities
        - Ecology of Ecosystems
            - Energy Flow
            - Chemical Cycling
            - Ecology of Major Ecosystems
        - Human Impact on the Biosphere

        - Conservation Biology
        - Biodiversity
        - Resources and Environmental Impact
    - Readings
        - Chapter 30: Ecology and Populations
        - Chapter 31: Communities and Ecosystems
        - Chapter 32: Human Impact on the Biosphere
    - Assignments and Homework
        - Unit 8 Questions (which includes: Ecology and Populations Questions, and Communities and Ecosystems Questions)
    - Activities and Labs
        - Succession Simulation Activity
        - Predator and Prey Simulation
        - Build a Food Web Activity
        - Detrimental Impact on the Environment Caused by Man or Nature Research Project
        - Biome Project
    - Quizzes and Tests
        - Unit 8 Prefix/Suffix Quiz
        - Summative Test over Ecology/Interactions in the Environment
- **Semester Exam/Final Comprehensive Exam will be scheduled during NTCC Finals Week (May 5- May 14)**
    - The remaining class time will be utilized by students to complete their Final Draft of their Research Project and Review for the Semester/Final Exam.

Research Project Requirement

- Students enrolled in Mrs. Griffin's BIOL 1409 will complete a research assignment.
    - This project will be a typed submission via Turnitin. (Turnitin is a program that will check for plagiarism.)
- Spring 2026 Research Project Requirements:
    - You will select a topic related to the material covered this semester.
    - You will be required select at least one peer-reviewed article related to your topic in which you can cite information relating to your topic.
        - Your Research Project will include a title page, followed by pages in which you will describe the significant background literature relative to your article, the purpose of your article, the methods used in any experiments stated in your article, the major discoveries of the article, the significance of the work to the field of biology (if any), and include your opinion of the work accomplished in the article and its level of interested to you.
            - You will probably need to read through some of the background articles and/or cited articles that are mentioned in the journal article you are reviewing.
                - You must cite these articles in your review as well.
    - This Article Review/Research Project will need to be typed in 12-point font, double spaced and have one-inch margins.
        - Citations will be made using APA Format.
            - You need to have a minimum of 4 citations, including the citation of the journal article you are reviewing.
    - This Article Review/Research Project should be no less than 5 pages and no more than 10 pages, not including your title page.
        - You can add any necessary figures, charts, pictures and/or tables to the back of Article Review.
            - These figures, charts, pictures and/or tables will not count toward the total page limit.
    - Although, the final draft of your article review is not due until May 7th, there will be due dates for specific steps of your Article Review due throughout the Spring Semester.
        - **Title & Citation** of the article you are going to review - **Due on February 6, 2026**
        - **Outline** of your Article Review – **Due March 12, 2026**
        - **Introduction paragraph**(s) of your Article Review – **Due April 1, 2026**
        - **Rough Draft** of your Article Review – **Due April 24, 2026**
        - **Final Draft** of your Article Review – **Due May 1, 2026**