BIOS 1010 General Biology

Michael Zarate
CENTRAL COMMUNITY COLLEGE

COURSE INFORMATION

This course covers fundamental processes of cells and organisms, cell structure, genetics, evolution, classification, diversity, and interaction of organisms at the molecular, cellular, organismic, ecosystems, and biosphere level. It is designed as both a course for non-majors and as a foundation course for those planning additional work in biology. Includes lab.
Contact Hours: Class- 45 Practical Lab- 30 Clinical- 0 Internship- 0

Homework Expectations:
For each hour of classroom time, typically you can expect two hours of homework per week.

Credits: 4
Total Hours: 75

CLASS INFORMATION

Term: Fall Year: 2021 Start Date: 8/11/2021 End Date: 5/13/2022

INSTRUCTOR

Michael Zarate
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TEXTBOOKS

Textbook information may be found in **WebCentral** through My Services, Services for Students, Academic Planning, Student Planning, Go to Plan & Schedule, Timeline tab or use this quick link:

Student Planning Timeline Tab > Sign In, if applicable > Navigate to Term > Click on Course Name > Scroll to the bottom of the **Section Details** popup window > Click the link to **Bookstore Information**

GRADING INFORMATION

98-100 A+
90-97 A
87-89 B+
80-86 B
77-79 C+
70-76 C
67-69 D+
60-66 D
≤59 F

Semester Grades= 45% Total grade
Tests 55%
Laboratory 35%
LearnSmart/Articles 10%

Mid-term/Final= 10% Total grade

Late work within 24 hours will receive 50%. After that it will be worth a maximum of 40%.

COURSE COMPETENCIES

1. Demonstrate a working knowledge of plant and animal cell structure and function. (NTI-S3)

   Criteria
   Performance will meet expectations when the student:
   · understands the terms used in cataloging.
   · examines the Internet cataloging resources and describes their usefulness in cataloging.

   Learning Objectives
   · Identify protein and lipid features of the cell membrane
   · Describe principles of active and passive transport
   · Identifies basic aspects of cell structure and function
   · Identifies features of eukaryotic cells
   · Identifies features of the nucleus, cytomembrane system
   · Identifies features of specialized plant organelles, cell walls, central vacuole, and cell junction
   · Describes principles of active transport

2. Demonstrate a working knowledge of prokaryotic structure and function. (NTI-S3)

   Criteria
   Performance will meet expectations when the student:
   · by successfully passing a test

   Learning Objectives
   · Identifies characteristics of bacteria
   · Identifies characteristics of bacterial growth and reproduction
   · Identifies types of bacteria
   · Identifies types of viruses
   · Identifies characteristics of viruses

3. Explain the chemical basis of life including atomic and molecular structure and bonding. (NTI-S4)

   Criteria
   Your performance will be successful when:
   · by successfully passing a test

Learning Objectives

· Identify the structure of atoms

· Identify the nature of chemical bonds

· Identify the properties of pH, acids, bases, salts, and buffers

· Identify properties of organic compounds

· Identify some carbohydrates and their properties

· Identify some lipids and their properties

· Identify some proteins and their properties

· Identify some nucleotides

4. Explain the overview of metabolic pathways, molecular basis of genetic material and protein synthesis. (NTI-S4)

Criteria

Your performance will be successful when:

· by successfully passing a test

Learning Objectives

· Identifies general features of energy

· Identifies some major energy related molecules in cells

· Identifies some features of major energy related molecules in cells

· Identifies features of photosynthesis

· Describes processes of acquiring energy from fats and lipids

· Identifies features of glycolysis, Kreb's cycle and electron transport phosphorylation

· Compares aerobic and anaerobic pathways

5. Describe the genetic principles of Mendelian Inheritance. (NTI-S5)

Criteria

Your performance will be successful when:

· by successfully passing a test

Learning Objectives

· Identifies Mendelian principles and theories of segregation and independent assortment

· Identifies examples and inheritance of nonMendelian inheritance

· Describes features of chromosomes and chromosomal inheritance

6. Describe the principles of meiosis and mitosis (NTI-S5)

Criteria

Your performance will be successful when:

· by successfully passing a test

Learning Objectives

· Lists stages and features of mitosis

· Lists stages and features of meiosis

· Lists stages and features of gamete formation

· Identifies types of cell division

7. Explain the molecular basis of genetic material and protein synthesis

Criteria

Your performance will be successful when:

· by successfully passing a test

Learning Objectives

· Identifies some nucleotides

· Describes the molecular level of chromosome replication

· Describes mutation at the molecular level

8. Describe the principles of chromosome structure and mutagenesis. (NTI-S5)

Criteria

Your performance will be successful when:

· by successfully passing a test

Learning Objectives

· Describes features of chromosomes and chromosomal inheritance ·

Describes changes in chromosomal number and structure and their effects

9. Describe the characteristics of the five kingdom classification system

Criteria

Your performance will be successful when:

· by successfully passing a test

Learning Objectives

· Identifies animal-like protistans

· Identifies plant-like protistans and algae

· Identifies general characteristics of fungi

· Identifies types of fungi

· Identifies types of nonvascular plants

· Identifies types of vascular plants

· Identifies general animal characteristics

· Identifies types of invertebrate animals

· Identifies types of vertebrate animals

· Identifies features of prokaryotic cells

10. Describe the theories of evolution and the evidence supporting these theories. (NTI-S7)

Criteria

Your performance will be successful when:

· by successfully passing a test

Learning Objectives

· Identifies the principles of genetic drift

· Identifies the principles of macro- and microevolution

· Identifies evidence from biogeography, morphology, patterns of development, comparative biochemistry, and molecular genetics

· Identifies principles of speciation
· Identifies contributions of Darwin, Wallace, Malthus, and Lamarck
· Demonstrates the principles of Hardy Weinburg Principle

11. Describe the characteristics common to living things and the differences among organism groups. (NTI-S2)

Criteria
Your performance will be successful when:
· by successfully passing a test

Learning Objectives
· Identifies morphological differences and similarity between and within groups of organisms
· Identifies nucleic acid and protein similarity and differences between and within groups of organisms

12. Explain the interactions and adaptations of plants and animals within their respective ecosystems. (NTI-S6)

Criteria
Your performance will be successful when:
· by successfully passing a test

Learning Objectives
· Identifies the characteristics of populations, communities, and ecosystems
· Describes characteristics of population growth
· Identifies factors that shape communities
· Identifies types of community interactions
· Identifies patterns of biodiversity
· Identifies structures of ecosystems
· Identifies energy flow through ecosystems
· Identifies various biogeochemical cycles
· Identifies impact change in ecosystems

13. Explain the interactions and adaptations of plants and animals within the biosphere

Criteria
Your performance will be successful when:
· by successfully passing a test

Learning Objectives
· Describe the various physical factors that effect the ecological systems
· Explain the distribution of the ecosystems

14. Demonstrate and explain scientific theories and methodologies. (NTI-S1)

Criteria
Your performance will be successful when:
· by successfully passing a test

Learning Objectives
· Demonstrate the methodologies of the scientific method
· Evaluate experimental data from a scientific experiment

CCC-AMERICANS WITH DISABILITIES ACT

If you have a disability or want to know if you qualify for accommodations as defined by the Americans with Disabilities Act, you are invited to contact the campus Director of Disability Support Services. You are not required to disclose or reveal information about your disability to anyone at any time, however, in order to receive accommodations in college, you must make those needs known and request services from the Disability Support Services office on one of the three CCC campuses. Inquiries concerning the application of the laws and regulations cited above may be directed to the Human Resources Office, Central Community College, P.O. Box 4903, Grand Island, NE 68802-4903; (308) 398-7325, or to the Director, Office of Civil Rights, U.S. Department of Education, Washington, DC 20201.

CCC-ARCHIVING OF STUDENT WORK

To protect the original work of students from plagiarism and to uphold the high academic standards and integrity of CCC, any written assignment in this course may be submitted to an internet based plagiarism detection service such as Turnitin.com by the student or the instructor. All submitted written assignments will be archived and may be referenced for the purpose of detecting plagiarism.

CCC-ATTENDANCE--ONLINE, FACE-TO-FACE, HYBRID

Central Community College faculty record attendance in courses- including online courses. Class attendance and participation contribute significantly to student academic success. Commonly, students who attend class get more out of their college investment through increased learning, stronger relationships with instructors and classmates, earning higher grades, achieving increased passing rates in courses, which leads to completion of academic, and ultimately, career goals. Attendance in an online course may include timely participation in discussions, submitting assignments, activities, projects, etc. (i.e. completing assignments by their deadline). Students should regularly participate in weekly course activities as led by your instructor to ensure meeting attendance requirements. Failure to consistently attend class(es) - even online class(es) - may jeopardize your financial aid.

CCC-COURSE MEETING TIME AND LOCATION

Course meeting time and location may be found in **WebCentral** through My Services, Services for Students, Academic Planning, Student Planning, Go to Plan & Schedule, Timeline tab or use this quick link:

Student Planning Timeline Tab > Sign In, if applicable > Navigate to Term > Click on Course Name

CCC-EQUAL OPPORTUNITY/AFFIRMATIVE ACTION

Central Community College does not discriminate on the basis of race, religion, national origin, gender, age, disability, marital status, or military veteran status as is defined by law in employment, admission, scholarship and financial aid programs or operation of its educational programs and activities as prescribed by Titles VI and VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Executive Order 11246 as amended, sections 503 and 504 of the Rehabilitation Act of 1973, the Vietnam Era Veteran's Readjustment Assistance Act of 1974, the Age Discrimination Acts of 1974 and 1975, and other federal and state laws and regulations.

Central Community College offers career and technical education programs for all students regardless of race, color, national origin, age, religion, marital status, including those with limited English proficiency, sex or disability.

For a complete list of programs, go to www.cccneb.edu/programs. Educational programs are offered at but not limited to the following locations: Columbus Campus, Grand Island Campus, Hastings Campus, Holdrege Center, Kearney Center, Lexington Center and Ord Learning Center.

CCC-EXPECTATIONS FOR ACADEMIC INTEGRITY

Central Community College believes successful students are independent critical thinkers who possess the work ethic and skills necessary to make a positive difference in their professions and communities. In order to maximize student and community success, CCC is devoted to maintaining an honest academic environment and upholding integrity as a core value. All individuals across all course modalities are expected to practice academic integrity, which encompasses
the fundamental values of honesty, trust, respect, fairness, and responsibility. In the case of alleged violations of academic integrity, Central Community College strives for fair resolution.

Instances of Academic Dishonesty:
Behaviors that violate the fundamental values of academic integrity at Central Community College may include but are not limited to the following:

· Plagiarism - direct copying or paraphrasing without citation someone else's work (i.e. writing, images, video or audio)

· Cheating - engaging in any behavior intended to achieve an unfair advantage for self or another in any academic exercise (i.e. unauthorized collaboration or unauthorized use of resources or data in a study)

· Fabricating Information - inventing or falsifying information (i.e. making up resources and/or citations, falsifying academic records)

· Facilitating Academic Dishonesty - soliciting, furnishing, or offering to furnish unauthorized exams, quizzes, or academic materials; participating in academic sabotage

Read the Expectations for Academic Integrity in its entirety.

CCC-GENERAL INFORMATION

All college policies and procedures identified in the student handbook will be adhered to for the course. College policies and procedures include, but are not limited to, conditions for dropping or withdrawing from a class, student academic honesty, etc. A copy of the student handbook is available upon request from the Student Services office on each campus or you may utilize this link to the Student Handbook.

CCC-TECHNOLOGY USAGE GUIDELINES

In order to support the activities for this course, Central Community College provides access to computers for students. The College established Technology Use Policy and Procedure documentation. This document can be found on the College web site. You may click this link to download a PDF document outlining the College's Technology Use Guidelines.

CCC-TITLE IX POLICY

Members of the Central Community College community, guests and visitors have the right to be free from all forms of gender and sex-based discrimination, examples of which can include acts of sexual violence, sexual harassment, domestic violence, dating violence, and stalking.

All members of the campus community are expected to conduct themselves in a manner that does not infringe upon the rights of others. Any member of the community, guest or visitor who believes that the policy on Equal Opportunity, Harassment and Nondiscrimination has been violated should contact the Title IX/Equity/AA Coordinator, Dr. Christopher Waddle, 308-398-7325 or TitleIXCoordinator@cccneb.edu. Students should understand that in cases of gender and sex based discrimination, no College employee, including members of the faculty, can guarantee confidentiality. For more information about CCC's policy please reference CCC's Title IX Handbook. For counseling services which may remain confidential, CCC has contracted with the Family Resource Center for counseling services for CCC students at no cost. To schedule an appointment call 1- 888-381-7487, www.family resources.net.

Pregnancy Rights and Responsibilities

Title IX makes it illegal to discriminate on the basis of pregnancy and related conditions. All pregnancy concerns and pregnancy related absences are coordinated by the Disability Services office. You may not anticipate any academic needs associated with your pregnancy, however, your needs may change as your pregnancy progresses. Disclosure of your condition early in the pregnancy will help in making the planning process more proactive. To disclose your pregnancy to ensure proper accommodations and support, please contact the Disability Services Director on your campus. For additional information related to pregnancy rights and responsibilities, please visit https://www.cccneb.edu/pregnantandparenting or contact you campus Disability Services Office or CCC's Title IX Coordinator at titleixcoordinator@cccneb.edu

COVID-19 REQUIREMENTS AND EXPECTATIONS

Students diagnosed with COVID-19 are expected to confidentially report this information to any Associate Dean of Student Success or by calling our Grand Island Office at 308-398-7426. Further, Central Community College instructors will support flexible attendance for students exhibiting symptoms or illness.

Specific instructional programs may require industry-specific personal protective equipment (PPE) that must be maintained.

Central Community College reserves the right to require face coverings and to change mode of delivery, instructor, or class schedule due to pandemic response at the college, at a location, or in the community.