Moberly Area Community College
Common Syllabus

BIO150 General Zoology

Instructor: 
Office number: 
Office hours: 
Contact information: 
Classroom number: 
Class days and time: 

Catalog Description: BIO150 Zoology (4-2-5) This course involves a comparative study of animal life and the anatomical adaptations that enable animals to inhabit nearly all ecological niches. Extensive lab work and some field trips are required. (FA, SP)

Prerequisite/Co-requisite: None

Text(s): The text is an ebook included with the class. There is no print option available in the MACC bookstore.
Title: Zoology
Edition: 11th Edition
Author: Miller
Publisher: McGraw Hill

Other Required Materials: Per instructor’s policy

Purpose of Course: Zoology will lead to discuss the diversity of both invertebrate and vertebrate animal life and the fascinating adaptations that enable animals to inhabit nearly all conceivable ecological niches

Course Objectives: Upon successful completion of this course, students will:
* Become familiar with fundamental properties of life, theories of evolution and heredity.
* Learn that the cells are the basic units of life, which contribute to form tissue, organs, and organ systems.
* Recognize taxonomic characters, theories of taxonomy and major divisions of life.
* Identify the various animal groups, position relative to the animal kingdom and their biological contribution.
* Learn morphology and anatomy of some invertebrates and vertebrates by using microscopic and dissection techniques.
Course Content:
Instructional Methods:
Lecture, Discussion and Hands on Lab Experiments.

Out of Class Activities: Field trips to local area, animal facilities.

Assessment of Student Learning: Per instructor’s policy

Grading Scale:
A – 90-100%
B – 80-89%
C – 70-79%
D – 60-69%
F – 0-59%

Expected Study Time Commitments: Students should expect to spend approximately 2 to 4 hours per week studying, reading, and working on assignments for each registered credit hour. For example, 6 to 12 study hours per week may be expected for a 3 credit hour class.

Description of Major Assignments(s)/Projects(s):
Zoology Lab Experiments:
1. Study the usage and parts of Compound Microscope and visualize some permanent slides.
2. Prepare the "Wet Mounts" of cells and to stain various parts of cells and to find the differences between the cells.
3. Test the "Organic and Inorganic Food" in the lab.
4. Study the "effect of Enzymes" in the lab.
5. Study various "Types of Tissues" found in animals. Use microscope and draw the diagrams.
6. Study "Diffusion Physiology" in animals and how the materials permeate through bilipid cell membrane.
7. Study the complete morphology and physiology of lower animals; including Protozoans such as Amoeba, Euglena, Paramecium and other Algae found in pond water. Some parasitic Protozoans will be shown under the microscope.
8. Study the general characteristics of Phylum Cnidaria & Platyhelminthes and complete morphology and anatomy of Hydra and Planaria.
9. Study the general characteristic of Phylum Annelida and complete morphology and anatomy of Earthworm (Lumbricus terrestris)
10. Study the general characteristics of Phylum Arthropoda and the complete morphology and anatomy of Grasshopper (Romalea)
11. Study the general characteristics of Jawless fish and complete morphology and anatomy of Dogfish Shark (Squalus acanthias)
12. Study the general characteristics of bony fish and complete study of Perch (Perca flavescens)

13. Study the general characteristics of phylum Amphibia and external and internal morphology of Frog (Rana pipiens)

14. Study the general characteristic of Phylum Mammalia, Chordata and complete morphology and anatomy of cat (Vertebrata)

Schedule of Student Assignment and Activities:

Unit #1

1. HISTORY OF BIOLOGICAL SCIENCES: General properties of living system scientific method, variety of habitats, nutrition performed by animals, overview of major animal phyla and how have the animals evolved. Chapter 1

2. MOLECULAR BIOLOGY: The Chemical Basis of Life, inorganic chemistry water, acid base, salts, ammonia, organic chemistry, lipids, carbohydrates, nucleic acid, protein, etc. Chapter 2

3. METABOLISM AND PHYSIOLOGY OF ANIMAL CELLS & BODY FUNCTIONS: organization of the body, metabolism, energy, laws of thermodynamics, enzymes, activation, endothermic and exothermic reactions. Chapter 5

(TEST #1 Lecture and a Lab test.)

Unit #2

1. CELLS: Unit of life, structure and functions of all the parts found in pro-karyotic and eu-karyotic animal cells, mitosis and meiosis. Chapter 3

2. ARCHITECTURAL PATTERN OF AN ANIMAL TISSUE TYPES (HISTOLOGY): Four types of tissue, their location and specific functions will be discussed. Study of heirarchial organization of animal complexity. Chapter 9 & 10

3. CELL MEMBRANE TRANSPORT: Membrane structure, how various molecules including water diffuses through a cell membrane, diffusion theories - osmosis, facilitated diffusion, active transport mechanism, endocytosis and exocytosis. Chapter 3

(TEST #2 Lecture and Lab test or an assignment on Animal Cytology, Histology, and a spotting test in the lab.)

Unit #3

1. TAXONOMY: System of Classification of organisms, artificial & natural taxonomy, history, rules of nomenclature, discriminating characteristics of animals, animal body plans, symmetry, metamorism (segmentation), cephalization and polarity, internal body cavities, cell numbers, appendages, skeletal system, and sexual characteristics. Chapter 10

2. PROTOZOANS: Phylum Sacro-mastigophora will include the study of mastigophora and sarcodina Representative animals’ amoeba, paramecium, parastic mastigophorans, ciliophora and sporozoa etc. Chapter 11
3. PHYLUM CNIDARIA: General characteristics of the phylum Cnidaria, representative animals Hydra, Obelia colony, Portuguese man-of-war, Jellyfish, Sea anemones. Chapter 13

4. PLATYHELMINTHES: General characteristics of flat worms. Ex. Planaria, Parasitic tape worm Taenia solium Chapter 14

(TEST #3 Lecture and a Lab test.)

Unit # 4

1. PHYLUM ANNELIDA: General characteristics and a complete study of the Earthworm, Lumbricus terrestris. Know something about Nereis virens, and Leeches. Chapter 17

2. PHYLUM ARTHROPODA: General characteristic and complete study of a Grasshopper (Romalea). Study various categories of Arthropods, insects, aquatic Mandibulates, terrestrial Mandibulata. Study variety of mouth parts and locomotory patterns. Chapter 18, 19, & 20

3. PHYLUM CHORDATA: Study of jawless fish, cartilagenous dogfish shark, bony fish yellow perch, Amphibian, with a complete study of frog, advantages of double life, invasion of the land.

4. PHYLUM MAMMALIA: Study of various mammalian systems in the body, representative Animal "CAT" or "RAT"

(FINAL EXAM: May be, usual Lecture and Lab test or a comprehensive project to find evolutionary changes in the morphology and anatomy of animals to successfully invade the land within their kingdom.)

Statement to Connect course with General Education Outcomes: In compliance with MACC’s General Education Outcomes, the student who successfully completes this course will be able to:

- **Higher Order Thinking**: Students will demonstrate the ability to distinguish among opinions, facts, and inferences; to identify underlying or implicit assumptions; to make informed judgments; to solve problems by applying evaluative standards; and to reflect upon and refine those problem-solving skills. This outcome involves creative thinking, critical thinking, and quantitative literacy.

- **Communication**: Students will demonstrate the ability to communicate effectively through oral, written, or digital channels using the English language or quantitative or other symbolic systems. Students should be able to write and speak with thoughtfulness, clarity, coherence, and persuasiveness; read and listen critically; and select channels appropriate to the audience and message.

- **Managing Information**: Students will demonstrate the ability to discern when there is a need for information; and to identify, locate, evaluate, and effectively and responsibly use and share that information for the problem at hand.
• **Valuing:** Students will demonstrate the ability to understand the moral and ethical values of a diverse society; and to appreciate the values of diversity, equity, and sustainability.

**College / Instructor Policies:**

**Academic Dishonesty:** MACC board policy is as follows: “Academic dishonesty by students damages institutional credibility and unfairly jeopardizes honest students; therefore, it will not be tolerated in any form.” Forms of academic dishonesty include but are not limited to the following: violations of copyright law, plagiarism, fabrication, cheating, collusion, and other academic misconduct. Incidents of dishonesty regarding assignments, examinations, classroom/laboratory activities, and/or the submission of misleading or false information to the College will be treated seriously. The procedure for handling academic dishonesty is outlined in the Student Handbook (*Policy Handbook, M.010*). In cases of alleged academic dishonesty, the burden of proof is on the student, not on the instructor.

**Attendance Policy:** Students are expected to attend all class sessions for which they are enrolled. The College reserves the right to drop or withdraw students from courses due to lack of attendance.

Students need to be aware that dropping/being dropped from a course and their last date of attendance in the course may impact their financial aid.

MACC faculty are required to track attendance and report lack of attendance. An instructor must complete the appropriate steps to drop a student within one week following the student’s violation of the attendance policy. Additionally, a student’s attendance rate will be calculated based upon the first day the academic session begins (not the student’s date of enrollment in the course). If a student does not attend a course as defined below, the student will be dropped as “Never Attended.”

**Term Length Drop Calculations**

16-week: Any student who misses two (2) consecutive weeks of class will be dropped from the course by the instructor unless acceptable justification is provided by the student and the student still has the opportunity to be successful in the course.

8-week: Any student who misses one (1) consecutive week of class will be dropped from the course by the instructor unless acceptable justification is provided by the student and the student still has the opportunity to be successful in the course.
4-week: Any student who misses two (2) consecutive days of class will be dropped from the course by the instructor unless acceptable justification is provided by the student and the student still has the opportunity to be successful in the course.

Intersession: Any student who misses one (1) day of class will be dropped from the course by the instructor unless acceptable justification is provided by the student and the student still has the opportunity to be successful in the course.

Acceptable justification may include, but is not limited to, family emergencies, illness or injury, college-approved co-curricular and extra-curricular activities, and religious holidays.

**Definition of Course Attendance**

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<tr>
<th>In Seat Course</th>
<th>Physically attending scheduled, face-to-face, class meetings</th>
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<tr>
<td>Virtual Course</td>
<td>Being present, via appropriate platform, for scheduled class meetings/activities</td>
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| Hybrid Course  | Physically attending scheduled, face-to-face, class meetings and active participation in the online portion of the course which may include any or all of the following:  
  • Completion of quizzes or exams during class meetings and online  
  • Submission of assignments during class meetings and online  
  • Participation in discussions during class meetings and online |
| Online Course  | Active participation in an online course includes the following:  
  • Completion of quizzes or exams  
  • Submission of assignments  
  • Participation in threaded discussions |

Simply logging into the Learning Management System (Canvas) and/or accessing the course and course related material does not constitute active participation for the online component of hybrid courses or for online courses. *(Policy Handbook, I.090 & M.095)*

**Tardiness:** Per instructor’s policy

**Make-up and late work:** Per instructor’s policy

**Extra-credit work:** Per instructor’s policy
Student Email: MACC Mail is the official student email system at MACC. Official college communication is sent via this email system. Students are responsible for checking their MACC Mail account regularly. Students may also receive notifications and reminders from MACC through the online learning platform. However, students should remain aware that the online learning platform messaging system and MACC Mail (student email) system are two separate systems.

ADA Statement: Students who have disabilities that qualify under the Americans with Disabilities Act may register for assistance through the Office of Access and ADA Services. Students are invited to contact the Access Office to confidentially discuss disability information, academic accommodations, appropriate documentation and procedures. For more information, please call either the Moberly office at (660) 263-4100 x 11240 or the Columbia office at (573) 234-1067 x 12120, or visit our web page at http://www.macc.edu/index.php/services/access-office.

Title IX Statement: MACC maintains a strict policy prohibiting sexual misconduct in any form, including sexual harassment, sexual discrimination, and sexual violence. All MACC employees, including faculty members, are considered mandated reporters of sexual misconduct and as such are expected to contact the Title IX Coordinator when they become aware, in conversation or in writing, of an incident of sexual misconduct. For more information on this policy or to learn about support resources, please see http://www.macc.edu/sexual-misconduct-policy (links to an external site) or contact Ms. Cheryl Lybarger, MACC’s Title IX Coordinator, at 660-263-4110, ext. 11369 or CherylLybarger@macc.edu.