Mayville State University

BIOL 359 - Evolution

Fall 2024
3 CR

Course and Instructor Information

Instructor Name: Dr. Joseph Mehus

Contact Information: SB 134, joseph.mehus@mayvillestate.edu, 701.788.4802

Hours of Availability: 9am-10am MWF

Instruction Mode: Online-asynchronous

Time Zone: All times indicated throughout this syllabus reflect Central Time (CT).

Meeting Times and/or Location: Online

Zoom Link: No zoom link needed for this course

Course Materials and Technologies

Required

Evolution. 4th Edition. Futuyma. Computer that meets university technology requirements. Calculator. Printer.

Course Description

Three hours lecture per week. This course will provide students with a comprehensive analysis of evolution and evolutionary biology. Topics covered throughout this semester include the history of evolutionary theory, evidence of evolution, genetic evolution, natural selection, sexual selection, species and speciation and possibly evolutionary issues in modern society.

Pre-/Co-requisites: No Pre-/Co-requisites are required. BIOL 151/L or equivalent. Recommended: BIOL 315/L

Course Objectives

Through numerous instructional strategies and learning experiences, the following outcomes are expected to be met by the learner (as aligned to Composite Science Education Program Approval Standards through North Dakota's Education Standards and Practices Board):

Understand how the forms, functions, and life histories of organisms have evolved.
Learner will be able to define heritability and relationships between phenotypic and genotypic terms
Learner will be able to discus the interrelationships between molecular biology, developmental biology, and evolutionary theory
Learner will be able to discuss and analyze pre- and post-Darwin contributions to evolutionary ideas

Learner will be able to explain and solve Mendelian contributions within evolution
Learner will be able to recognize and explain the difference between micro and macroevolution
Learner will be able to apply and solve Hardy-Weinberg equilibrium
Learner will be able to discuss using the appropriate vernacular the terms genetic drift, species, and speciation
Learner will have a basic understanding of cladistics, taxonomy, and be able to explain evolutionary trees

Standards Alignment (Composite Science Education Program Approval Standards-ND ESPB):

- 13047.1 Composite Science Major/General Science The composite/general science program requires that environmental science be incorporated within other courses or as a separate course. The composite/general science program requires:1. Coursework in biology, chemistry, physics, and earth science, including: a. Minimum of twenty four semester hours in one area, b. Minimum of twelve semester hours in two other areas, c. Minimum of four semester hours in the fourth area, d. Courses must be from those that the institution allows toward graduation in the science major. 2. Study of mathematics through the pre-calculus level (college algebra and above) and statistics.

Course Expectations

Instructor/Student Communication

Students are accountable for all academic communications sent to their Mayville State University email address. Email is the primary and preferred method of contact. My email address is provided at the top of the syllabus. I check my email regularly during the work week and will likely respond in 24-48 hours. Email is not checked after work hours or on weekends, so please plan accordingly and do not think I am ignoring you. Emailing the day something is due and expecting immediate feedback is likely not in the best interest of the student.

If you choose to call my office, please leave a detailed message including which class, which item in the content area, and student name. I will respond via email as it is the preferred method of contact, and we also have a paper trail of our conversation. Phone messages are not checked after work hours or during the weekend.

Assignments and Assessments

Vocabulary: For every chapter, students will be provided a vocabulary activity. Students can use their book to complete these assignments. This may take multiple forms such as matching or fill in the blank or others. These will be administered via Blackboard and grading may be automatic or require instructor grading. These are required activities. These need to be completed by the due dates. No late work is accepted. Vocabulary activities will not be reopened if missed.

Chapter Activities: For every chapter, students will have one or two activities associated with content from the chapter. Activities are required assignments that are in place to help students retain and absorb content. Each student is to complete their own activities by themselves, no group/partner work is accepted unless specifically discussed by the instructor. Each activity will vary in terms of what needs to be completed. For activities, students may use their book (or when addressed) online resources. Student should strive to complete all these activities before the due dates. After due dates,

activities will not be available for points. No late work is accepted. Activities will not be reopened if missed.

Quizzes: Each quiz will be posted in chapter folders in Blackboard. Each quiz is worth 5 points. You may use your books to complete each quiz. Any quiz not completed by the due date will result in a score of zero. Quizzes will not be reopened if missed.

Exams: Exam due dates for online students will be in the syllabus. On campus students can expect notification of exams 3-5 days in advance. If you are not in attendance when an exam is scheduled it is the student's responsibility (not the instructor) to get that information from a student in attendance. Exams for on campus students will be on paper. Online students will be required to print exams, and record their completion of the exam. This is not negotiable, plan ahead to print and complete the exam by the due date. Online students will take clear photographs of their completed, hand written exams and upload them into the appropriate dropboxes. No outside resources (textbook, notes, online sources) can be used to complete the exam. Students are allowed to use a calculator during exams. Only the student's knowledge can be used to complete the exams. Exams can only be reopened if student emails the instructor BEFORE the due date (not the day of) AND includes documentation of a university excused absence. Do not email if you do not have documentation. The final exam is comprehensive. All exams are worth 100 points.

Evaluation and Grading

Grading Policies

Students can expect grades of completed activities within 2 weeks, unless there are multiple written responses or students provide presentations.

Attendance/Participation Policies

Evolution is core to understanding biology. Because of this, students are graded on performance on activities and participation points or attendance points are NOT awarded. Students are expected to attend all lectures and/or watch all lectures provided online.

Grading Scale

The grading scale for this course is a standard 90, 80, 70, 60 scale. Those above 90% will earn a grade of A, 80-89% will earn a grade of B, and so forth. The instructor will round up at the 0.5% point at the end of the semester for the final grade.

Breakdown of Grades

Exams (5)	500 Points
Vocabulary	185 Points
Activities/Assignments	200 Points
Quizzes (14)	140 Points

Total Points	1025 Points

Enrollment Verification

On-Campus Course Statement

The U.S. Department of Education requires instructors to conduct an activity which will validate student enrollment in this course. Class attendance will be used to verify enrollment in on-campus courses. If you do not attend, your enrollment in this course will be at risk.

Online Course Statement

The U.S. Department of Education requires instructors of online courses to provide an activity which will validate student enrollment in this course. The only way to verify that a student has been in this course is if he, she, or they perform an action in the LMS, such as completing an assignment or taking a quiz. Logging into the LMS is **NOT** considered active course participation. Please complete the designated enrollment verification activity by the date indicated. If it is not complete your enrollment in this course will be at risk.

Proctor Notification

This course will use an asynchronous proctoring solution called YuJa or equivalent in Blackboard.

Important Student Information

In the Announcements section of the Blackboard Institution Page, you can view and download the Important Student Information document for the current academic year. It includes information about:

- ✓ Land Acknowledgement Statement
- ✓ Academic Grievance Concerns and Instructor English Proficiency
- ✓ NetTutor - Online Tutoring Program
- ✓ Starfish - Student Success System
- ✓ Students with Documented Disabilities
- ✓ Student Learning Outcomes / Essential Learning Outcomes
- ✓ Academic Honesty
- ✓ Emergency Notification
- ✓ Continuity of Academic Instruction for a Pandemic or Emergency
- ✓ Family Educational Rights and Privacy Act of 1974 (FERPA)
- ✓ Diversity Statement (Title IX)

Course Timeline/Schedule

This schedule is tentative and may be changed by the instructor at any time during the course. All due dates end at 5pm CST on the dates listed below. Enrollment verifications must be completed before any coursework folders will open. Online students are allowed to work ahead of deadlines. Once work for a chapter is completed, the next section will open. If something does not open, please let the instructor know immediately.

Topic	**Due Date**	**Required Item Checklist**
Enrollment Verification	**9/3/24**	**Enrollment Verifications**
Evolutionary Biology	9/9/24	○ Review ○ Quiz ○ Activity
The Tree of Life	9/16/24	○ Review ○ Quiz ○ Activity
Natural Selection and Adaptation	9/23/24	○ Review ○ Quiz ○ Activity
Mutation and Variance	9/30/24	○ Review ○ Quiz ○ Activity
The Genetical Theory of Natural Selection	10/7/24	○ Review ○ Quiz ○ Activity
Exam 1	10/9/24	○ Exam
Phenotypic Evolution	10/14/24	○ Review ○ Quiz

		○ Activity
Genetic Drift: Evolution at Random	10/21/24	○ Review ○ Quiz ○ Activity
Evolution in Space	10/28/24	○ Review ○ Quiz ○ Activity
Exam 2	10/30/24	○ Exam
Species and Speciation	11/4/24	○ Review ○ Quiz ○ Activity
All about Sex	11/11/24	○ Review ○ Quiz ○ Activity
How to be Fit	11/18/24	○ Review ○ Quiz ○ Activity
Cooperation and Conflict	11/25/24	○ Review ○ Quiz ○ Activity
Exam 3	11/26/24	○ Exam
Interactions Among Species	12/2/24	○ Review ○ Quiz ○ Activity
The Evolution of Genes and Genomes	12/9/24	○ Review ○ Quiz ○ Activity
Exam 4	12/11/24	○ Exam

Final Exam (Exam 5)	12/16/24	○ Exam