Mayville State University

BIOL 150 – General Biology I

Dr. Joseph Mehus

Fall, 2021

3 Semester Hours

Contact Information:

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Hours of Availability:

Available via email; arranged Skype for Business meetings as requested

Instruction Mode:

Online asynchronous

Time Zone:

All times listed in this course/syllabus/course content is in Central Standard Time (CST)

Course Description

Identified principles typically associated with biology with emphasis on processes, including cell structures/functions, cell chemistry, cellular respiration, photosynthesis, homeostasis, genetics, and protein synthesis. Included in the course will be the major philosophies and history of science, as well as the interrelationships among the sciences. This offering, whether online or on campus, will cover all topics required to be considered a full, program accepted course for Mayville State University. Non-degree seeking students will need to check with their primary or potential institutions to determine if it will be accepted. The determination is up to each of those independent institutions.

Pre-/Co-requisites:

Recommended BIOL 150L - General Biology Lab

Purpose of the Course

The purpose of this general biology course is to provide students with breadth and depth in their ways and means of understanding organic structures, the processes that regulate life functions, interactions between living/non-living factors on biological processes, and how species have changed over time. We will also explore the scientific method of inquiry and expand your knowledge of living organisms and their requirements to sustain life.

Course Objectives

Through numerous instructional strategies and learning experiences, the following outcomes are expected to be met by the learner after completing this course:

- The learner will be able to describe the biological structure and function of the cell and the molecules that make it up.
- The learner will be able to illustrate and elaborate on the flow of energy in living systems.
- The learner will be able to describe the processes and importance of cell division and meiosis.
- The learner will be able to distinguish between the two processes of mitosis and meiosis.
- The student will be able to discuss the general history/foundational work/forefathers of biology.
- The learner will be able to convey their knowledge of the scientific method.
- The learner will be able to identify the link between DNA, RNA, and protein and describe the processes of transcription and translation.

Program Student Learning Outcomes (SLOs) Addressed in This Course (required)

The Academic Program Student Learning Outcomes document can be found in your course shell. It contains all learning outcomes pertaining to Essential Studies courses and all majors and minors. The document has an index, so you can quickly find the degree you are pursuing.

As part of Mayville State's effort to demonstrate continuous improvement in achieving student learning outcomes, this course:

☒ introduces SLO # 1 ☐ reinforces SLO # ☐ masters SLO # For Major / Minor: Biology	☒ introduces SLO #2 ☐ reinforces SLO # ☐ masters SLO # For Major / Minor: Biology	☒ introduces SLO # 3 ☐ reinforces SLO # ☐ masters SLO # For Major / Minor: Biology	☒ introduces SLO # 4 ☐ reinforces SLO # ☐ masters SLO # For Major / Minor: Biology

Students will be asked to produce a Yuja student video describing a current topic of discussion in biology that allows them to express and work through ethical dilemmas, social and/or cultural issues that may potentially impact local, regional, or national economies. The assessment activity will encompass the SLO's associated with the current biology program curriculum map. This topic will vary each semester at the discretion of the instructor. This video will be between 5-7 minutes and express their viewpoints on topics that are supported by current biology research.

As part of Mayville State's effort to demonstrate continuous improvement in achieving Essential Studies Learning Outcomes, this course will assess

ELO # ☐1 ☐2 ☒3 ☐4

as part of the Essential Studies and Capstone Courses. As part of Mayville State University's Essential Studies curriculum, this course seeks to prepare students for twenty-first century challenges by gaining: 1) Knowledge of human cultures; 2) Intellectual and practical skills; 3) Personal and social responsibility; 4) Integrative and applied learning. Students will be asked to produce a Yuja student video describing a current controversial topic in biology that allows them to express and work through ethical dilemmas. This topic will vary each semester at the discretion of the instructor. This video will be between 5-7 minutes and express their viewpoints on topics that are supported by current biology research. Purely opinion responses, while potentially impactful, will earn points unless supported by current research in the biological field.

Course Improvements Based on Most Recent Assessment Findings

This course will be assessed in the future (based on the 2019-2025 assessment curriculum map) and the findings will be reported in this syllabus.

Required Materials

Raven Biology (11th ed. or newer)

Computer that meets the university technology requirements

MS Office

Fully functional Webcam that also records audio

Technology MUST be able to run the Yuja program successfully for watching and making videos

24/7 high speed internet access

*** There are many editions to this textbook. If you choose to use one that is older or newer, rest assured, the content is the same in the different versions. While the content is the same, you may see a difference in chapter/page numbers. It is up to the student to look at the content provided and determine which chapter in your book it corresponds too during this course.

Instructional Strategies

Video Lectures and Outlines

Video lectures and/or outlines will be posted in Blackboard/Yuja. Outlines for each chapter will be provided in Blackboard. Outlines should be put into your own words. Copy and paste from the internet/directly from the textbook/or from another student is plagiarism. You need to read about these topics(textbook), watch the lecture videos, and form explanations in your own way of speaking to truly understand the concepts. Once the due date for the outlines has passed, no submissions will be accepted for credit. Each completed outline is worth 5 points. Course content will open as students complete their work or as deadlines pass. If you desire to work ahead in the course this is acceptable and is encouraged as to prevent missing deadlines. If you complete a section and new content does not open for you, please let me know and I will give you early access.

Quizzes

Quizzes will be given for each chapter in Blackboard. These quizzes will contain 10 questions from the chapter and/or lecture video for the chapter. After the due date for the quiz no submissions will be accepted for credit. Quizzes will each be worth 10 points.

Activities

Activities will vary in content delivery method, the primary one being student flow charts that help organize one or more topics found within a chapter. These activities help promote a deeper thinking level on the content topic and help students organize their thoughts. The activities cannot cover every topic in the chapter, so it is important that students read and take notes on the chapter contents to help in other areas.

Exams

There will be a total of 5 exams for the course. There will be 4 unit exams and 1 cumulative final exam during the semester. To respect universal design in educational efforts, exams will not be timed. Because of the length and depth of these exams, they will be open book and no proctor will be needed. You will be expected to complete these exams individually and if it is discovered that students have provided information to one another, posted the questions (or any course content) online, or in some other manner of distributing content (social media, text/cell phone) a zero will immediately be given for the exam. A Yuja recording for exams is required; books and notes, and course materials (not internet searches/information) are acceptable. Academic honesty is crucial for learning. No exam submissions will be accepted after the due date. Each exam is worth 100 points.

Animations and Video Clips

Postings of a variety of animations and video clips may be provided for different content areas. These are for your viewing pleasure and may help you in fully achieving the topic-specific learning outcomes.

Learning Experiences

- Read all chapters before attempting assignments/quizzes
- Watch video/animations provided by instructor
- Items that earn points (quizzes/outlines/exams/etc.) will be given via the detailed schedule at the end of this syllabus. All submissions will require the use of Microsoft office (which is available for free for all MSU students) and students may convert submissions to PDF form. Apple programs are not supported in the LMS (Blackboard), for instance, Pages.

Instructional Technologies Utilized in this Course

- Blackboard Ally
- Blackboard Learn
- Skype for Business
- Microsoft Office (Word, Powerpoint) and the ability to convert these to PDFs
- Yuja
- YouTube
- Various videos/animations provided by publisher

Expectations/Protocols

As a student of BIOL 150, I expect that you:

- Fully review/read the course syllabus and go to it if you have questions before asking the instructor;
- Fully complete the assignments/quizzes/outlines for each chapter…this includes reading the chapters and watching video postings, watching lecture videos, and completing exams all by the due dates.
- Check your university email as well as check for announcements within the course shell every single day.

As the instructor of BIOL 150, you should expect of me that I:

- Clearly provide you a syllabus and course schedule that displays the deadlines for each section of content
- Create an online classroom environment that supports your understanding of content;
- Fairly grade assignments and exams

Instructor/Student Communication

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 within 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 (number at the top of this document) please leave a detailed message including which class, which item in the content area, and student name, and 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 during the evenings nor on weekends.

Students are REQUIRED to use their Mayville State University email address for correspondence. If you email from an outside network email address, faculty are not responsible for missed messages as they may be filtered out of the inbox. As an instructor I will only email you from my MSU email address or from other university platforms (ConnectND or Blackboard). You need to check your MSU email account daily as well as check announcements in the course daily as that is our main method of communication.

Method of Evaluation/Grading

Your grade will be TENTATIVELY determined on total points earned out of the total points possible in the course.

- 5 points/outline + 10 points for quiz + 10 points for activity (for each chapter).
    - 14 Chapters = 350 points
- 20 points special activity (dependent upon current topic)
- 5 exams = 500 points
- ***Special activity will be determined at the start of the course and students will be given the entirety of the semester to complete their video project. The due date for this project will be the day BEFORE the final exam is due. This will allow time for students to correctly find/analyze scientific published journal articles in the area of interest. This will also allow students to learn content specific to the course and apply it directly to the topic. A rubric will be provided to guide students to a successful completion of this project.

Course grades will be calculated out of total course points.

You will earn a letter grade based on your total points earned out of the possible total points (percentage). Total point percentages will be carried out to the tenths place value and rounded to the nearest whole number for the final grade (≥0.5 is rounded up). Your percentage will determine your final grade.

90-100% = A

80-89% = B

70-79% = C

60-69% = D

0-59% = F

Enrollment Verification

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 or she takes an action in the LMS (Blackboard), such as completing an assignment or a taking a quiz. Logging into Blackboard is **NOT** considered attendance. The enrollment verification for this course is the syllabus quiz that you MUST earn 100% to open the first of the course content. If it is not completed your enrollment in this course will be at risk and you may be removed from the course.

Proctor Notification

There is no proctor needed for this course.

Late Arrivals

Students who enroll after the first date of enrollment and whom miss assignments understand that these are ultimately "missed points" and that those missed points could negatively impact their grade. By continuing in the course, this is understood and accepted by the late enrolling student.

Important Student Information

Navigate to Blackboard > MaSU tab > Student Resources tab to find a document entitled, "Important Student Information," which includes information about:

- ✓ Academic Grievance Concerns and Instructor English Proficiency
- ✓ Starfish - Student Success System
- ✓ Students with Documented Disabilities
- ✓ Academic Honesty
- ✓ Emergency Notification
- ✓ Continuity of Academic Instruction for a Pandemic or Emergency
- ✓ Family Educational Rights and Privacy Act of 1974 (FERPA)
- ✓ Diversity Statement

Course Timeline/Schedule

PRINT THIS COURSE SCHEDULE. The course will follow this outline. Times for drop boxes to close for outlines and assignments is 5:00pm(CST) on the dates listed below. Late work is not accepted. Do not email late work to the instructor and ask for special exceptions. Student can work ahead by completing work early, which is encouraged to eliminate the possibility of late work. It is best practice to complete works one day early to eliminate "emergency situations." New items will open upon completion of previous work before due dates. If something does not open early, please contact the instructor via email to resolve the issue. Exams need to be completed before 5pm (CST) on the dates listed below. Late exams will not be allowed. Exceptions are ONLY granted if the student sends a request (INCLUDING documentation in the original request) for a university excused absence prior to not completing an outline/quiz/activity/exam. Being too busy, moving, traveling, or picking up a shift at work is not a university excused absence.

Topic	**Due Date**	**Assignment Checklist**
Getting to know the system	**8/31/21**	**Enrollment Verifications**

The Science of Biology	9/6/21	○ Outline ○ Quiz ○ Activity
The Nature of Molecules/Property of Water	9/13/21	○ Outline ○ Quiz ○ Activity
The Chemical Building Blocks of Life	9/20/21	○ Outline ○ Quiz ○ Activity
Cell Structure	9/27/21	○ Outline ○ Quiz ○ Activity
Membranes	10/4/21	○ Outline ○ Quiz ○ Activity
Exam 1	10/4/21	○ Exam
Energy and Metabolism	10/11/21	○ Outline ○ Quiz ○ Activity
How Cells Harvest Energy	10/18/21	○ Outline ○ Quiz ○ Activity
Photosynthesis	10/25/21	○ Outline ○ Quiz ○ Activity
Exam 2	10/25/21	○ Exam
How Cells Divide	11/1/21	○ Outline ○ Quiz ○ Activity

Sexual Reproduction & Meiosis	11/8/21	○ Outline ○ Quiz ○ Activity
Patterns of Inheritance	11/15/21	○ Outline ○ Quiz ○ Activity
Chromosomes, Mapping, and Meiosis	11/22/21	○ Outline ○ Quiz ○ Activity
Exam 3	11/22/21	○ Exam
DNA: The Genetic Material	11/29/21	○ Outline ○ Quiz ○ Activity
Genes and How They Work	12/6/21	○ Outline ○ Quiz ○ Activity
Exam 4	12/6/21	○ Exam
Final Exam (Exam 5)	12/13/21	○ Exam

Teacher Education Program

The following InTASC Principles are reflected in the readings and activities related to this course:

2. The teacher uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards. BIOL 150 Online Course Syllabus

3. The teacher works with others to create environments that support individual and collaborative learning, and that encourage positive social interaction, active engagement in learning, and self-motivation.

4. The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and creates learning experiences that make the discipline accessible and meaningful for learners to assure mastery of the content.

5. The teacher understands how to connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues.

8. The teacher understands and uses a variety of instructional strategies to encourage learners to develop deep understanding of content areas and their connections, and to build skills to apply knowledge in meaningful ways.