

Course Syllabus: Seminar in Biology

College of Science and Mathematics

BIOL 4001 Section 201 | Monday 1:00 – 1:50 pm | Bolin 209

Spring 2023

Contact Information

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Office hours: MT 8:00 – 10:00am; W 11:00am – 1:00pm

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Course Description

This is the capstone course for biology majors. The purpose of this seminar class is to: 1. Provide students with an opportunity to express themselves orally by preparing and presenting a seminar presentation such as would be expected at professional meetings and conventions. Seminar should help the student prepare to communicate with an audience of peers both formally and informally. 2. Provide a forum for discussion and evaluation of peer-reviewed research journal publications on current topics. 3. Examine basic concepts and current topics in biology. 4. Assess competency of biology graduating seniors in the use of microscopes. 5. Assess ability of biology graduating seniors to generate, understand, and correctly interpret data that are presented in tabular and graphical formats. 6. Assess ability of biology graduating seniors to critically and effectively read and evaluate professional literature. 7. Take the comprehensive Major Field Test in Biology.

Textbook & Instructional Materials

The recommended lecture texts are listed below. However, there are many other similar books and online resources available to help you with both the reading of scientific literature and presenting and writing about it. You should consult at least some of these sources.

1. Writing Papers in the Biological Sciences, 3rd ed. by Victoria E. McMillan, 2001. ISBN 0-312-25857-7.
2. Reading Primary Literature: A Practical Guide to Evaluating Research Articles in Biology by Christopher M. Gillen, 2007. ISBN 0-8053-4599-X.

Grading

Table 1: Points for calculation of oral presentation portion of the overall grade for Seminar.

Assignments	Points
Oral presentation	150
Attendance and peer evaluations	30
Reprint distribution	20
Total points	200

Table 2: Percentage for each component of the overall course grade.

Course components	Percentage
Oral presentation (including attendance and reprints)	60
Microscope proficiency exam	10
Graphs/Tables proficiency exam	10
Written exercise on reading and evaluating literature	10
Major Field Test in Biology	10
Total overall course grade	100

Table 3: Total percentage for final grade.

Grade	Percentage
A	90 to 100
B	80 to 89
C	70 to 79
D	60 to 69
F	Less than 60

Graded Components of Course (Exams, Exercises, Activities)

Students enrolled in seminar will be expected to do the following tasks:

1. **Take two proficiency exams:** these will be given during scheduled class time
 - a. **Tables & Graphs:** One exam evaluates your ability to generate, understand, and correctly interpret data that are presented in tabular and graphical formats.
 - b. **Microscope Proficiency:** The second exam evaluates your competency and use of microscopes.
2. **Choose and analyze a peer-reviewed primary journal article published within the last TWO years involving research on some aspect of biology (topic: viruses);** you will present the paper and provide a written analysis of it.
3. **Take the Major Field Test in Biology:** We will have a single Saturday morning meeting on **March 4 at 9:00 A.M.** in which each student will take the comprehensive Major Field Test (MFT) in Biology. This separate date/time is necessary due to the length of this standardized exam being 2 hours. **YOUR ATTENDANCE ON THIS DATE TO TAKE THE EXAM IS MANDATORY!** Your performance on the MFT exam will count 10% of your grade for seminar. Your grade will be based on a 180 point scale. This is taken from the fact that your total test score from the ETS Major Field Test will range anywhere from 120-200. Take pride in yourself and take it seriously! Prepare for it thoroughly and try to do your best on it.

Presentation Instructions:

1. Choose a paper and get the article **approved** by the instructor for use in your presentation and write-up. **You MUST chose a paper on the topic of VIRUSES.** You may use a paper that talks directly about the virus and its parts or what the virus does inside a cell. You may NOT do papers on immunology, epidemiology, or other peripheral topics. This must be a PRIMARY paper.

2. After approval of your article/topic, decide on an **appropriate title for your seminar presentation and prepare flyers** to be posted in the halls of Bolin Science Hall to announce your presentation.
 - a. Your flyer must be pre-approved by the instructor prior to when it is due.
 - b. Five copies of your instructor-approved flyer should be submitted to your instructor **ONE WEEK BEFORE** your presentation. Presentation title should **not be** exactly the same as the article used as basis for your presentation.
3. **Provide a reprint of the journal article to everyone in seminar ONE WEEK IN ADVANCE** of your presentation day. Each student should then read the presenter's article prior to the actual presentation and come with questions about the article or topic to ask the presenter during the question and discussion period after the presentation has been made. By reading the paper beforehand, each member of the audience should be able to come up with at least one question.
4. Present a **15-minute presentation on the article** and topic it concerns using PowerPoint or other appropriate presentation format. The presentation should address the following items (Some possible questions to consider are also listed below each):
 - a. Background on the topic of the research article.
 - i. Why is it important?
 - ii. Any prior or related work reported on the topic?
 - b. Hypothesis/Problem addressed in the research article.
 - i. Why was the research performed in the first place?
 - ii. What was trying to be answered?
 - c. Methods and Procedures used.
 - i. How was the research carried out and conducted?
 - ii. Are sample size and/or statistical testing important to the research?
 - iii. NOTE: you MUST look up what you don't know!!
 - d. Results.
 - i. Was the hypothesis/problem studied and answered?
 - ii. Were there any unexpected results/problems?
 - iii. NOTE: generally each method/procedure has a result, so it is often helpful to parallel these in the talk (pair results to their methods).
 - e. Conclusions.
 - i. Were appropriate conclusions drawn?
 - ii. How do the conclusions drawn fit into results of similar studies?
 - f. Critique of the work.
 - i. Were methods appropriate for the study?
 - ii. Was interpretation of any of the data incorrect?
 - iii. Is there anything you suggest have been done differently?
 - iv. What other work would you suggest be done?
5. After you complete your presentation, you will be expected to **answer questions** concerning your topic from those in attendance.
6. Your presentation should be one that YOU have prepared specifically for this class and should not be one that was used in any of your previous classes. In other words, you **may NOT recycle any presentation** presented before by you OR anyone else! Be forewarned, if it has been determined that you have recycled a presentation for seminar or that you have committed academic dishonesty, this will be grounds for an automatic "F" to be assigned as your grade for the course.
7. Student presentations will be scheduled during the first week of classes. We will have either one or two presentations per class meeting (depending on number of students enrolled) with the first

presentation being given starting in the seventh week of classes. Once your date is set, you will not be allowed to move it.

8. My advice is to start working on your presentations right away in case you have any problems arise with getting your presentation together (i.e. computer problems, interlibrary loan orders, etc.). **DON'T PROCRASTINATE!!**
 - a. You should be able to find all of the resources you will need from libraries and the Internet. Be warned, you may have to get the library to order a specific article for you through Interlibrary Loan since many of the biological journals may not be held in our library or we may not have full text access to online versions. Therefore, once again, **DO NOT PROCRASTINATE** in locating the journal research article that you are going to use for seminar!!!
 - b. Many of the journals dealing with biology may be available online without requiring a subscription. You may be able to find sites on the Internet with images that you might want to use in your presentation, if appropriate. To find sources on the Internet, just use several of the different search engines (e.g. Google Scholar or PubMed) and search for key words dealing with your topic. You should get numerous sources returned to you. Many sites may also contain links to other areas concerning the biological subject of your interest. Getting on the Internet and searching for information pertaining to your biological subject of interest is part of your job for seminar. Being able to successfully search and retrieve information from the Internet on any subject is a very important skill to possess. You should be familiar with all the “ins and outs” of searching the Internet and following links for a particular subject.
9. When you have your presentation completed, always make sure that you have given it a “trial run” with the computer/projection set-up in our classroom where you will be giving your actual presentation. You should practice the delivery of your presentation many times over to ensure that you have it “fine-tuned” for the time you present it to the class. **You are NOT allowed to simply pile text onto your slides and read to the class.** You are giving a presentation, not showing you can read. **NOR** are you allowed to read from paper or cards or anything else—you are doing a **PRESENTATION**.
10. Presentations will be graded according to the point distribution in Table 1 under Grading. Your presentation accounts for the major portion of your final grade and MY assessment counts the most. Your friends may grade you easy, but I will not. Anyone who simply reads text will receive a failing grade.

Written Assessment Instructions

1. You will be required to complete a written exercise that will assess your ability to critically and effectively read and evaluate the professional literature (see separate handout concerning the exercise).
2. This exercise will be **completed and turned in to your instructor ONE WEEK BEFORE** your presentation along with the reprint of the article you have chosen to use as the basis for your oral presentation.

Extra Credit

Extra credit assignments are not available in this course.

Make Up Tests

Make-up exams will be administered **ONLY FOR EXTENUATING CIRCUMSTANCES OR UNIVERSITY-AUTHORIZED ABSENCES**. You **MUST** present a valid university excuse to me and/or make arrangements with me **BEFORE** the exam is missed in order to be able to make up a missed lecture exam. If a make-up exam is granted, it will be taken immediately.

Important Dates

Last day for term schedule changes: January 20, 2023.

Deadline to file for graduation: February 20, 2023.

Last Day to drop with a grade of "W:" March 27, 2023.

Attendance

Each student will evaluate each of your fellow classmates' seminar presentations. Therefore, **attendance at ALL seminar presentations is MANDATORY**. Points will be deducted from your final grade for any days missed. We only meet one day a week for an hour, so I expect all of you to always be here for class. See the MSU Handbook for further information on attendance. We will have a single **Saturday morning meeting on March 4th, 2023 at 9:00 A.M.** in which each student will take the comprehensive Major Field Test (MFT) in Biology. This separate date/time is necessary due to the length of this standardized exam being 2 hours. **YOUR ATTENDANCE ON THIS DATE TO TAKE THE EXAM IS MANDATORY!**

Class Policies

Class Prerequisite: Restricted to senior biology or general science majors.

Class Requirements

This class is to be taken by biology/science majors that are in their final semester before graduating (or December graduates of the current year).

ALL PHONES SHOULD BE OFF AND PUT AWAY IN THE CLASSROOM. ABSOLUTELY NO TEXTING ALLOWED DURING CLASS!

University Teams and Organizations

All members of in-season sports teams or other campus organizations who will be missing class because of university sanctioned events MUST present to me a written statement on university letterhead and signed by a university official indicating those dates that will be missed because of travel or participation in the university-sponsored event. Athletics documentation must be presented to me within the first 2 weeks of the beginning of the semester. Other documentation (such as for theater, etc.) must be presented to me at least one week prior to the time that will be missed. NOTE: if you KNOW you will be missing more than 3 classes during the semester, you MUST come talk with me the first week.

Services for Students with Disabilities

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. In accordance with Section 504 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, Midwestern State University endeavors to make reasonable accommodations to ensure equal opportunity for qualified persons with disabilities to participate in all educational, social, and recreational programs and activities. After notification of acceptance, students requiring accommodations should make application for such assistance through Disability Support Services, located in the Clark Student Center, Room 168, (940) 397-4140. Current documentation of a disability will be required in order to provide appropriate services, and each request will be individually reviewed. **The instructor then needs to be notified by the student of the nature of these accommodations. This notification will take the form of an official letter obtained from DSS by the student and given to the instructor.** Every

effort should be made to provide me with this documentation within the first 2 weeks of the semester to avoid losing accommodations because you failed to provide proper notification in a timely manner. **It is always the responsibility of the student to arrange accommodations with DSS.** Students with disabilities must still take their exams on the same day as the rest of the class. For more details, please go to Disability Support Services.

College Policies

1. **Campus Carry Rules/Policies:** Senate Bill 11 passed by the 84th Texas Legislature allows licensed handgun holders to carry concealed handguns on campus, effective August 1, 2016. Areas excluded from concealed carry are appropriately marked, in accordance with state law. For more information regarding campus carry, please refer to the University's Campus Carry homepage. If you have questions or concerns, please contact MSU Chief of Police Patrick Coggins at patrick.coggins@mwsu.edu.
2. **Smoking/Tobacco Policy:** College policy strictly prohibits the use of tobacco products in any building owned or operated by WATC. Adult students may smoke only in the outside designated-smoking areas at each location.
3. **Alcohol and Drug Policy:** To comply with the Drug Free Schools and Communities Act of 1989 and subsequent amendments, students and employees of Midwestern State are informed that strictly enforced policies are in place which prohibits the unlawful possession, use or distribution of any illicit drugs, including alcohol, on university property or as part of any university-sponsored activity. Students and employees are also subject to all applicable legal sanctions under local, state and federal law for any offenses involving illicit drugs on University property or at University-sponsored activities.
4. **University Code of Conduct:** In general, students are to attend all meetings of all classes; instructors may drop students for excessive absences, indifference, disruptive behavior, or failure to complete class assignments; students are prohibited from cheating, plagiarizing, or colluding. Students are expected to have read the Student Handbook.
5. **Academic Dishonesty:** Cheating, plagiarism, and collusion (as well as several other forms of conduct) are all strictly prohibited at MSU. Please read the MSU Student Handbook definitions of cheating, plagiarism, and collusion and MAKE SURE that you do not engage in any of these behaviors. If you are unclear on what may count as cheating, plagiarism, or collusion after reading the material below, please see the instructor or the Dean of Students.
 - a. The term "**cheating**" includes, but is not limited to: (1) use of any unauthorized assistance in taking quizzes, tests, or exams; (2) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; or (3) the acquisition, without permission, of tests or other academic material belonging to a member of the faculty, staff, or another student.
 - b. The term "**plagiarism**" includes, but is not limited to, the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgment. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials. Plagiarism also includes the use of someone else's thoughts, words, ideas, or lines of argument in your own work without appropriate documentation (a parenthetical citation at the end and a listing in "Works Cited") whether you use that material in a quote, paraphrase, or summary. It is a theft of intellectual property and will not be tolerated, whether intentional or not.

- c. The term “**collusion**” means collaboration with another person in preparing any work offered for credit if that collaboration is not authorized by the faculty member in charge.
 - d. **Student Honor Creed:** “As an MSU Student, I pledge not to lie, cheat, steal, or help anyone else do so.” You should memorize this and live by it.
 - e. **Any form of cheating will result in a 0 (zero) for the assignment/exam/quiz.** Repeated cheating will result in an F in the course and an instructor drop (with F).
- 6. Safe Zones Statement:** The professor considers this classroom to be a place where you will be treated with respect as a human being regardless of gender, race, ethnicity, national origin, religious affiliation, sexual orientation, political beliefs, age, or ability. Additionally, diversity of thought is appreciated and encouraged, provided you can agree to disagree. It is the professor's expectation that ALL students consider the classroom a safe environment.
- 7. Instructor Drops:** According to the MSU Student Handbook, “An instructor may drop a student any time during the semester for excessive absences, for consistently failing to meet class assignments, for an indifferent attitude, or for disruptive conduct.” For the purposes of this course, “consistently failing to meet class assignments” includes consistently not turning in assigned work or turning in work that consistently receives a failing grade.
- 8. Intellectual Property:** By enrolling in this course, the student expressly grants MSU a “limited right” in all intellectual property created by the student for the purpose of this course. The “limited right” shall include but shall not be limited to the right to reproduce the student’s work product to verify originality and authenticity, and for educational purposes.

Grade Appeal Process

Students who wish to appeal a grade should consult the Midwestern State University Undergraduate Catalog

Notice

Changes in the course syllabus, procedure, assignments, and schedule may be made at the discretion of the instructor.

Course Schedule

Week	Date	Topic/Exam
1	Jan 16	MLK Holiday – No Class
2	Jan 23	Introduction and Syllabus Determination of the Order of Presentations
3	Jan 30	How to Conduct a Library Search Aspects of Oral Presentation Literature Evaluation Report
4	Feb 6	Peer Evaluation Sheets Microscope Practice in Lab
5	Feb 13	Microscope Proficiency Exam (written and practical)
6	Feb 20	Tables/Graphs Proficiency Exam (written)
7	Feb 27	Major Field Test Information/Review
7	Mar 4	SATURDAY MEETING 9:00am – 12:00pm: Major Field Exam
8	Mar 6	Student Presentations; Submission of Literature Evaluation Reports (if our class remains small, no presentations but we will talk about them)
9	Mar 13	SPRING BREAK – No Class
10	Mar 20	Student Presentations; Submission of Literature Evaluation Reports 1. 2.
11	Mar 27	Student Presentations; Submission of Literature Evaluation Reports 3. 4.
12	Apr 3	Student Presentations; Submission of Literature Evaluation Reports 5. 6.
13	Apr 10	Student Presentations; Submission of Literature Evaluation Reports 7. 8.
14	Apr 17	Student Presentations; Submission of Literature Evaluation Reports 9. 10.
15	Apr 24	Student Presentations; Submission of Literature Evaluation Reports 11. 12.
16	May 1	Exit Questionnaire Return of Evaluation Packets