

**BIO 598 – Graduate Seminar
Western Kentucky University
Syllabus and Course Information Sheet**

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Class Schedule:

Lectures/Readings/Discussions posted on Blackboard: Every week

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WELCOME TO BIO 598

Congratulations to you all for joining the Western Kentucky University academic family and a warm welcome to our Biology community. I am all excited and looking forward to introducing you to the core tenets and principles of the science of Biology through a unique course titled the GRADUATE SEMINAR. This course will be a memorable journey about knowing comprehensively the science and framework of biology with an emphasis on scientific communication. I will utilize the basic introductory concepts in biology that you learned in all your courses thus far such as cell and molecular biology, genetics, evolution and ecology to open a new door into an exciting world of understanding LIFE. We will also discuss about the style, structure, organization and presentation of scientific material and the process involved in oral presentations and communicating scientific manuscripts.

As in my earlier classes, my teaching methodology will follow the principle of “deep learning”. Briefly, deep learning is a process where the student learns with understanding as opposed to rote or surface learning where he/she just collects innumerable unrelated facts. My personal definition of a great teacher is “an individual who promotes a classroom environment, where learning is a continuous and stimulatory process aimed at analysis, assimilation and application.” That said, I look forward to a fulfilling experience in our classes, where we will work together and through the fascinating world of biology, create a pathway to a greater understanding of ourselves and the life around us and how we communicate and document scientific research. The rest of the course information sheet will help you to understand the objectives we will achieve through this course, the methods used to measure and gauge your progress throughout the course, and the WKU academic policies and rules.

COURSE DESCRIPTION

Biology 598 is a seminar course that emphasizes on scientific process and scientific communication. It familiarizes students with the core principles and framework of the science of biology and the style, structure, organization and presentation of scientific material that emanates out of research conducted in biological science. The online lectures will consist of general topics in biology given by the instructor as well as experts in the field that will enable students to learn about the current knowledge base in biology. The seminars will be evaluated and analyzed by students providing them with the opportunity to apply their learned concepts with real world scenarios. Students will also learn about documenting biological research in the form of oral presentations and peer-reviewed scientific manuscripts. In addition, students will

learn about making themselves proficient in the job market through developing an effective CV or resume and knowing about the core principles they should emphasize during a job interview.

COURSE OBJECTIVES

Biology 598 will enable students to:

1. Increase their knowledge base in biology and apply concepts learned in classroom to real world scenarios by listening to seminars given by experts in the field.
2. Practice listening comprehensive skills by critical evaluation of seminars and lectures
3. Practice reading comprehension by critical evaluation of primary scientific literature
4. Practice scientific writing and communication
5. Effectively prepare for oral presentations
6. Prepare an effective CV or resume and know the core tenets of interviewing efficiently for positions in their field.

STUDENT LEARNING OUTCOMES

After successfully completing Biology 598, the student will have the ability to:

1. Comprehensively assimilate, analyze and evaluate scientific information from seminars
2. Formulate analytical questions and propose future research ideas from scientific presentations
3. Document scientific concepts and principles through reading reaction papers and reports from
4. seminars scientific manuscripts
5. Prepare an effective CV and resume along with a succinct introductory elevator speech in their field
6. Effectively prepare for oral presentations
7. Prepare an abstract for scientific publications and meetings
8. Prepare a peer-reviewable scientific manuscript and have a working knowledge of the scientific peer-review process

EXPANDED COURSE DESCRIPTION

Please refer to the lecture schedule at the end of this document

TEXTBOOK

There is no required textbook for this course. Course materials and lectures/seminars will be posted on Blackboard site

SUGGESTED READING RESOURCES

1. A short guide to writing about biology by Jan A. Pechnik (2013), Eighth Edition, Pearson, Boston, MA ISBN-13 978-0-205-92248-2.
2. This is biology by Ernst Mayr (1997), Harvard University Press, Cambridge, MA. ISBN-0-674-88468-X

CLASS POLICIES

Attendance: WKU believes that regular class attendance is a crucial component for student success. Every class lecture is a vital foundation for subsequent class meetings. Without full participation and regular class attendance, students will be at a severe disadvantage for achieving

success at college. Class participation (discussions and assignments) shall constitute an important part of the final course grade. It is my responsibility as a faculty member, to determine how participation is achieved in all my classes. I will require students to regularly attend class and will keep a record of attendance from the first day of class and/or the first day the student's name appears on the roster through final examinations. When a student has 5 days unexcused absences, I will record the student's unexcused absences. The student will receive an emailed warning from me that upon one more day of unexcused absence, the student will be dropped from all classes in which the unexcused absences are reported. Some of the forms of absence that can be considered officially excused are: (1) Sick and medical emergencies (2) Representing WKU at an official institutional function. Other excuses will be considered, at my discretion, with documentation.

Dropping: If a student chooses to drop the course, it is that student's responsibility to ensure proper documentation with WKU. Failure to do so could result in a grade of F in the course. If you wish to withdraw from the course you should do so by the dates mandated by the University. Be sure you are aware of these dates because credit for the course will not be changed after the university's designated time. You also cannot drop the class or Withdraw after the designated time.

Disabilities: "Students with disabilities who require accommodations (academic adjustments and/or auxiliary aids or services) for this course must contact the Office for Student Disability Services at (270) 745-5004. Please DO NOT request accommodations directly from the professor or instructor without a letter of accommodation from the Office for Student Disability Services."

Dishonesty Statement: WKU does not tolerate cheating, plagiarism or other acts of dishonesty. Definitions of these acts and procedures for dealing with them are described in the WKU standards of professional conduct on the university website and in the student handbook.

Civility Statement: Members of the WKU community, which includes faculty, staff and students, are expected to act responsibly in the online classroom environment. WKU holds all members accountable for their actions and words. Therefore, all members should commit themselves to behave in a manner befitting a responsible College and Civilian community. Responsible College and Civil behavior in an online class applies to language while posting comments in the discussion forums. Please do not post personal and offensive comments during discussions.

Point Distribution:

Assignments (2 x 100 points each)	200 points
Final exam – Research Paper	200 points
Discussions and reading reactions	<u>100 points</u>
	500 points

LECTURE/SEMINAR SCHEDULE

Week 1 INTRODUCTION: What's in it for me?
This is Biology

Week 2 The DNA story

Week 3 Writing a CV

Week 4 Assignment 1

Week 5 Genomics 101- Dr. Barry Schuler

Week 6 Fossils, Genes and Mousetraps – Dr. Kenneth Miller

Week 7 The Elevator Speech

Week 8 Writing a scientific abstract

Week 9 Stem cells and tissue regeneration – Dr. Jill Helms

Week 10 The hunt for unexpected Genetic heroes – Dr. Stephen Friend

Week 11 The Biology job interview

Week 12 Assignment 2; Manuscript Review

Week 13 The purpose of purpose – Dr. Richard Dawkins

Week 14 FINAL RESEARCH PAPER