

DEPARTMENT OF ZOOLOGY

ZOO342

Syllabus, Fall 2025

LECTURE TIME AND PLACE

Mondays 1:00-1:50pm; in-person lectures will be given on 5 B1 073..

COURSE OBJECTIVES

Nature and properties of genetic material; DNA as a genetic material; RNA as a genetic material of some viruses. DNA synthesis and the molecular gene concept; DNA sequence and duplication in chromosomes. The concept of gene expression (transcription and translation and processing of RNA molecules); an introduction to regulation of gene expression in eukaryotes.

LEARNING OUTCOMES

- Knowledge about basic concepts of Zoology including cell biology, cell divisions, molecular biology, and genetics.
- Practical knowledge about basic molecular biology techniques.
- Identify the chromosomal basis of inheritance and describe synthesis of polypeptide.
- Explain Fertilization and Meiosis..
- Examine mitotic and meiotic division in plant and animal cells.
- Ability to discuss scientific and write about concepts in addition to critically evaluate the written work of peers.

TEXTBOOK

The majority of the material from this course will be from Campbell's Biology textbook as well as published scientific literature. Papers are accessible free of charge and electronically through the KSU Library. Links to these sources and the PDF files can also be downloaded from Blackboard: <https://access.library.ksu.edu.sa/>

"At the Bench" is an essential guide in graduate school. It is recommended for all graduate students but will not be covered in the course.

ASSESSMENT

The grading for this course will be as follows:

30% Midterm

30% Practical lab session

40% Final examination

EXTRA CREDIT

Extra credit will be available under extenuating circumstances, on a case-by-case basis.

OBTAINING EXTRA HELP

I will be available to answer your questions immediately after class, by appointment (please email beforehand), or by visiting her during her office hours (you are still encouraged to set up an appointment for the visit as well so she can expect you). It would be highly efficient to submit questions by e-mail that will be promptly answered by return e-mail. Otherwise, please refer to the office hours listed above.

CLASS ATTENDANCE

In accordance with University policy, you are expected to attend every scheduled class. If you have a valid reason for missing class such as a University-sponsored activity, illness, or family emergency, the instructor will assist you in obtaining information and materials you may have missed (only if the instructor is informed of this absence before the class starts). Students who skip class without a valid excuse should not expect the instructor to supply class notes or provide special help. Note that Absence from class will count against your class participation grade unless the absence is excused by the instructor.

ACADEMIC MISCONDUCT

Academic misconduct of any kind will not be tolerated in any course taught by Me. Any incidence of academic misconduct will be reported to the Department head and will be reflected in your grade.

The following are a few examples of academic dishonesty:

- Substituting on an exam for another student
- Substituting in a course for another student
- Paying someone else to write a paper and submitting it as one's own work
- Giving or receiving answers by use of signals during an exam
- Copying with or without the other person's knowledge during an exam
- Doing class assignments for someone else
- Plagiarizing published material, class assignments, or lab reports
- Turning in a paper that has been purchased from a commercial research firm or obtained from the internet
- Padding items of a bibliography
- Collaborating with other students on assignments when it is not allowed
- Fabricating data

Plagiarism is a special kind of academic dishonesty in which one person steals another person's ideas or words and falsely presents them as the plagiarist's own product. This is most likely to occur in the following ways:

- Using the exact language of someone else without the use of quotation marks and without giving proper credit to the author
- Presenting the sequence of ideas or arranging the material of someone else even though such is expressed in one's own words, without giving appropriate acknowledgment
- Submitting a document written by someone else but representing it as one's own.

Week #	Date	Material to be covered
1	08/31/2025	Introduction of molecular biology
2	09/07/2025	What is Life made of? And mitotic division
3	09/14/2025	Life cycle and Meiotic division
4	09/21/2025	Genetic Material and chromatin
5	09/28/2025	Midterm
6	10/05/2025	DNA replication
7	10/12/2025	Translation and protein synthesis
8	10/19/2025	Transcription and gene expression
9	10/26/2025	Discussion groups
10	11/02/2025	Midterm
11	11/09/2025	Mendel and the gene idea
12	11/16/2025	The law of Independent Assortment
13	11/30/2025	The chromosomal basis of inheritance
14	12/07/2025	Review and wrap up