



Tentative Course Plan
DEPARTMENT OF BOTANY

Class: BS (BOTANY)

Semester- 2nd

Session: Spring (2019-23)

Instructor	Maham Tariq	Email: mahamtariq567@gmail.com	
Course Title	Principle in animal life	Program	BS
Course Number	ZOOL-01203	Credit Hours	4(3+1)

Lecture	Monday (11:30am to 2:30pm)and Thursday (11:30am to 1:30pm), Room# 00
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Course Objective:

This course will help to understand the cell cycle meiosis and mitosis including all its stages, behaviour, structure and evolution of animals. Mendelian law's of inheritance, chromosomal changes and the DNA structure, explaining the evolution of animals theories about evolution. Animal behavior including their learning and social behavior. This course also includes the study of gene flow, genetic drift, mutation and speciation.

Course Outcomes:

This course covers the principle of animal life from internal cell division up to animal behavior also included the evolutionary perspectives. The laboratory work includes the study of meiosis, mitosis and various animal behavior as mentioned in theory.

Methods of Teaching

- Assigned readings
- Group activities & Discussion
- Audiovisual aids lectures
- Web-assisted instruction
- Student-Directed Teaching

Resource Material

1. Miller and Harley, 2002. Zoology, 4th & 5th Edition (International).
2. Pechenik, J.A., 2012. Biology of invertebrates, 4th Edition). Singapore.
3. Riaz-ul-haq ramay. 2009. Principle of animal life. Lahore.
4. Miller, S.A., 2002. General zoology laboratory manual. 5th Edition (International) Singapore.

2. Reference Book

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3. Research Papers

i

ii

4. Hot Research Papers

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ii

5. Web Resources

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ii

Office Help Hours	Monday, _ Friday: 12:00-02:00 pm
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Grading	Exam (Date to be announced) Mid- Exam (30%) Final Exam (50%) Problem Session/Assignments (20%)
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Problem Sessionday: 00 and 00 periods (0:00-00:00am), Room# 00
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SEQUENCE OF TOPICS TO BE COVERED

Session/ Week	Topics (outline of main topics and sub topics)	Chapter #	Tutorial /Laboratory
1	Introduction to principle of animal life: aim, objectives and importance.		
2	Description of cell division, cell cycle, mitosis and meiosis stages explanation.		Study of mitosis in onion root tip.
3	Introduction of modern genetics, inheritance pattern		Study of meiosis in grasshopper testis

4	Explain the mendelian inheritance pattern, gene expression		Problem base study of mendelian ratio in animals
5	Eukaryotic chromosomes, linkage relationship		
6	Changes in chromosome number and their structure and causes of mutation		Multiple allele study in blood group
7	DNA the genetic material,replication in eukaryotes, control of gene expression in eukaryotes		
8	Application of genetic technologies, explanation of recombinant DNA		Study of karyotypes of <i>Drosophila</i> , mosquito
	Mid Term Exam	Course/Discussion	
9	Animal behavior, approaches of animal behavior		study of cytochemical detection of DNA in protozoa and avian blood cell
10	Development of behavior,learning and control of behaviour		Demonstration of nervous or endocrine basis of behavior.
11	Animal communication, social behavior, behavioral ecology		Study to demonstrate social behavior
12	Historical perspectives of evolution, Pre-Darwin theoris, Lamark theory of evolution .		-
13	Concept of Darwin about evolution, theory of natural selection.		Study of genetic factor in population and its frequencies
14	Hardy-Weinberg principle, population size,Genetic drift, genetic flow,		-
15	Mutation and balanced polymorphism, species and speciation.		-
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	Final Term Exam	Course/Discussion	

Student Evaluation criteria:

Attendance	5%
Workshop / Assignments/Case study	5%
Surprise Test/Sudden Test , Quizzes	5%
Class Participation	5%
Mid Term Paper	30%
Final Term paper	50%
Total	100%

Student Responsibilities:

Students must attend class. Failure to attend class may result in failure in the course. Students must also arrive on time and remain in class for the entire period. Cellular Phones and Beeper must be Turned off (Proper classroom decorum [behavior] adopts, Course outlines and calendars explain requirements and assignments, students are responsible for knowing what they say. Students are also responsible for doing all assigned work on time. Excessive absences (more than 03) will result in “F Grade”. Students may prepare Sketchbook for taking notes and for references.

Instructor/Tutor

Approved by:

Dean/ Chairman/ HOD/ Subject Specialist/ Program Coordinator