



Jordan University of Science and Technology
Faculty of Agriculture
Animal Production Department

AP349 Animal Genetics

First Semester 2021-2022

Course Catalog

2 Credit Hours. The course covers topics in animal genetics that include the basic of genetics (Cytogenetics, molecular genetics) , mode of inheritance , single genes inheritance in farm animals, gene expression, some farm animals disorders and genetic diseases, the molecular analysis of single gene disorders; essential animal biotechnology procedures especially genes detection and sequence analysis.

Text Book

Title	Introduction to Veterinary Genetics
Author(s)	F.W. Nichlas
Edition	3rd Edition
Short Name	Genetics
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Biochemistry and Molecular	Biochemistry and Molecular Biology. Oxford new York Melbourne, oxford university press	William H. Elliott and Daphne C. Elliott	2nd Edition	

Instructor

Name	Prof. Khaleel Jawasreh
Office Location	-
Office Hours	Sun : 08:00 - 09:00 Mon : 11:30 - 14:30 Tue : 08:30 - 09:00 Wed : 11:30 - 13:30
Email	kijawasreh@just.edu.jo

Class Schedule & Room	
Section 1:	Lecture Time: Mon : 08:30 - 09:30 Room: C5020
Section 2:	Lecture Time: Wed : 08:30 - 09:30 Room: C5020

Prerequisites		
Line Number	Course Name	Prerequisite Type
612130	AP213 Introduction To Biostatistics	Prerequisite / Study
961030	BT103 General Biology	Prerequisite / Pass

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Basic Genetics - Chromosomes - Meiosis and Mitosis	From Genetics
Week 2	The Biochemistry of inheritance , - What is the gene?	From Genetics , From Biochemistry and Molecula
Week 3	Gene regulation - Mutations - Gene, Allele and loci	From Genetics
Weeks 4, 5	Simple or mendelian inheritance - Linkage	From Genetics , From Biochemistry and Molecula
Week 6	Types of DNA - Gene expression	
Weeks 7, 8	Molecular Biology - Restriction Enzymes - Recombinant DNA and DNA cloning	From Genetics , From Biochemistry and Molecula
Weeks 9, 10	Complementary DNA - DNA sequencing - Polymerase chain reaction - DNA microarrays (DNA chips)	From Genetics
Weeks 11, 12	The detection of variation in base sequence - Variable number of tandem repeats (VNTR), DNA figure printing and microsatellites - Single nucleotide polymorphisms (SNPs) - Gene mapping	From Genetics

Weeks 13, 14	Single gene disorders - Inborn errors of metabolism - Sex- limited inheritance - Genetical heterogeneity of disease - Type of gene actions	From Genetics
Weeks 14, 15, 16	Single genes in animal breeding - Coat color - Carpet wool - Prolificacy in sheep - Polledness - Muscular hypertrophy in cattle and sheep - Dwarf poultry - Genes for sexing chickens - Ear size inheritance in sheep - Pedigree checking Lethal and semi lethal genes and some disorders in mammals and poultry	From Genetics

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Understanding the basic knowledge of Cell and chromosomes structure [1SLO 1, 1SLO 2, 1SLO 3]	5%	

Relationship to Program Student Outcomes (Out of 100%)			
SLO 1	SLO 2	SLO 3	SLO 4
1.67	1.67	1.67	

Policy	
Exams	According to the University guidelines but there will be short exams that will take 10 points from the first and second total marks

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