Jordan University of Science and Technology
Faculty of Veterinary Medicine
Veterinary Medicine And Surgery Department

VM205 Animal Breeding And Genetics
Second Semester 2019-2020

Course Catalog

2 Credit Hours. This course will familiarize students with fundamentals of genetic and their applications in animal breeding to improve livestock. Specifically understand: 1) basic genetics (chromosome structure, gene, cell cycle, gene mutation, Mendel?s laws, and classical genetic), 2) population genetics (genetic constituents of population, quantitative & qualitative traits, gene and genotypic frequencies, and Hardy-Weinberg equilibrium), and 3) selection & mating (how to select the best animal, selection for simply-inherited vs. polygenic traits, heritability & repeatability, and mating systems)

Text Book

Title	Genetics-A Conceptual Approach
Author(s)	Pierce, B. A.
Edition	1st Edition
Short Name	1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
2	Understanding Animal Breeding	Bourdon, R. M.	2nd Edition	

Instructor

Name	**Prof. Mofleh Awawdeh**
Office Location	M1-L0
Office Hours	Sun : 11:30 - 12:30 Tue : 11:30 - 12:30 Tue : 13:30 - 14:30 Wed : 10:30 - 11:30 Thu : 11:30 - 12:30 Thu : 14:30 - 15:30
Email	mawawdeh@just.edu.jo

Class Schedule & Room

Section 1:
  Lecture Time: Tue, Thu : 10:30 - 11:30
  Room: قاعة ابن رشد
 	
Section 2:
  Lecture Time: Tue, Thu : 09:30 - 10:30
  Room: LAB

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Week 1	Introduction	From **1**
Week 2	Chromosome and cellular reproduction	From **1**
Weeks 2, 3	Chromosome Structure, Replication, Transcription	From **1**
Week 4	Chromosome and Gene Mutation	From **1**
Week 4	Basic principles of heredity	From **1**
Weeks 5, 6	Extensions and modifications of basic principles	From **1**
Week 7	What is the best animal	From **2**
Week 7	How are animal populations improved; Simply-inherited and polygenic traits	From **2**
Week 8	Genes in population	From **2**
Week 8	Selection for simply-inherited traits	From **2**
Week 9	The genetic model for quantitative traits	From **2**
Week 10	Heritability and Repeatability	From **2**
Week 11	Multiple-trait selection	From **2**
Week 11	Selection for simply-inherited traits	From **2**
Week 12	Mating systems	From **2**
Week 13	Mating strategies based on pedigree relationship: inbreeding and outbreeding; Hybrid vigor	
Week 14	Crossbreeding systems	From **2**

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Understand chromosome and gene structures, mutation, cell cycle, and sexual reproduction.	25%	
Select the best animal based on the breeding purposes for future mating.	25%	

Differentiate mating strategies for selected animal to achieve the breeders? objective.	25%	
Understand population genetics and how selection and mating affect gene?s frequency.	25%	

Relationship to Program Student Outcomes (Out of 100%)									
1	2	3	4	5	6	7	8	9	10

Evaluation	
Assessment Tool	**Weight**
1st Exam	30%
2nd Exam	30%
Final Exam	40%

Policy	
Policy	Assignments It is expected that all academic work completed in this class be done individually by you. Exams Cheating Plagiarism and cheating are serious offenses and may be punished by failure on the exam, paper, or project; failure in the course according to JUST rules. Attendance Highly recommended and required by JUST rules. There will be no makeup for quizzes and HW for unexcused absence. Workload Depends on your attendance, participation, and taking complementary notes. Graded Exams Will be discussed with students. Participation Highly recommended. Laboratory Projects No specific project. But, there will be some assigned papers.

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