Jordan University of Science and Technology

Faculty of Agriculture

Animal Production Department

AP442 Animal Breeding
Second Semester 2020-2021

Course Catalog
3 Credit Hours. This course will focus on the application of genetics to livestock production. Consideration of breeding objectives, breed characteristics, hybrid vigor, crossbreeding, relationship, inbreeding, gene frequency, detection of heterozygotes, selection criteria, heritability, direct and correlated response to selection, genetic evaluation and prediction and genotype-environmental interactions.

Text Book	
Title	Understanding Animal Breeding.
Author(s)	R.M. Bourdon
Edition	2nd Edition
Short Name	Ref#1
Other Information	

Instructor	
Name	**Dr. Mohammad Diya' Obeidat**
Office Location	-
Office Hours	Sun : 12:00 - 13:00 Mon : 11:00 - 13:00 Tue : 09:00 - 10:00 Wed : 10:00 - 12:00
Email	mdobeidat@just.edu.jo

Class Schedule & Room

Section 1:
Lecture Time: Sun, Tue : 10:00 - 11:00
Room: منصة الكترونية

Prerequisites		
Line Number	**Course Name**	**Prerequisite Type**
613490	AP349 Animal Genetics	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Week 1	Introduction	From **Ref#1**
Week 2	Basics of Genetics	From **Ref#1**
Weeks 3, 4	Genetic relationships Measures of relationship and inbreeding Effect of inbreeding on relationship Variability in genetic similarity among relatives	From **Ref#1**
Week 5	Selection for qualitatively inherited traits Gene frequency and selecting against recessive genes Detecting heterozygote for recessive The use of markers and/or molecular probes	From **Ref#1**
Weeks 6, 7	Breeding systems and utilization of breeds Commercial straigtbreeding Crossbreeding systems, including Composites Seedstock breeding program	From **Ref#1**
Weeks 8, 9, 10	Selection for quantitatvely inherited traits Genotype-Environmental interactions Selection Criteria Transmitting ability and heritability Factors affecting selection response Correlated Characters Selection for Female productivity and efficiency Monitoring Unwanted correlated response	From **Ref#1**
Weeks 11, 12	Linebreeding	From **Ref#1**

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Gain a good understanding of basics of animal genetics and modern techniques of genetic evaluation. [1SLO 1, 1SLO 2, 1SLO 3, 1SLO 4]	20%	
Define genes, alleles, chromosomes, genotypes, and phenotypes. [1SLO 2, 1SLO 3]	20%	
Estimate allele and genotype frequencies using data from a given population. [1SLO 2]	20%	

Define and apply various terminologies used in quantitative animal breeding: heritability, repeatability, selection, selection response, selection intensity. [1SLO 2, 1SLO 3]	20%	
Describe factors that affect rate of genetic change in animal breeding improvement. [1SLO 2, 1SLO 3]	20%	

Relationship to Program Student Outcomes (Out of 100%)			
SLO 1	SLO 2	SLO 3	SLO 4
5	55	35	5

Evaluation	
Assessment Tool	**Weight**
midterm exam	50%

Policy	
Exam	Written exams will be a combination of True and False, Multiple Choice, fill in the blank, problems, and short essay questions. No makeup exams unless the student is excused. Makeup exams will not be the same exam given to the rest of the class
Cheating	Prohibited; and in case of cheating the student will be subject to punishment according to the rules of JUST
Attendance	According to the Just policy: 20% of the total class count
Participation and discussion	Essential and highly encouraged
Withdraw	According to the timeline of JUST

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