Animal Breeding and Improvement

DIPLOMA COURSE SPECIFICATION

A. BASIC INFORMATION

University:	**University of Sadat City**
Faculty:	**Veterinary Medicine**
Program on which the course is given:	**Diploma of Animal Husbandry**
Department offering the Course:	**Husbandry and Animal wealth Development**
Course code:	**909**
Course title:	**Animal Breeding and Improvement**
Lecture (hr/week):	**1**
Practical (hr/week):	**1**
Course coordinator:	**Dr. Ahmed Dawod**

B.   PROFESSIONAL INFORMATION

١)   Overall aims of course

At the end of this course, the student must be comprehend the principles of animal heredity and breeding in the goal of raising animals of high production potential, gain preliminary competences in animal production and familiarized with the concepts involved in the application of genetic principles to animal improvement.

٢)   Intended learning outcomes of course (ILOs)

a)   KNOWLEDGE AND UNDERSTANDING

By the end of this course, the graduate should be able to:

a.1. Recognize the principles of animal production regarding the fields of heredity, breeding, nutrition and management in the goal of raising animals of high production potential.

a.2. Identify the principles of animal breeding and genetics and how to apply them to increase the efficiency of farm animal production.

a.3. Enumerate types and breeds of farm animals and their type of production.

b)   INTELLECTUAL SKILLS

By the end of this course, the student should be able to:

b.1. Analyze animal breeding and production problems using group discussions, and problem solving.

b.2. Detect the independent research results and discussions necessary to complete assignments, and creativity through determining how to present material in an effective manner.

b.3. Investigate the subject of how to deal with and mange animal production enterprises

c)   PROFESSIONAL AND PRACTICAL SKILL

By the end of this course, the student should be able to:

c.1. Develop husbandry programs.

c.2. Record and analyze production records.

c.3. Apply genetic principles in improvement of farm animal production.

c.4. Judge farm animal production.

d)   GENERAL AND TRANSFERABLE SKILL

By the end of this course, the student should be able to:

d.1.   Join and work effectively as part of a team.
d.2.   Efficiently make use of library facilities and IT tools.
d.3.   Design the spreadsheets, presentation packages and graph plotting.

٣) Topics and contents

	Topics	Lectures	Practical	Total
		No. of hours		
		Lectures	Practical	Total
1	Traits, Phenotypes, Genotypes and Genes in Populations	2	2	4
2	The Basic Model for Quantitative Traits	4	4	8
3	Gene and genotype frequencies	4	4	8
4	Mating Systems	4	4	8
5	Genetic Parameters	4	4	8
6	Correlations	4	4	8
7	Principles of Selection	2	2	4
8	Selection methods	4	4	8
9	Factors altering gene and genotypic frequencies (solved problems)	4	4	8
10	Relationship and Inbreeding coefficients (solved problems) Hybrid vigor (solved problems)	4	4	8
11	Genetic parameters (solved problems)	4	4	8
12	Response and Correlated Response to selection (solved problems)	4	4	8
	Total	44	44	88

٤) Teaching and learning methods

4.1 Lectures**.**
4.2 Practical sessions.
4.3 Self-learning activities.

٥) Student assessment

5.1. Assessments methods

1- Written exam	For assessment of knowledge, back calling and Intellectual skills
2- Practical exam	For assessment of practical and professional skills.
3- Oral exam	For assessment of knowledge and Intellectual skills
4- Student activities	For assessment of knowledge and general and transferable skills

5.2-MATRIX ALIGNMENT OF THE MEASURED ILOS/ ASSESSMENTS METHODS:

Methods	MATRIX ALIGNMENT OF THE MEASURED ILOS/ ASSESSMENTS METHODS			
	K.U (a)	I.S (b)	P.S (C)	G.S (d)
Written exam	1,2,3	1,2,3	-	-
Practical exam	----	----	1,2,3,4	--
Oral exam	1,2,3	1,2,3	-	-

Periodical exams and activities	1,2,3	1,2,3		1-3

5.3-WEIGHT OF ASSESSMENTS:

Assessment	Allocated Mark	Evidence
Final written exam	50%	Marked and signed written paper
Practical exam	20%	Marked and signed practical exam paper
Oral exam	20%	Signed list of oral exam marks
Student assignments	10%	Representative samples of presented materials

٦) List of references

6.1. Essential textbooks

- Bourdon, A. (1999): Understanding Animal Breeding. 1st Ed. Printce Hall, New Jersey
- Falconer, D. and Mackay, T. (1996): Introduction to Quantitative Genetics. 4th Edition. Longman.
- Simm, G. (1998) Genetic Improvement of cattle and sheep. Farming Press, Miller Freeman, UK, Ltd.

6.2. Periodicals

- Journal of Dairy Science
- Tropical Animal Health and Production
- Journal of Animal Science
- Journal of Heredity
- Small Ruminant Research

6.4. Web sites

- http://www.fao.org/ag/againfo/themes/en/animal_production.html
- http://www.fao.org/ag/againfo/resources/en/pubs_aprod.html

٧) Facilities required for teaching and learning

- **Animal Breeding Software**
- **Facilities for commercial companies visits**
- Recent textbooks on the topics of animal breeding.

	Course coordinators	Head of department
Name	**Dr. Ahmed Dawod**	**Prof. Dr. Mohamed Atef Helal**
Signature		

Matrix alignment of course topics and ILOs

Topic	No. of hours /week		Total hours / semester	Total hours for lect	Total hours for pract	ILOs			
	Lect.	Pract.				K&U (a)	I.S (b)	P.P.S (c)	G.T.S (d)
Traits, Phenotypes, Genotypes and Genes in Populations	1	1	4	2	2	1	1,2	1,2,3,4	1,2,3
The Basic Model for Quantitative Traits	1	1	8	4	4	2,3	1,2,3	1,2,3,4	1,2,3
Gene and genotype frequencies	1	1	8	4	4	2,3	1,2	1,2,3,4	1,2,3
Mating Systems	1	1	8	4	4	1,2,3	1,2	1,2,3,4	1,2,3
Genetic Parameters	1	1	8	4	4	1,2	1,2	1,2,3,4	1,2,3
Correlations	1	1	8	4	4	1,2,3	1,2,3	1,2,3,4	1,2,3
Principles of Selection	1	1	4	2	2	1,2,3	1,2,3	1,2,3,4	1,2,3
Selection methods	1	1	8	4	4	1,2,3	1,2,3	1,2,3,4	1,2,3
Factors altering gene and genotypic frequencies	1	1	8	4	4	1,2,3	1,2,3	1,2,3,4	1,2,3
Relationship and Inbreeding coefficients	1	1	8	4	4	1,2,3	1,2,3	1,2,3,4	1,2,3
Genetic parameters	1	1	8	4	4	1,2,3	1,2,3	1,2,3,4	1,2,3
Response and Correlated Response to selection	1	1	8	4	4	1,2,3	1,2,3	1,2,3,4	1,2,3
Total			88	44	44				