University: Damanhour **Faculty**: Veterinary Medicine
Department: Animal Husbandry and Animal Wealth Development

Animal Breeding and Production Course Specifications (2010 - 2011)

Program(s) on which the course is given:	BVSc
Department offering the program:	---
Department offering the course:	Animal Husbandry and Animal Wealth Development
Major or Minor element of programs:	Major
Academic year /Level:	2nd Year 1st and 2nd semesters
Date of specification approval:	

A. BASIC INFORMATION

Title: Animal Breeding and Production **Code**: 2AAPRO, 2BAPRO
Hours:
Lectures 2 hrs/week **Practical** 3 hrs/week **Total** 150 hrs

B. PROFESSIONAL INFORMATION

1. Overall aims of the course:

- At the end of this course, graduates would be able to understand the basic principles of animal production including the fields of genetic improvement, assessing performance, and management in order to raise animals of high production potential, understanding and improving reproductive performance of farm animals, understand the physiology of lactation in ruminants**,** types and breeds of farm animals and their type of production and familiarized with the new concepts involved in the field of animal production.

2. Intended Learning Outcomes (ILOs) of the Course:

a. Knowledge and Understanding:

a1 Principles of animal production regarding the fields of heredity, breeding, nutrition and management in the goal of raising animals of high production potential.
a2 Gain preliminary skills in animal production.
a3 Understand the principles of animal breeding and genetics and how to apply them to increase the efficiency of farm animal production.
Add simple understanding about reproductive physiology in mammals and the factors affecting it in order o increase reproductive efficiency.
a4 Realize the physiology of lactation in ruminants and birds.
a5 Identify types and breeds of farm animals and their type of production.

b. Intellectual Skills:

- **b1** Standup thinking for how to deal with field problems.
- **b2** Practice and applications of modern techniques in animal industry.
- **b3** Communication skills through group discussions, and problem solving.
- **b4** Standup thinking for how to deal with and mange animal production enterprises.
- **b5** Able to practice and apply the new trends for increasing and improving productive efficiency of farm animals.
- **b6** Independent research and interpretation necessary to complete assignments, and creativity through determining how to present material in an effective manner.

c. Professional and Practical Skills: The graduate should gain the ability to

- **c1** Perform survey observations, analyzing results and animal production quality assessment.
- **c2** Diagnose environmental problems and reasons of low production.
- **c3** Establish a close relationship between faculty and students through academic advising.
- **c4** Avoid faulty breeding programs.
- **c5** Plan for and estimating the results of genetic improvement programs.
- **c6** Develop husbandry programs.
- **c7** Judge farm animal production.

d. General and Transferable Skills:

- **d1** Experience in team work and critical analyses in relation to animal breeding and production.
- **d2** Handle and management of large animal farms.
- **d3** Design animal farms for cattle, sheep and goats.
- **d4** Know and respect of ethics and ethical standards will be developed in relation to animal production.
- **d5** Search the web and up-to-date communication with professional groups and colleagues.

3. Contents:

1st Semester

Topic	No. of hours	Lectures	Practical
An introduction to animal genetic improvement	2	2	--
Genetic description of animal populations	4	1	3
Ways of changing gene frequency	8	1	7
How are animal populations improved	4	2	2
Variation in economic traits in farm animals	2	2	--
Mating systems – Close breeding	5	1	4
Mating systems – Outbreeding	5	1	4
Biotechnology and animal breeding	2	2	--
An introduction to dairy cattle production	1	1	--
Breeds of dairy cattle	4	--	4
Heifer raising	8	2	6
Herd Replacement and culling	2	1	1
Developing a sheep flock enterprise.	3	1	2
Breeding program and selection in sheep and goats.	2	1	1
Reproduction in sheep.	3	2	1
Care of the ewe and newborn lamb.	2	-	2

Wool and mohair production.	2	-	2
Sheep flock management calendar.	2	-	2
Breeds of sheep.	2	-	2
Breeding plans for sheep production.	2	2	--
Breeding and kidding management in the goat herd.	2	2	--
Reproduction in goat.	2	2	--
Breeds of goats.	2	--	2
Understanding dairy goat production.	2	2	--
Breeding plans for goat production	2	2	--
2nd Semester			
Reproductive performance of dairy cattle.	10	4	6
Lactation and factors affecting milk yield and composition.	10	6	4
Managing the dry cow.	2	2	--
Selecting dairy sires	4	2	2
Selecting and judging dairy cattle.	4	1	3
Keeping records in dairy farms	3	--	3
Correction of milk records for non-genetic factors.	4	--	4
Milking	4	--	4
Principles and guides for efficient beef cattle production.	4	2	2
Use of growth promoters and hormone implants in beef cattle.	2	2	--
Systems of beef cattle production	3	1	2
Crossbreeding systems in beef cattle production.	4	2	2
Growth and development of beef cattle	3	1	2
Beef cattle housing and equipments	3	1	2
Receiving program for feeder cattle	4	2	2
Marketing beef cattle	2	2	--
Beef and beef carcasses cutting.	2	--	2
Carcass characteristics affecting beef palatability.	3	1	2
Feeding beef cattle	2	--	2
System of breeding and selection in beef cattle.	2	1	1
Total	150	60	90

4. Teaching and Learning Methods:

- **4.1** Lectures with the help of datashow and PowerPoint slide show
- **4.2** Discussions and class activities
- **4.3** Animal farms visits for training
- **4.4** Internet search for subject topics
- **4.5** Seminars

5. Student Assessment Methods:

	Exam	
5.1	Written Mid-term	To assess the ability to understand and remember knowledge, and intellectual skills
5.2	Written Final-term	To assess the ability to understand and remember knowledge, and intellectual skills
5.3	Practical Final-term	To assess professional and practical skills
5.4	Oral Final-term	To assess skills of analysis and discussion

Assessment Schedule (in each semester):

	Exam	**Week**
Assessment 1	Written Mid-term	8th
Assessment 2	Written Final-term	16th
Assessment 3	Practical Final-term	16th
Assessment 4	Oral Final-term	16th

Weighing of assessments

	Exam	**Per Semester (%)**	**Total (%)**
Assessment 1	Written Mid-term	10	20
Assessment 2	Written Final-term	25	50
Assessment 3	Practical Final-term	10	20
Assessment 4	Oral Final-term	5	10
	Total	50	100

6. List of References:

6.1. Course Notes:

- Lecture and Practical Notes by El-Sheikh, A.I. and Elmaghraby, M.M.A.

6.2. Essential Books:

- **Falconer, D. and Mackay, T. (1996)**: Introduction to Quantitative Genetics. 4th Edition. Longman.
- **Payne et al. (1990):** Dairy Cattle Principles, Problems, Practices and Profit. 2nd Edition.
- **Gillespie, J.R.** (1997): Modern Livestock and Poultry Production. 5th Ed. Delmar Publishers. An International Thomson. Publishing Company, London.
- **Larson, B.L.** (1985) Lactation. Iowa State University Press/ Ames, Iowa.
- **Phillips, C.J.C.** (2001) Principle of Cattle Production. CAB International Wallingford, Oxon Ox10 8De, UK
- **Simm, G.** (1998) Genetic Improvement of cattle and sheep. Farming Press, Miller Freeman, UK, Ltd.

6.3. Recommended Books:

- **Gillespie, J.R.** (1997): Modern Livestock and Poultry Production. 5th Ed. Delmar Publishers. An International Thomson. Publishing Company, London.
- **Simm, G.** (1998) Genetic Improvement of cattle and sheep. Farming Press, Miller Freeman, UK, Ltd.

6.4. Periodicals, websites, ….. etc

- Journal of Animal Science
- Livestock Production Science
- Animal Science
- Websites of academic departments of western universities e.g. Wisconsin-Davis and Penn State Departments of Animal Science.

7. Facilities Required for Teaching and Learning

- Teaching aids: Data show, video tapes, laboratory and computers.
- Up–to–date references in the library.
- Faculty training farm

Course Coordinator: Prof. Dr. A.I. El-Sheikh

Head of Department: Prof. Dr. Usama El-Sayed Mahrous

Date: