

University: Damanhur
Department: Animal Husbandry and
Animal Wealth Development

Faculty: Veterinary Medicine

Poultry 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: 3rd Year 1st and 2nd semesters
Date of specification approval: 9-3-2010

A. BASIC INFORMATION

Title: Poultry Breeding and Production **Code:** 3APPRO, 3BAPPRO
Hours (hrs/week/semester):
Lectures 2 **Practical** 2 **Total** 120

B. PROFESSIONAL INFORMATION

1. Overall aims of the course:

- To be Familiarized with the poultry industry, past and present, and introduce the student to the basic concepts of poultry biology, housing, brooding and rearing managements,
- The ways to produce high quality fertile eggs, table eggs and poultry meat.
- Principles of poultry breeding, pedigrees, marketing, record analysis.
- To be able to culling and selection of poultry, judging, selecting and mating.
- Grading poultry and eggs, hatching and grading chicks, selecting sources of chicks.
- How to estimate relationships and mating systems, and estimation of genetic parameters.
- Understanding principles of genetic selection to improve economic traits.

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

a. Knowledge and Understanding:

- a1** Principles and practices of commercial poultry production
- a2** Principles and practices of reproduction, environmental management, marketing and record keeping ensuring scientifically-based management decisions and consumer product acceptance.
- a3** Record keeping ensuring scientifically-based management decisions and consumer product acceptance.
- a4** Population genetics, inbreeding, hybrid vigor, heritability, genetic correlation and selection response.

b. Intellectual Skills:

- b1** Stand up thinking for how to deal with field problems.
- b2** Solving unexpected problems in poultry houses or in the hatching department
- b3** Practice and applications of modern techniques in poultry industry.
- b4** Train students to poultry breeding and genetic improvement programs.

c. Professional and Practical Skills:

- c1** Performing survey observations, analyzing results and poultry production quality assessment.
- c2** Ability to diagnose environmental problems and reasons of lower hatchability and productivity.
- c3** How to deal with rabbit skins, furs, ostrich skin, feather and egg shell planets.
- c4** Avoiding inbreeding depression and encourage heterosis.
- c5** Estimating genetic gain from selection and planning for genetic improvement.

d. General and Transferable Skills:

- d1** Experience in team work and critical analyses in relation to poultry breeding and production.
- d2** Handling and management of large number of chickens, turkey, water fowls; quails, pigeons.
- d3** Designing incubators, hatchers and operating the hatcheries.
Mating systems and method of selection among poultry and rabbit breeds
- d4** Internet Searching
- d5** Brooding and growing management skills of different poultry categories.

3. Contents:

1 st Semester			
Topic	No. of hours	Lectures	Practical
A. Poultry House Environments	8	4	4
<ul style="list-style-type: none">Physiological factors and environmentThe Environmental ProblemsPoultry Houses and Poultry House DesignCooling The Poultry House			
B. Hatching Egg Quality and Fertility	8	4	4
<ul style="list-style-type: none">Maintaining egg quality in the poultry houseTransporting hatching eggsEgg selection and handling prior to incubationWarming egg prior to incubationReducing bacterial contamination of eggsFertility; Mating and inseminationSurvival and activity (transport) of spermatozoa in the oviduct and FertilizationEmbryo development			
C-Artificial Incubation and Hatchability	8	4	4
<ul style="list-style-type: none">Temperature and HatchabilityHumidity and Hatchability.Water Content and Distribution in the EggTurning and HatchabilityGas Concentration and Hatchability.			
D. Brooder and Growing Management	6	3	3
<ul style="list-style-type: none">Brooder House and Growing HousePreparing for the Chicks and How many ChicksBrooding requirements and Water and FeedWhen the chicks arrive and Larger equipmentDebeaking and jobs During brooding period			
E. Growing Equipment and Cleaning	6	3	3
<ul style="list-style-type: none">The Growing House and its ventilationLitter Management For Coccidiosis ControlPreventing CannibalismSanitation, disease and rodent controlFeeding during the growing periodSelecting Meat-type Breeder Birds.Lighting and Record Keeping			
F. Laying Management and Breeder Management	8	4	4
<ul style="list-style-type: none">The laying house and Preparing for the PulletsSelecting egg production pullets and Space Requirements for LayersHouse equipment and Equipment Requirements for Layers.Body weight at Sexual maturityManaging and Feeding the layers			
G. Breeder management	8	4	4
<ul style="list-style-type: none">Practices necessary during production period on litter floor and managing males for high fertilityLighting and Feeding the BreedersHatching egg productionVaccination and medicationBest Age for first eggs from meat-type broiler breedersBest age for first eggs from egg type breeders			
H. Management of Broilers	6	3	3

<ul style="list-style-type: none"> ▪ Broiler growing programs and housing ▪ Broiler growing equipment and selecting chicks ▪ Managing Broilers on litter ▪ lighting management ▪ Growth and Feed consumption ▪ Measuring broiler growing efficiency ▪ Feeding broilers and getting broiler to market ▪ Facts about bruises 			
I. Lighting Management	2	1	1
<ul style="list-style-type: none"> ▪ Facts about the light and egg formation: ▪ Light Effects During Growing ▪ Instructions For Growing and laying Light ▪ Intermittent Light For Pullets Producing Eggs 			
2nd Semester			
J. Quality of Table Egg	4	2	2
<ul style="list-style-type: none"> ▪ Measures of egg quality with reference to market desirability ▪ External appearance ▪ Candling ▪ Quality of opened eggs ▪ Deterioration of Egg quality ▪ Keeping Quality of Table egg 			
K. Rabbit breeding and production	8	4	4
L. Brooding, growing and rearing of Japanese quails.	5	3	2
M. Brooding, growing and rearing of turkey	5	3	2
N. Brooding, growing and rearing of Ostrich	5	3	2
O. Brooding, growing and rearing of water fowls (ducks and geese)	5	3	2
P. Brooding, growing and rearing of pigeons.	5	3	2
II. Poultry Breeding:			
A. Genetic parameters	10	5	5
<ul style="list-style-type: none"> ▪ Heritability (definition, estimation & application) ▪ Repeatability (definition, estimation & application) ▪ Genetic correlation (definition, estimation & application) 			
B. Selection:	9	5	4
<ul style="list-style-type: none"> ▪ One trait ▪ More than one traits (TS, ICL, SI) ▪ Selection direct and indirect responses 			
C. Breeding for disease resistance and immune responsiveness	4	2	2
Total	120	63	57

4. Teaching and Learning Methods:

- 4.1 Lectures with the help of data show and power point slide show
- 4.2 Discussions and Class activities
- 4.3 Small poultry farm project models training and hatchers training
- 4.4 Internet data collection and within class discussions
- 4.5 Seminars by student groups

5. Student Assessment Methods:

Exam		
5.1	Class test (1)	To assess understanding
5.2	Class test (2)	To assess understanding and follow up the under score of the first test.
5.3	Written Mid-term	To assess student understanding of the taught topics and practical application in solving problems
5.4	Written Final-term	To assess student understanding of the taught topics and practical application in solving problems concerning the whole term studied materials.
5.5	Practical Final-term	To assess student skills in practical applications.
5.6	Oral Final-term	To assess both theoretical and practical knowledge and how to deal with the owners.

Assessment Schedule (in each semester):

	Exam	Week
Assessment 1	Class test (1)	4 nd
Assessment 2	Class test (2)	6 th
Assessment 3	Written Mid-term	8 th
Assessment 4	Written Final-term	16 th
Assessment 5	Practical Final-term	16 th
Assessment 6	Oral Final-term	16 th

Weighing of assessments (in each semester):

	Exam	Per Semester (%)	Total (%)
Assessment 1	Class test (1)	2.5	5
Assessment 2	Class test (2)	2.5	5
Assessment 3	Written Mid-term	5	10
Assessment 4	Written Final-term	25	50
Assessment 5	Practical Final-term	10	20
Assessment 6	Oral Final-term	5	10
	Total	50	100

6. List of References:

6.1. Course Notes:

- Poultry Production (lectures and practice)
- Poultry Breeding and improvement (lectures & practice)

6.2. Essential Books:

- **Poultry Production.1990.** R.E. Austic and M.C. Nesheim. Lea & Febiger, Philad. P.A.
- **Poultry Science and Production. 1985.** R.E. Moreng and J.S. Avens. Reston Publ. Co., Inc., Reston, VA.
- **Introduction to Quantitative Genetics,** D. Falconer and T. Mackay. 1996; 4th Ed.
- **Poultry genetics, breeding and biotechnology.** W. M. Muir and S.E. Aggrey 2003. Library of Congress Cataloguing - in- Publication Data.

6.3. Recommended Books:

- **Commercial Chicken Production Manual.** North, M.O. 1978. Second Edition. AVI Publishing Company, West Port. Connecticut
- **Poultry Breeding and Genetics (1990).** Crawford R.D. El-Sevier Science Pub., B.V.
- **Animal Breeding 2001.** Use of New Technologies.; B. Kinghorn, J. van der Werf, and M. Ryan. Twynam Press.

6.4. Periodicals, websites, etc

- Egyptian poultry science
- Poultry science (national)
- British poultry science
- World poultry science
- Web sites related to the program contents

7. Facilities Required for Teaching and Learning

- Small group of students.
- Up- to- date references in library.
- Well equipped poultry houses and rearing pens
- Hatching units and pedigree equipments.
- Medium size flocks of chicken, turkey, ducks, geese, quail, rabbits, and pigeon.

Course Coordinator: D.M. Eleedel

Head of Department: Prof.Dr. Usama Mahrous

Date: