DIPLOMA IN BROILER BREEDER PRODUCTION AND MANAGEMENT

Curriculum & Scheme of Examination

Academic Year 2016-2017 onwards
### BHARATHIAR UNIVERSITY
COIMBATORE- 641 046

CENTRE FOR COLLABORATION OF INDUSTRY AND INSTITUTION (CCII)

DIPLOMA IN BROILER BREEDER PRODUCTION AND MANAGEMENT

*(For the CCII candidates admitted from the Academic Year 2016-2017 onwards)*

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<tr>
<th>Sl. No.</th>
<th>Name of the Course</th>
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<td>1</td>
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<td>Chicken Basic Anatomy and Physiology</td>
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<td>Breeder Flock Health and Biosecurity</td>
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<td>Breeder Housing and Environment</td>
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<td>Management of Breeder Replacement Stock</td>
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<td>Practical I</td>
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<td>Breeder Flock and Hatchery Management</td>
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<td>Breeder Nutrition and Feed Mill Technology</td>
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<td>13</td>
<td>In-Plant Training (3 months in Industry)</td>
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<td><strong>TOTAL</strong></td>
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SEMMESTER - I

1 – GROWTH OF POULTRY INDUSTRY

Total Marks: 100
Total Hours: 60

Objective:

To understand the poultry industry based on the past, present and emphasis of future growth.
To study the statistical data and various functions involved in poultry industry.

UNIT-I (12 HRS)


UNIT-II (12 HRS)

Genetic Classification of Chicken and other species of Poultry- Layers, Broiler, and other class of Poultry – Hybrids available and its merit and demerits- American, English, Mediterranean, Asiatic, Indian breeds, dual purpose breeds and non-descript birds.

UNIT-III (12 HRS)

Importance of Broiler and Layer production under Indian scenario - Poultry population and other Poultry related statistics, per capita meat and egg availability in India -different regions and States and in World.

UNIT-IV (12 HRS)

System of rearing- range- semi intensive- intensive rearing, advantages and disadvantages.
Introduction to rearing of Turkeys, Ducks, Japanese Quails, Guinea fowls and Geese for meat and egg production.

UNIT-V (12 HRS)

Regional influences, Structure of poultry industry – breeder farm, hatcheries, commercial farms, feed mills and processing industry. Backyard to industrial farming of poultry, future perspective and constraints of Indian poultry industry.

Text Book

References

SEMESTER - 1

2 – CHICKEN BASIC ANATOMY AND PHYSIOLOGY

Total Marks: 100
Total Hours: 60

Objectives:
To study the internal and external body parts of chicken for understanding the various functions. To examine birds for handling, selection, culling, judging and diagnosis of disease.

UNIT-I

Introduction to Anatomy and Physiology. Integumentary parts of chicken - Feather patterns - feather tracts - feather sexing of day old chicks. Comb and its different types. Role of skin, scales, nails, plumage and beak. Physiological standards in poultry.

UNIT-II

Respiratory system-anatomical structures-nasal cavity, larynx, syrinx, trachea, bronchi, lungs, air sacs- and its function, inhalation and exhalation process. Circulatory system-structure, functions of heart, types of blood vessels and components of blood.

UNIT-III

Skeletal system-different types of bones-pneumatic, medullary, cervical, thoracic, fused, wing and limb bones. Excretory system-Role of kidney, ureter and cloaca.

UNIT-IV


UNIT-V

Nervous system - Endocrine system - Protein and steroid hormones-role of hypophysis, neurohypophysis, adrenal glands, pancreas, testis, ovary and pineal gland. Immune system- definition, different organ and its functions - bone marrow, bursa of Fabricius, thymus, harderian gland, spleen, payers patches and gut associated lymphoid tissues (GALT).

Text Books

References

SEMESTER I

3 – BREEDER FLOCK HEALTH AND BIOSECURITY

Total Marks: 100 Total Hours: 60

Objectives:
To make the student aware about the process and principle involved in the biosecurity aspects of poultry to have ethical rules and regulations and methods to maintain flock health.

UNIT I

(12 HRS)

Vaccination principles, Broiler breeder vaccination schedule - type, methods, pre and post vaccination care, vaccination failure. Immunity.

UNIT II

(12 HRS)

Medication - types of administration – general principles and precautions of medication through water and feed.

UNIT III

(12 HRS)

Signs of disease – Measures to prevent disease outbreak – fly and rodent control – general farm hygiene – sanitation procedures – quarantine, isolation, shed cleaning and disinfection procedures.

UNIT IV

(12 HRS)

Litter, carcass and hatchery waste disposal. water sanitation – sanitizers, disinfection - types of disinfectants, mode of action, recommended procedure, precaution and handling.

UNIT V

(12 HRS)

Biosecurity – Proactive measures to minimize entry of infection vs agents, farm premises – farm fencing – disinfectant, pits, personnel management and restriction of movement – conceptual (isolation), structural and operational (sanitation) biosecurity in poultry farms.

Text Book
Diploma in Broiler Breeder Production and Management under CCII Programme – 2016-17 onwards

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References

SEMESTER - I

4 – BREEDER HOUSING, EQUIPMENT AND ENVIRONMENT
Total Marks: 100 Total Hours: 75

Objective:
To make the students aware about the basic concepts of poultry houses, their construction, materials for construction, equipments required for rearing and various automation techniques used in industry.

UNIT-I (15 HRS)
System of rearing-backyard system, semi-intensive system, intensive system-cage, deep litter and slat system, floor space, watering and feeding space requirements for different age groups under different rearing conditions.

UNIT-II (15 HRS)
Selection of site and location of poultry farm – importance of poultry housing and equipment. Principles of housing – location of poultry houses – basic principles of construction of poultry houses.

UNIT-III (15 HRS)
Types of houses: environmentally controlled houses and open sided houses– deep litter, slat system, wire floor, cage houses and raised platform cage houses. Cages –types of cages –flat deck, Californian cages, “A” type cages, tier cages and furnished cages.

UNIT-IV (15 HRS)
Fundamentals of ventilation-ventilation system – tunnel ventilation, duct ventilation and windowless house. Types of roof and materials used. Insulating materials for poultry houses-R-Value. Poultry farm equipments – brooding, feeding and watering equipments, nest boxes filler flats, vaccinators, dubbing, debeaking, and other equipments.
UNIT-V (15 HRS)


Textbook


References


SEMESTER I

5 – MANAGEMENT OF BREEDER REPLACEMENT STOCK

Total Marks: 100
Total Hours: 75

Objectives:

To make the student understand about the basic management skills and practices involved in Breeder farms.

UNIT I (15 HRS)

Size and structure of breeding industry – Commercial strains of broiler and layer, breeder – production standards.

UNIT II (15 HRS)

Layout and location of breeder farm - housing and equipment – important economic traits of broiler and layer, preparation house to receive chick, brooding chick management, breeder grower management, floor space, water space, feeder space, litter materials management

UNIT III (15 HRS)

Selection of breeder flock – pre-laying and laying management of breeder flocks - broiler chicks grower and layers in cages, slat, slat cum deep litter and deep litter houses – breeder male and female management. Pre-peak, peak and post-peak laying period management.

UNIT IV (15 HRS)

Special care of breeder flock – semen collection-artificial insemination; water sanitation – watering of breeders, seasonal management of breeder flocks – summer, winter and monsoon.
UNIT V (15 HRS)

Text Book

References

SEMESTER - I

PRACTICAL – I
Total Marks: 100

Objectives:
To understand the growth of broiler breeder industry and their management.

1. Broiler breeder shed designs, layout and area calculation
2. Broiler breeder equipments, feeder and drinker system
3. Housing for breeder growing – deep litter, cage, slat floors
4. Water sample collection-pH and hardness measurement
5. Practical examination of dead birds – digestive, respiratory, circulatory and immune system.
6. Practical examination of dead birds – skeletal, excretory, male and female reproductive system
7. Biosecurity measures - Foot dip, vehicle, human spray and disinfectants (Demo)
8. Breeder shed cleaning procedure – fumigation, floor, side wall, roof, pipeline, drinker and feeder cleaning and flame gun operation (Demo)
9. Vaccination & medication – route and dosage calculations
10. Day old chicks weighment, chick placement and chick comfort
11. CV% calculation, debeaking and dubbing
12. Grading and weak bird management
13. Weekly body weight monitoring, lighting and male management
14. Feeder and drinker management in age wise, water sanitation
15. Semen collection and artificial insemination

**SEMESTER II**

6 – BREEDER FLOCK AND HATCHERY MANAGEMENT

Total Marks: 100  
Total Hours: 60

**Objectives:**

To make the student study about the various types of incubation methods, conditions and equipments required at the breeder farm and hatcheries and develop skills for working as well as managing at different levels of hatchery for providing good hatchability.

**UNIT-I**  
(12 HRS)

Layout, design and location of hatchery; Methods of incubation; Physical requirements of incubation – collection, selection, cleaning and sanitation of eggs. Storage of hatching eggs – incubation methods – single and multistage incubators. Development of chick embryo.

**UNIT-II**  
(12 HRS)

Hatchery operations – setting, candling, transfer, hatching, pedigree hatching, chicks pull out, grading, packing and chick dispatch – In-ovo and in-hatch vaccinations and medications.

**UNIT-III**  
(12 HRS)

Incubation principles and physical factors required for incubating eggs – temperature, humidity, gaseous environment, position and turning of eggs.

**UNIT-IV**  
(12 HRS)

Role of computer in modern hatchery operations – quality control. Major cause of eggs failing to hatch – Post hatch break open study.

**UNIT-V**  
(12 HRS)

Textbook

References

SEMESTER – II
7: BREEDER LAYER MANAGEMENT
Total Marks: 100
Total Hours: 60
Objectives:
To make the student understand about the fundamental principles involved in Layer Production.

UNIT I

UNIT II
Broiler breeder farm equipments. Brooder, grower and layer management – All in – all out system – multiple batch system – Pre-laying and laying management – feeding types, layers in cages, slat, slat cum deep litter and deep litter houses, Nest box management – male and female management.

UNIT III

UNIT IV
Breeder farm operation and routine, Management of breeders for optimal egg production, Breeder farm records. Biosecurity, vaccination and medication schedule.
UNIT V

(12 HRS)

Seasonal management of breeder birds – summer, winter and monsoon. Environmentally controlled sheds – design, equipments and productivity.

Text Book


References


SEMESTER II

8 – BREEDER NUTRITION AND FEED MILL TECHNOLOGY

Total Marks: 100
Total Hours: 75

Objectives:

To make the student to understand about the basic principles of nutrition and different kinds of feeds and their feeding methods in poultry.

UNIT-I

(15 HRS)

Nutrient requirements and feeding for broiler breeder. Classification of feed ingredients-conventional feeds and non-conventional poultry feeds-energy sources, vegetable protein sources, animal protein sources.

UNIT-II

(15 HRS)

Feed ingredients, composition, feed storage technique – milling and quality control, processing of feed – types & forms of feeds— mash, pellet & crumble feed preparation and feeding methods. Feeding chicks, growers, layers, broiler and breeders –feeding in different seasons.

UNIT-III

(15 HRS)


UNIT-IV

(15 HRS)

Feed mill design and equipments –feed production methods – grinding, mixing, condition, pelletizing, crumbling, sieving process and premixing methods, feed storage – weighment - transport.

UNIT-V

(15 HRS)

Physical and sensory evaluation of feed ingredients – sampling techniques for ingredients and compounded feed – estimation of proximate principles of feed and feed ingredients –commonly
occurring anti nutrients and toxicants in poultry feed ingredients – Mycotoxins and their prevention.

**Textbook**


**References**


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**SEMESTER II**

### 9 – BREEDER DISEASES

**Total Marks: 100**

**Total Hours: 75**

**Objectives:**

*To make the student aware about the various pathogenic microorganisms affecting the poultry species, their route of entry, symptoms, diagnosis and various prevention and control measures.*

**UNIT I**


**UNIT II**

Viral Diseases – etiology, host and transmission, signs, morbidity and mortality, gross lesions, diagnosis, treatment, prevention and control – ND or RD, IBD, IB, ILT, MD, LL, AI, AE, Fowl pox.

**UNIT III**

Bacterial diseases – etiology, host and transmission, signs, morbidity and mortality, gross lesions, diagnosis, treatment, prevention and control – Colibacillosis, CRD – Mycoplasmosis, Salmonellosis - Fowl typhoid, Pullorum disease, Fowl Cholera, Infectious Coryza and Omphalitis.

**UNIT IV**

UNIT V (15 HRS)


Text Book

References

SEMESTER II

10 – BREEDER ECONOMICS AND MARKETING

Total Marks: 100
Total Hours: 75

Objectives:
To impart the knowledge of various economic principles involved in poultry and the marketing strategies followed along with mathematical and statistical tools used in poultry.

UNIT I (15 HRS)
Economics of poultry production – analysis of production cost, methods and criteria for cost calculation, broader economic framework for analysis. Marketing – definition and activities, objectives of poultry marketing.

UNIT II (15 HRS)
Marketing of eggs, organizational structure of egg marketing – NECC, ACIL, NAFED, challenges and suggestions. Marketing of poultry meat, Organizational structure of poultry meat marketing – BROMARK, BCC, NMPPB, Marketing channels for poultry meat, challenges, suggestions and opportunities for marketing of poultry products.

UNIT III (15 HRS)
Breeder cull bird, hatching eggs and rejected eggs – marketing methods and cost, Income generation to farmer – Selling – poultry manure, used gunny bags.
UNIT IV  
(15 HRS)  

UNIT V  
(15 HRS)  
Breeder production parameters (visual control system – graph and schedule display), weekly, monthly, yearly and batch wise budget and report preparation.

Text Book  

References  

SEMESTER II  
PRACTICAL II  
Total Marks: 100

Objectives:  
To enable the students to understand and have hands on experience in basic techniques involved in broiler breeder management.

1. Farm visit – Breeder layer farm design and layout (Demo)  
2. Breeder feeds and feeding practices (Demo)  
3. Feed mill visit – design, layout, equipments and feed manufacturing (Demo)  
4. Brooding, growing and laying management - selection and culling – identification of laying, non-laying, good and poor layer birds (Demo)  
5. Nest box and lighting management  
6. Farm visit – Hatching eggs – collection, selection, rejection, grading and disinfection, flame gun operations procedure (Demo)  
7. Farm visit – Fumigation, storage and packaging of hatching eggs (Demo)  
8. Hatchery visit - design, layout and equipments (Demo)
9. Candling, setting and transfer to hatcher – incubation operations and pull out
10. Day old chick sexing methods, fertile and total hatchability% calculation
11. Post mortem diagnosis and microbiological test
12. Vaccination and medication - deworming and dipping – route and dosage calculation
13. Cost of production/ bird – Brooding, growing and laying period
14. Calculations – Mortality%, Livability%, FCR for eggs, HD%, HE%, HHHE%, HHE%, Egg Mass, chick per parent (CPP)
15. Breeder farm record, register and visual control system – graph and schedule preparation

**SEMESTER II**

**IN-PLANT TRAINING AND VIVA VOCE**

Total Marks: 100

**DIRECTIONS**

- Students are allocated at different sectors of Poultry Industries located at different places of India. They will be assigned under a Farm supervisor in their location and will be doing the practical training work for a period of three months.
- The students should have complete attendance for the period of their in-plant training which will be sent by the Manager or Farm Incharge from their location.
- After three months the students will prepare an in-plant training project report which will be evaluated by the Faculty at the SIPM along with External Examiner.