

ALAGAPPA UNIVERSITY

(Accredited with A+ Grade by NAAC (CGPA : 3.64) in the Third Cycle ,
Graded as Category-I University and granted autonomy by MHRD-UGC)

DIRECTORATE OF COLLABORATIVE PROGRAMMES



Diploma in Commercial Broiler Production Management

Regulations and Syllabus

[For those who join the Course in July 2023 and after]

CHOICE BASED CREDIT SYSTEM

**SUGUNA INSTITUTE OF POULTRY MANAGEMENT
UDUMALPET - 642 207**

REGULATIONS AND SYLLABUS

Name of the Institution: Suguna Institute of Poultry Management

Vision and Mission of the Institutions:

VISION

Planned education contributes to increase in the cultural richness, positive attitude towards technology, increases efficiency, opens new horizons for an individual, provides new aspirations and develop new values.

MISSION

The mission is to help rural students, educators, scholars and researchers, and to advance the profession of education, through research on the science and art of teaching and learning, the application.

Name of the Subject Discipline: Diploma in Commercial Broiler Production Management
Programme of Level: Diploma

1. Choice-Based Credit System

A Choice-Based Credit System is a flexible system of learning. This system allows students to gain knowledge at their tempo. Students shall decide on electives from a wide range of elective courses offered by the Departments/institutions in consultation with the committee. Students undergo additional courses and acquire more than the required number of credits. They can also adopt an inter-disciplinary and intra-disciplinary approach to learning, and make the best use of the expertise of available faculty.

2. Programme:

“Programme” means a course of study leading to the award of a Diploma in Commercial Broiler Production Management, is a diploma programme and duration is one year that spread over two semesters. The course deals with the study about Commercial Broiler Chicken Production Management

3. Courses

‘Course’ is a component (a paper) of a programme. Each course offered by the Department is identified by a unique course code. A course contains lectures/ tutorials/laboratory work/seminars/project work / practical training/report writing /Vivavoce, etc, or a combination of these, to meet effective teaching and learning needs.

4. Credits

The term “credit” refers to the weightage given to a course, usually about the instructional hours assigned to it. Normally in each of the courses credits will be assigned based on the number of lectures/tutorials/laboratory and other forms of learning required to complete the course contents in a 15-week schedule. One credit is equal to one hour of lecture per week. For laboratory/field work one credit is equal to two hours.

5. Semesters

An academic year is divided into two Semesters. In each semester, courses are offered in a minimum of 15 teaching weeks and the remaining 3-5 weeks are to be utilized for conduct of examination and evaluation purposes. Each week has 30 working hours spread over 5 days a week.

6. Departmental/institutional committee

The Departmental/Institutional Committee consists of the faculty of the Department/institution. The committee shall be responsible for admission to all the programmes offered by the Department including the conduct of entrance tests, verification of records, admission, and evaluation. The committee determines the deliberation of courses and specifies the allocation of credits semester-wise and course wise. For each course, it will also identify the number of credits for lectures, tutorials, practicals, seminars, etc. The courses (Core/Discipline Specific Elective/Non-Major Elective) are designed by teachers and approved by the Committees. Courses approved by the committees shall be approved by the Board of Studies. A teacher offering a course will also be responsible for maintaining attendance and performance sheets (CIA -I, CIA-II, assignments, and seminar) of all the students registered for the course. The department coordinators for Non-major elective (NME) and MOOCs (SLC) courses are responsible to submit the performance sheet to the Head of the department. The Head of the Department consolidates all such performance sheets of courses about the programmes offered by the department. Then forward the same to be Controller of Examinations.

7. Programme General Objectives - (PGO)

PGO-1	To Start Diploma Programme in the area of Broiler production technology
PGO-2	To fulfill the demand for the ever growing poultry sector by skilled man power
PGO-3	To educate the rural youths in the area for better employment opportunities
PGO-4	To bridge the gap of demand on changing scenario in Poultry sector requirements through quality education
PGO-5	To develop entrepreneurs in the area of poultry Production and Management

8. Programme Specific Objectives-(PSO)

PSO-1	To educate the student with all scientific information and advancements in Broiler Housing, Equipment and Automation.
PSO-2	To impart in- depth knowledge in Chicken Anatomy, Incubation and Hatchery Management.
PSO-3	To develop the students to become an expert in Broiler chicken Management.
PSO-4	To provide an in - depth knowledge on various diseases of Broiler chicken and its management.
PSO-5	To make the students to undergo in - plant training to learn daily routines of the farm and also involved in skilled operations.

9. Programme Outcome-(PO)

PO-1	Students will be able to understand the various rearing systems followed in the poultry farming.
PO-2	Students will be able to know about the basic concepts of poultry housing, equipment and automation required for rearing of chicken.
PO-3	Understand the basic anatomical structure and functions of Poultry.
PO-4	Create skill in the field of feed milling technology to improve the employment opportunities.
PO-5	Students are familiar with good laboratory practices on the estimation of proximate analysis and acquire basic skill on feed formulation
PO-6	On the successful completion of the course the students will able to understand the Broiler chicken industry.
PO-7	Analyze the performance monitoring of the Broiler chicken for production augmentation.
PO-8	Gain information on bacterial, viral, fungal and parasitic diseases of poultry and their control measures.
PO-9	Develop the attitude in the basic biosecurity measures, medication and vaccination schedules to be followed in the Broiler farm.
PO-10	Implement the skill in incubation and hatchery management and its operations.
PO- 11	Gain knowledge in farm, hatchery, feed mill practices and acquire basic skill on laboratory techniques.

10. Programme Specific Outcome-(PO)

PO-1	Enrich the knowledge level on all scientific information and advancements in Broiler Housing, Equipment and Automation.
PO-2	Gain in- depth knowledge in Chicken Anatomy, Incubation & Hatchery Management.
PO-3	Supply skilled technocrats to the broiler chicken industry.
PO-4	Gain relevant knowledge on various diseases of broiler chicken and its management.
PO-5	By undergoing in - plant hands on training, the students are familiar with broiler production activities.

11. Eligibility for admission

A minimum pass in Higher Secondary Examination (HSC)/PUC/Intermediate or Equivalent, or an examination accepted as equivalent thereto by the Syndicate for admission to Diploma in Commercial Broiler Production Management.

12. Minimum Duration of Programme:

The programme is for One year and shall consist of two semesters viz. Odd and Even semesters. Odd semesters shall be from June / July to October / November and even semesters shall be from November / December to April / May. Each semester there shall be 90 working days consisting of 6 teaching hours per working day (5 days /week).

The course shall extend over a period of Three years under the Semester pattern.

13. Medium of instruction

The medium of instruction is English.

14. Teaching Methods

The classroom teaching would be through conventional lectures, the use of Power Point presentation, and novel innovative teaching ideas like television, smart board, and computer aided instructions. Periodic field visit enables the student for gathering practical experience and up-to-date industrial scenario. Student seminars would be arranged to improve their communicative skills. In the laboratory, safety measures instruction would be given for the safe handling of chemicals and instruments. The lab experiments shall be conducted with special efforts to teach scientific knowledge to students. The students shall be trained to handle advanced instrumental facilities and shall be allowed to do experiments independently. The periodic test will be conducted for students to assess their knowledge. Slow learners would be identified and will be given special attention by remedial coaching. Major and electives would be held in the Department and for Non-major electives students have to undertake other subjects offered by other departments.

15. Components

A Diploma in Commercial Broiler Production Management programme consists of several courses. The term “course” is applied to indicate a logical part of the subject matter of the programme and is invariably equivalent to the subject matter of a “paper” in the conventional sense. The following is the various category of the courses suggested for the programmes:

Core courses (CC) - “Core Papers” means “the core courses” related to the programme concerned including practicals and project work offered under the programme and shall cover core competency, critical thinking, analytical reasoning, and research skill.

Course Credits

Each student should have taken **36** credits as a core course, including project work, thus totaling least **36** credits required to complete the Diploma in Commercial Broiler Production Management course.

Attendance:

Students must have earned 75% of attendance in each course for appearing on the examination. Students who have earned 74% to 70% of attendance need to apply for condonation in the prescribed form with the prescribed fee. Students who have earned 69% to 60% of attendance need to apply for condonation in the prescribed form with the prescribed fee along with the Medical Certificate. Students who have below 60% of attendance are not eligible to appear for the End Semester Examination (ESE). They shall re-do the semester(s) after completion of the programme.

Examination

The examinations shall be conducted separately for theory and practicals to assess (remembering, understanding, applying, analyzing, evaluating, and creating) the knowledge required during the study. There shall be two systems of examinations viz., internal and external examinations. The internal examinations shall be conducted as Continuous Internal Assessment tests I and II (CIA Test I & II).

A. Internal Assessment

The internal assessment shall comprise a maximum of 25 marks for each course. The following procedure shall be followed for awarding internal marks.

Theory - 25 marks

Sr. No.	Content	Marks
1	Average marks of two CIA tests	15
2	Seminar / group discussion / quiz., etc.,	5
3	Assignment /field trip report / case study reports	5
	Total	25

Practical - 25 marks

Sr. No.	Content	Marks
1	Average marks of two CIA tests (Practical) Experiments - Major, Minor and Spotter	15
2	Observation note book	10
	Total	25

B. External Examination

- There shall be examinations at the end of each semester, for odd semesters in October / November; for even semesters in April / May.
- A candidate who does not pass the examination in any course (s) may be permitted to appear in such failed course (s) in the subsequent examinations to be held in October / November or April / May. However, candidates who have arrears in practical shall be permitted to take their arrear Practical examination only along with regular practical examination in the respective semester.
- A candidate should get registered for the first - semester examination. If registration is not possible owing to a shortage of attendance beyond the condonation limit / regulation prescribed or belated joining or on medical grounds, the candidates are permitted to move to the next semester. Such candidates shall re-do the missed semester after completion of the programme.
- For the Dissertation Work, the maximum marks will be 100 marks for thesis evaluation and the Viva-Voce 50 marks.
- For the internship, the maximum mark will be 50 marks for project report evaluation and for the Viva-Voce it is 25 marks
- Viva-Voce: Each candidate shall be required to appear for the Viva-Voce Examination (in defense of the Dissertation Work/internship).

Passing minimum

- A candidate shall be declared to have passed each course if he / she secures not less than 40% marks in the End Semester Examinations and 40% marks in the Internal Assessment and not less than 40% in the aggregate, taking Continuous assessment and End Semester Examinations marks together.
- The candidates not obtained 40% for the Internal Assessment are permitted to improve their Internal Assessment marks in the subsequent semesters (2 chances will be given) by writing the CIA tests and by submitting assignments.
Candidates, who have secured the pass marks in the End-Semester Examination and the CIA but failed to secure the aggregate minimum pass mark (E.S.E + CIA), are permitted to improve their Internal Assessment mark in the following semester and/or in University examinations.
- A candidate shall be declared to have passed the Project Work if he /she gets not less than 40% in each of the Project Report and Viva-Voce and not less than 40 % in the aggregate of both the marks for Project Report and Viva-Voce.

A candidate who gets less than 40% in the Project Report must resubmit the Project Report. Such candidates need to take again the Viva-Voce on the resubmitted Project.

Each student should have taken 36 credits as a core course, Internship course (core), thus totaling least 36 credits required to complete the Diploma in Commercial Broiler Production Management course.

**DIPLOMA IN COMMERCIAL BROILER PRODUCTION MANAGEMENT
PROGRAMME STRUCTURE**

Sem	Course Code	Title of the Paper	T/P	Credit	Hrs./ Week	Max. Marks		
						Int.	Ext.	Total
I	80311	Broiler Housing, Equipment and Automation	T	4	6	25	75	100
	80312	Commercial Broiler Chicken Management	T	3	4	25	75	100
	80313	Chicken Anatomy, Incubation and Hatchery Management	T	3	4	25	75	100
	80314	Practical in Broiler Housing and Management	P	4	8	25	75	100
	80315	Inplant Training	I	4	8	25	75	100
Total				18	30	125	375	500
II	80321	Broiler Nutrition and Feed Milling Technology	T	4	6	25	75	100
	80322	Broiler Flock Health, Diseases and Bio-security	T	3	4	25	75	100
	80323	Broiler Processing and Marketing	T	3	4	25	75	100
	80324	Practical in Broiler Nutrition, Disease management and Processing	P	4	8	25	75	100
	80325A 80325B	Project Work – In-plant Training	PR/ I	4	8	25	75	100
	Total				18	30	125	375
Grand Total				36	60	250	750	1000

T – Theory

P – Practical

Minimum Credit = 36

1credit = 1 hour for Theory Paper

1credit = 2 hours Practical Paper

Semester - I					
Course code:	80311	Broiler Housing, Equipment and Automation	T	Credits: 4	H/W: 6
Objectives	<ol style="list-style-type: none"> 1. To study the Overview of Broiler Industry. 2. To study management systems followed in broiler management. 3. To make the students to aware about the basic concepts of broiler housing and equipment required for rearing of chicken. 4. To make the student to understand about the various brooding, feeding, watering, litter management and other skills involved in broiler production. 5. To study about automation in broiler production. 				
Unit -I	Systems of rearing: Common Terminology - Broiler Industry in India - Systems of Poultry rearing – Broiler Housing System - Deep litter, Slatted floor and Cage system of Management - Floor space, watering and feeding space requirements of Broilers				
Unit -II	Broiler farm location and layout: Broiler farm location and layout – Macro and Micro environment – Comfort zone - Water quality - Importance of poultry housing and equipment - Principles of poultry house construction				
Unit-III	Broiler housing system: Types of broiler houses - Open sided and closed sided poultry houses - Lay out and construction – Environmentally controlled housing system - Fundamentals of ventilation - Ventilation system - Tunnel ventilation, duct ventilation - Insulating materials for poultry houses - R-Value - Types of roof and roofing materials – Litter materials for poultry housing				
Unit-IV	Broiler farm equipment: Broiler farm equipment – Brooding equipment - Feeding and Watering equipment – Weighing scales - Vaccinators - Broiler cages – Foggers – Sprinklers – Curtains				
Unit-V	Broiler farm automation: Introduction – Concept and Application of automation in poultry industry - Climate control system – Automation in feeding and Drinking system – Automation in meat processing plant – Automation in feed production				
Reference and Textbooks:					
Hurd M. Louis, 2003. Modern Poultry Farming.1st Edition. International Book Distributing Company, Lucknow. Jadhav N. V., and Siddique M. F., 2007. Handbook of Poultry Production and Management.2nd Edition. Jaypee Brothers Medical Publishers Pvt. Ltd., New Delhi. Sreenivasaiyah, P. V., 2015. Textbook of Poultry Science. 1st Edition. Write & Print Publications, New Delhi Sreenivasaiyah, P. V., 2006. Scientific Poultry Production-A unique encyclopedia. International Book Distributing Co., Lucknow, India Suguna Management System: Standard Operating Manual – Feed Lab, 2012. Suguna Foods Pvt. Ltd.					
Outcome:					
On the successful completion of the course, <ol style="list-style-type: none"> 1. Students will be able to understand about broiler Industry. 2. Students will be able to understand the various rearing systems followed in the poultry rearing. 3. Students will be able to know about the basic concepts of broiler housing, equipment and automation required for rearing of chicken. 4. Students will be able to understand about the various brooding, feeding, watering, litter management and other skills involved in broiler production. 5. Students will be able to understand about the automation in the broiler production. 					

Semester - I					
Course code:	80312	Commercial Broiler Chicken Management	T	Credits: 3	H/W: 4
Objectives	1. To understand the overview of broiler industry. 2. To know the care and management of broiler chicks. 3. To understand the growing and finisher management of broilers. 4. To provide in depth knowledge broiler production performance. 5. To provide in depth knowledge on broiler feeding and seasonal Management.				
Unit -i	Overview of Broiler Production: Terminology in Broiler Production- Overview of Broiler Industry- Role of government and NGOs, BCC, NMPPB in broiler production. System of rearing - All in - all out and multiple batch system. Bio-security - System of integration. Commercial Strains of Broiler.				
Unit -II	Brooding Management: Preparation of house to receive day old chicks- Brooding – Chick receiving, Temperature and Relative Humidity, Feeding, Crop Score assessment - Watering and Lighting - Curtain Arrangements				
Unit-III	Grower and Finisher Management: Growing – Feeder and Drinker Management - Bodyweight monitoring - Litter material and Management - Finisher Management - Feeder and Drinker arrangement- – Bodyweight monitoring .				
Unit-IV	Broiler Feeding: Water Management - quality, sanitation – Pipeline and Tank Cleaning- Drinker maintenance. Feed Management – physical form of feed – Mash, Crumble, Pellet. Types of Feed – Feeder maintenance - Seasonal Management – Summer, Winter and Monsoon.				
Unit-V	Performance Monitoring Parameters: Performance parameter Monitoring – Feed conversion Ratio(FCR) - Livability, European Efficiency Factor(EEF), Production Cost - Converted Feed Conversion Ratio (CFCR)- Day gain(Body weight) - Lifting efficiency				
Bell D. Donald and Weaver D. William Jr., 2007. <i>Commercial Chicken Meat and Egg Production</i> . 5 th Edition. Springer India Pvt. Ltd., Noida. Charles Burr, T., and Stuart O. Homer, 2011. <i>Commercial Poultry Farming</i> . 1 st Edition. Biotech Books, New Delhi. Jadhav N. V., and Siddique M. F., 2007. <i>Handbook of Poultry Production and Management</i> . 2 nd Edition. Jaypee Brothers Medical Publishers Pvt. Ltd., New Delhi. Narahari D., and Kumararaj R., 2008. <i>Handbook of applied Broiler Production</i> . 1 st Edition. Poultry Punch Publication (I) Pvt. Ltd., New Delhi. Sreenivasaiyah., P. V., 2015. <i>Textbook of Poultry Science</i> . 1 st Edition. Write & Print Publications, New Delhi Suguna Management System: <i>Standard Operating Manual – Broiler, 2012</i> . Suguna Foods Pvt. Ltd.					
On successful completion of the course, the students could <ol style="list-style-type: none"> 1. Understand the broiler industry status of our country. 2. Acquired in depth knowledge broiler farm shed preparation. 3. Understand the production management of broilers. 4. Understand the importance and methods of broiler performance assessment. 5. Better knowledge on the broiler feeding and seasonal Management. 					

Semester - I				
Course code: 80313	Chicken Anatomy, Incubation and Hatchery Management	T	Credits 3	H/W 4
Objectives	<ol style="list-style-type: none"> 1. To understand the normal anatomy, Physiology and physiological standards of avian species. 2. To provide in depth knowledge on digestive, Excretory and reproductive system. 3. To Impart knowledge on Nervous and Endocrine system system of chicken. 4. To know the care and management of hatching eggs and incubation principles and practices. 5. To understand the types of incubators and Hatchery Automation. 			
Unit -I	Chicken Anatomy and Physiology: Common Terminology - Classification and breed of chicken - External Anatomy - Integumentary parts of chicken - Feather patterns - Feather tracts - Comb pattern of chicken. Role of skin, Feather, Scales, Nails, Plumage and Beak in poultry - Thermoregulation in chicken - Physiological standards of poultry			
Unit -II	Digestive, Excretory and Reproductive system: Digestive system - Excretory system – Skeletal system - Reproductive system - Physiology of egg production - Egg structure and its composition			
Unit-III	Respiratory and Endocrine system: Respiratory system - Air sacs and its function - Inhalation and exhalation process - Endocrine system - Immune system.			
Unit-IV	Incubation requirements: Terminology- Hatchery Lay out, Design and Construction- Methods of Incubation- Selection and Care of Hatching eggs- Storage of hatching eggs- Egg Cool Room- Fumigation of hatching Eggs- Incubation Periods of different Poultry Species- Chicken Embryonic development stages – Physical requirements for incubation – Effects of temperature, humidity, gaseous environment, position and turning of eggs on hatchability.			
Unit-V	Incubator Management: Incubators – Types of incubators – Single stage and multistage incubators - Hatchery operations – Setting, Candling - Transfer - Hatching - Pedigree hatching - Chicks pull out - Grading – Chick sexing - Packing and Chick dispatch – In-ovo and In-hatch vaccinations and medications. Automation in hatchery operation.			
Reference and Textbooks:				
Bell D. Donald and Weaver D. William Jr., 2007. Commercial Chicken Meat and Egg Production. 5 th Edition. Springer India Pvt. Ltd., Noida. RajiniAsha R., 2011. Simply....Poultry Science.1st Edition. Alfa Publications, New Delhi Sathapathy S., Singh M. K., and Joshi S. K., 2015. <i>A Handbook on Anatomy & Physiology of Domestic Animals and Birds</i> . Sathish Serial Publishing House, New Delhi, India. Sreenivasaiyah, P. V., 2015. Textbook of Poultry Science. 1st Edition. Write & Print Publications, New Delhi Taylor W. Lewts, 2003. <i>Fertility and Hatchability of Chicken and Turkey Eggs</i> . 1 st Edition. International book Distributing Co., Lucknow, India.				
On the successful completion of the course, students may <ol style="list-style-type: none"> 1. Able to understand the basic anatomy of chicken. 2. Students will be able to get deeper knowledge in skeletal and respiratory system. 3. Students will acquire in depth knowledge on digestive, reproductive and egg formation. 4. Acquire in depth knowledge on care and management of hatching eggs. 5. Understand the hatchery management and its operations. 				

Semester - I				
Course code: 80314	Practical in Broiler Housing and Management	P	Credits: 4	H/W: 8
Objectives	<ol style="list-style-type: none"> 1. To study about the various rearing systems and basic concepts of poultry housing, equipment required for rearing of chicken. 2. To know about the Overview of Broiler Industry and various management, other skills involved in Broiler production. 3. To understand the normal anatomy, Physiology and physiological standards of avian species. 4. To Impart knowledge in the management of hatching eggs and incubation principles and practices. 5. To make the student to understand the concept of automation in the, Broiler farm and Hatchery. 			
	<ol style="list-style-type: none"> 1. Layout, Design and Construction of Deep Litter Broiler House 2. Broiler farm Equipment. 3. Construction Co efficient of Broiler farm 4. Automation in Broiler housing 5. Broiler farm Shed cleaning. 6. Brooding arrangements. 7. Water quality assessment and feeder, drinker arrangements. 8. Grading and crop score assessment. 9. Chicken reproductive system. 10. Digestive system of Fowl. 11. Egg structure and its composition. 12. Hatchery location, layout, design and construction. 13. Hatchery sanitation and fumigation methods. 14. Physical requirements of incubation 15. Hatchery Operation. 			
Outcome	<ol style="list-style-type: none"> 1. Students will be able to understand about the various brooding, feeding, watering, litter management and other skills involved in broiler production. 2. Understand the importance and methods of broiler performance assessment. 3. Students will acquire in depth knowledge on digestive, reproductive and egg formation. 4. Acquire in depth knowledge on care and management of hatching eggs. 5. Understand the hatchery management and its operations. 			

Semester - I																
Course code: 80315	In plant Training	I	Credits 4	H/W 8												
Objectives	To understand the daily routines of the farm and also involved in skilled operations															
Directions	<ul style="list-style-type: none"> ❖ Students are allocated at different broiler chicken production and Technology units on rotational basis. ❖ They will be assigned to undergo hands on skill training throughout the day to acquire better skill and knowledge. ❖ They will be exposed to daily routines of the farm and also involved in skilled operations <p style="text-align: center;"><u>Broiler In Plant Training Schedule</u></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%; text-align: center;">Sl.No.</th> <th style="text-align: center;">Name of the Unit</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1.</td> <td>Broiler chick production unit (Hatchery)</td> </tr> <tr> <td style="text-align: center;">2.</td> <td>Broiler chicken production Units (Commercial Broiler Farm)</td> </tr> <tr> <td style="text-align: center;">3.</td> <td>Broiler chicken marketing (Suguna Branch)</td> </tr> <tr> <td style="text-align: center;">4.</td> <td>Broiler chicken Processing and Value addition unit (Processing plant)</td> </tr> <tr> <td style="text-align: center;">5.</td> <td>Broiler feed Production unit (Feed Mill Unit)</td> </tr> </tbody> </table> <ul style="list-style-type: none"> ❖ After the in-plant training the students will prepare an in-plant Training project report which will be evaluated by the Faculty at the SIPM along with External Examiner. 				Sl.No.	Name of the Unit	1.	Broiler chick production unit (Hatchery)	2.	Broiler chicken production Units (Commercial Broiler Farm)	3.	Broiler chicken marketing (Suguna Branch)	4.	Broiler chicken Processing and Value addition unit (Processing plant)	5.	Broiler feed Production unit (Feed Mill Unit)
Sl.No.	Name of the Unit															
1.	Broiler chick production unit (Hatchery)															
2.	Broiler chicken production Units (Commercial Broiler Farm)															
3.	Broiler chicken marketing (Suguna Branch)															
4.	Broiler chicken Processing and Value addition unit (Processing plant)															
5.	Broiler feed Production unit (Feed Mill Unit)															
Outcome	On the successful completion of the in plant training programme, students will learn daily routines of the farm and also involved in skilled operations.															

Semester - II				
Course code: 80321	Broiler Nutrition and Feed Milling Technology	T	Credits 4	H/W 6
Objectives	<ol style="list-style-type: none"> 1. To understand the broiler feed production concepts 2. To study the nutrient requirements and feeding for broiler 3. To make the student to study about the important feed additives used for feed formulations 4. To make the students aware about the basic concepts of feed mill design and equipment 5. To make the student to understand about the Proximate Principles 			
Unit –I	Classification of Feed ingredients: Classification Nutrients and feed ingredients - Conventional and non-conventional poultry feeds - Energy sources, Vegetable and Animal protein sources – Nutrient requirement and BIS Standards for broilers			
Unit-II	Feeds and feeding: Feed ingredients - composition – Feed formulations – Types and forms of feed - mash, pellet and crumble feed - Feeding Methods – <i>Ad libitum</i> feeding, Phase feeding, Precision feeding, supplementary feeding - Feeding and watering of commercial broilers – Seasonal feeding management – Summer and winter feeding management - Nutritional deficiency diseases and metabolic disorders			
Unit III	Feed additives and toxicants: Feed Additives and supplements – Classification – Antioxidants, enzymes, probiotics, prebiotics and antibiotics, Toxin binders, herbs – Feed Toxins classification - Mycotoxins and pesticide toxins and their prevention			
Unit IV	Feed milling: Feed mill design and equipment - Feed production methods – grinding, pre mixing, mixing, conditioning, pelletizing, crumbling, sieving process and premixing methods - Feed storage			
Unit V	Feed quality: Feed milling quality control - Physical and sensory evaluation of feed ingredients – Sampling techniques for ingredients and compounded feed-Common adulterants			
Reference and Textbooks:				
Bell D. Donald and Weaver D. William Jr., 2007. Commercial Chicken Meat and Egg Production. 5 th Edition. Springer India Pvt. Ltd., Noida. Leeson S., & Summers J. D., 2001. Scott’s Nutrition of the Chicken.4th Edition. University Books, Canada Sreenivasaiah, P. V., 2006. Scientific Poultry Production-A unique encyclopedia. International Book Distributing Co., Lucknow, India Suguna Management System: Standard Operating Manual – Feed Lab, 2012. Suguna Foods Pvt. Ltd.				
Outcome	On the successful completion of the course, <ol style="list-style-type: none"> 1. Understand the various feed ingredients used for Broiler feed 2. Acquired in depth knowledge on nutrient requirements of poultry and feeding of broiler 3. Know about the basic concepts of feed mill design and equipment 4. Able to understand about the Proximate Principles of broiler feed 5. Better knowledge on feed milling activity and feed quality control 			

Semester - II				
Course code: 80322	Broiler Flock Health, Diseases and Bio-Security	T	Credits 3	H/W 4
Objectives	1. To understand the bio security and Flock health procedures followed in the broiler farm 2. To study about the important viral diseases in poultry 3. To make the student to study about the important bacterial Diseases affecting broiler chicken 4. To make the students aware on Parasitic and Deficiency Diseases 5. To make the student to understand on Vaccination and Medication			
Unit -I	Broiler farm Bio security: Common terminology – Classification of pathogenic Organisms – Bio security – Importance – Types and Measures - Principles of disease prevention and control – Water sanitization			
Unit-II	Viral Diseases of Broilers: Viral Diseases – Etiology, transmission, signs, lesions, diagnosis, treatment, prevention and control – Ranikhet disease, Infectious Bursal disease, Mareks’ disease, Fowl Pox and Avian Influenza			
Unit III	Bacterial Diseases of Broilers: Etiology, transmission, signs, morbidity and mortality, gross lesions, diagnosis, treatment, prevention and control – Colibacillosis, Chronic Respiratory disease, Mycoplasmosis, Salmonellosis, Fowl Cholera and Infectious Coryza.			
Unit IV	Parasitic and Deficiency Diseases: Ecto and Endo Parasites, protozoan infection – Coccidiosis causes and control measures - Fungal disease – Aspergillosis - Mycotoxicosis - Nutritional Deficiency Disease - Metabolic Diseases – Gout, Ascites.			
Unit V	Flock Health Vaccine – Types of vaccine – Vaccination procedure and precautions – Medication – Types of medication – Importance of feed and water medication - Vaccination schedule for broilers – Disinfection and Fumigation			
Reference and Textbooks: Bell D. Donald and Weaver D. William Jr., 2007. Commercial Chicken Meat and Egg Production. 5 th Edition. Springer India Pvt. Ltd., Noida. Leeson S., & Summers J. D., 2001. Scott’s Nutrition of the Chicken.4th Edition. University Books, Canada				
On the successful completion of the course, <ol style="list-style-type: none"> 1. Students will be able to understand the Bio security procedures followed in the broiler farm 2. Students will be able to understand the viral diseases in poultry 3. Students will be able to know about the important bacterial Diseases in broiler 4. Students will be able to know about the Parasitic and Deficiency Diseases 5. Students will be able to understand about the Vaccination and Medication 				

Semester - II				
Course code: 80323	Broiler Processing and Marketing	T	Credits: 3	H/W: 4
Objectives	1. To understand the overview of chicken egg and meat processing 2. To know about the quality characteristics of table eggs 3. To understand the egg processing technology 4. To provide in depth knowledge broiler meat processing and quality Control 5. To provide in depth knowledge on poultry waste management			
Unit -I	Poultry Meat Processing: Introduction – Plan, layout and design of poultry processing plant – Equipment used in poultry processing plant – Transporting of broilers – Methods of slaughter – Ante-mortem Inspection- Steps Involved in chicken Processing – Dressing percentage - Carcass Grading – Cut-up parts – Chilling - Freezing and Packaging of poultry meat			
Unit-II	Quality Control of Poultry Products: Meat spoilage and Quality deterioration – Packaging of meat – Materials used in packaging of meat – Modern trends in packaging of poultry meat – Quality preservation and transportation of Poultry meat - HACCP concept on slaughter management - Codex regulation for food products safety - Regulations for import and export of poultry products			
Unit III	Waste Management: Introduction – Utilization of poultry waste - Design and layout of rendering plant - Liquid waste management and effluent treatment plant - Hatchery waste management - Composition of poultry manure – Dead bird disposal			
Unit IV	Marketing of Broilers Integration Concepts and Advantage - Customer complaints handling, Broiler production and marketing – different types (Wet Marketing and Processed Chicken) of marketing of broiler.			
Unit V	Challenges in Broiler Marketing: Role of government and NGOs, BCC, NMPPB on broiler marketing - Transport of broiler - Customer Relationship Management – Challenges and suggestions in broiler marketing			
Reference and Text books: Narahari D., and Kumararaj R., 2008. <i>Handbook of applied Broiler Production</i> . 1 st Edition. Poultry Punch Publication (I) Pvt. Ltd., New Delhi. Charles Burr, T., and Stuart O. Homer, 2011. <i>Commercial Poultry Farming</i> . 1 st Edition. Biotech Books, New Delhi. Jadhav N. V., and Siddique M. F., 2007. <i>Handbook of Poultry Production and Management</i> . 2 nd Edition. Jaypee Brothers Medical Publishers Pvt. Ltd., New Delhi. Bell D. Donald and Weaver D. William Jr., 2007. <i>Commercial Chicken Meat and Egg Production</i> . 5 th Edition. Springer India Pvt. Ltd., Noida. Sreenivasaiyah., P. V., 2015. <i>Textbook of Poultry Science</i> . 1 st Edition. Write & Print Publications, New Delhi Suguna Management System: <i>Standard Operating Manual – Broiler, 2012</i> . Suguna Foods Pvt. Ltd.				
Outcome	On successful completion of the course, the students could <ol style="list-style-type: none"> 1. Understand the broiler industry status of our country 2. Acquired in depth knowledge broiler farm bio security and shed preparation 3. Understand the production management of broilers 4. Understand the importance and methods of broiler performance assessment 5. Better knowledge on the broiler production and marketings 			

Semester - II

Course code: 80324	Practical in Broiler Nutrition, Disease Management and Processing	P	Credits 4	H/W 8
Objectives	<ol style="list-style-type: none"> 1. To Impart knowledge on nutrient requirements of poultry 2. To provide in depth knowledge on feeds and feeding of poultry 3. To provide in depth knowledge on flock health and farm biosecurity 4. To understand the control measures of bacterial, viral and parasitic diseases preventive measures 5. To provide in depth knowledge broiler meat processing and quality control 			
	<ol style="list-style-type: none"> 1. Feed ingredients used in poultry feed ant its nutrient composition 2. Physical and sensory evaluation of feed ingredients 3. Nutrient requirements of Broiler 4. Feed mill layout and design 5. Feed milling equipment 6. Feed production methods 7. Storage of feed ingredients and feed 8. Post-mortem examination of chicken 9. Vaccination and medication methods and procedures 10. Vaccination schedule for commercial broilers 11. Bio security and personal safety measures 12. Visit to poultry disease diagnostic laboratory 13. Ante mortem inspection of broilers 14. Processing of broiler chicken 15. Visit to Broiler processing plant 			
Outcome	<ol style="list-style-type: none"> 1. Acquired in depth knowledge on nutrient requirements of poultry 2. Understand the types feed and feeding of poultry 3. Understand the poultry diseases and its control measures 4. Acquired in depth knowledge on poultry farm bio security measures 5. Understand the broiler meat processing technology 			

Semester - II				
Course code: 80325A/80325B	Core Practical - IV Project Work - 80325A In-plant Training – 80325B	PR/ I	Credits 4	H/W 8
Objective	To enable the students to understand and have hands on experience in basic techniques involved in broiler management.			
	<ul style="list-style-type: none"> ❖ Students are allocated at different broiler chicken production and Technology units on rotational basis. ❖ They will be assigned to undergo hands on skill training throughout the day to acquire better skill and knowledge. ❖ They will be exposed to daily routines of the farm and also involved in skilled operations 			
On the successful completion of the in plant training programme, students learned daily routines of the farm and also involved in skilled operations.				

Diploma Programme

Passing minimum

- A candidate shall be declared to have passed in each course if he/she secures not less than 40% marks in the End Semester Examinations and 40% marks in the Internal Assessment and not less than 40% in the aggregate, taking Continuous assessment and End Semester Examinations marks together.
- The passing minimum for CIA shall be 40% out of 25 marks (i.e.10 marks) in Theory/ Practical Examinations.
- The passing minimum for University Examinations shall be 40% out of 75 marks (i.e. 30 marks) for Theory /Practical papers.
- The candidates not obtain 40% in the Internal Assessment are permitted to improve their Internal Assessment marks in the subsequent semesters (2 chances will be given) by writing the CIA tests or by submitting assignments.
- Candidates, who have secured the pass marks in the End-Semester Examination and in the CIA but failed to secure the aggregate minimum pass mark (E.S.E + C I.A), are permitted to improve their Internal Assessment mark in the following semester and/or in University examinations.
- A candidate shall be declared to have passed in the Dissertation/Project report/Internship report if he/she gets not less than 40% marks in the Internal Assessment and End Semester Examinations and not less than 40% in the aggregate, taking Continuous assessment and End Semester Examinations marks together.
- A candidate who gets less than 40% in the Dissertation / Internship/ Project Report must resubmit the thesis. Such candidates need to take again the Viva-Voce on the resubmitted report/thesis.