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

Post Graduate Diploma in Poultry Health

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, Udumalpet**
Name of the Subject Discipline: **Post Graduate Diploma in Poultry Health**

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.

Programme of Level: Diploma Programme

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 in 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 **Post Graduate Diploma in Poultry Health,** is diploma programme and duration is one year and spread over two semesters. The course deals with the study about ***Poultry Health 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 /Viva-voce, 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:

The whole programme 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 consist 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) 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 if any. 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 Educational Objectives (PGO):

PGO - 1	To start Post Graduate Diploma Programme in the area of Poultry Health
PGO - 2	To meet out the Poultry heath man power demand of the poultry sector
PGO - 3	To educate the Under Graduates in a better employable sector
PGO - 4	To meet out the skilled disease management technocrat requirement in poultry production
PGO - 5	To develop self-employment opportunities in the area of poultry disease management

8. Programme Specific Objectives (PSO):

PSO – 1	Students will know all scientific information and advancements in the discipline of poultry disease management
PSO – 2	Students acquire in-depth knowledge in the area of poultry disease diagnosis and treatment
PSO – 3	Students will become an expert in poultry farm biosecurity management
PSO – 4	Students gain relevant knowledge on various poultry disease control measures along poultry vaccination and medication
PSO – 5	Students may become the technically competent skilled technocrat in the area of poultry disease epidemiology

9. Programme Outcome (PO):

PO – 1	Acquire the fundamental knowledge and skills in the area of poultry health management
PO – 2	Gain knowledge on the anatomy and Physiology of chicken along with chick production
PO – 3	Develop specialized knowledge and skills in healthy chicken egg and meat production
PO – 4	Acquire knowledge on the establishment of poultry disease diagnostic laboratory
PO – 5	Gain information on epidemiology of poultry disease in our country
PO - 6	Know about the post mortem techniques in poultry

PO – 7	Aware on the poultry industry waste management and its mitigation
PO – 8	Gain knowledge on vaccination techniques and procedure
PO – 9	Able to handle advanced modern laboratory instruments for poultry disease diagnosis
PO – 10	Understand the various medication procedure to control poultry disease

10. Programme Specific Outcome (PSO):

PO – 1	Students will understand the importance of health maintenance on the production performance of poultry
PO – 2	Students gain relevant knowledge and skill on poultry disease diagnostic measures
PO – 3	Students will become an a consultant in poultry disease diagnosis and control measures
PO – 4	Students will acquire specialized skill in the area of poultry vaccination and medication; which is very helpful to get better employment / self-employment
PO – 5	Students will become an expert in the assessment of poultry products quality assurance

11. Eligibility for admission:

An undergraduate degree in B.Tech in Poultry Production Technology / Poultry Technology, B.Sc in Poultry Production and Business Management, Poultry Science, Zoology, Botany, Microbiology, Biotechnology, Life Sciences and other related equivalent degrees with Pass in the degree Examinations. The students shall have undergone the UG Programme of not less than three years and should pass in all the subjects prescribed.

12. Minimum Duration of Programme:

The programme is for One year period 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:

The Post Graduate diploma 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 courses suggested for 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.

Generic Elective (Allied) - Within the faculty, the students shall undergo two discipline-specific allied courses (one in the first year and another in the second year of his/her study except for computer application)

Course Requirement:

Each student should have taken **36** credits as a core course including Dissertation and In-plant Training courses. A student should undergo a total of atleast **36** + extra credits required to complete the **Post Graduate Diploma in Poultry Health** course.

Dissertation (Maximum Marks: 200)

The candidate shall undergo Dissertation Work during the fourth semester. The candidate should prepare a scheme of work for the dissertation and should get approval from the guide. The candidate, after completing the dissertation, shall be allowed to submit it to the departments at the end of the final semester.

The format to be followed for the dissertation by the student is given below

- Title page
- Certificate
- Acknowledgment
- Content as follows:

Chapter No.	Title	Page No.
1	Introduction	
2	Aim and objectives	
3	Review of Literature	
4	Material and Methods	
5	Results	
6	Discussion	
7	Summary and Conclusion	
8	References	

Format of the title page

Title of Dissertation

Dissertation submitted in partial fulfillment of the requirement for the degree of ------ of ------- in ---------- to the ----------

By
(Student Name)
(Register Number)

Logo

Department of ----------

Name and Address of the institute
(Year)

Format of certificates:

Certificate (Guide)

This is to certify that the Dissertation entitled "----------" submitted to ---------- in partial fulfilment for the degree of------- in ---------- by Mr / Miss ---------- (Reg No:----------) under my supervision. This is based on the results of studies carried out by him/her in the Department of ----------. This dissertation or any part of this work has not been submitted elsewhere for any other degree, diploma, fellowship, or any other similar titles or record of any University or Institution.

Research Supervisor

Place:
Date:_____

Certificate (HOD)

This is to certify that the thesis entitled "----------" submitted by Mr/Miss. ---------- (Reg No :----------) to the ----------, in partial fulfilment for the award of the degree of------- of ----------in ---------- is a bonafide record of research work done under the supervision of Dr. ----------, Assistant Professor, Department of ----------, ----------. This is to further certify that the thesis or any part thereof has not formed the basis of the award to the student of any degree, diploma, fellowship, or any other similar title of any University or Institution.

Head of the Department

Place:
Date:_____

Declaration (Student)

I hereby declare that the dissertation entitled "----------" submitted to the ----------for the award of the degree of ----------of ----------in ---------- has been carried out by me under the guidance of Dr.----------, Assistant Professor, Department of----------, ----------,----------. This is my original and independent work and has not previously formed the basis of the award of any degree, diploma, associateship, fellowship, or any other similar title of any University or Institution.

(----------)

Place:
Date:_____

No. of copies of the dissertation/Internship report :

The candidate should prepare three copies of the dissertation/report and submit the same for the evaluation of examiners. After evaluation, one copy will be retained in the department library, one copy will be retained by the guide and the student shall hold one copy

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:

Sl. 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:

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

Dissertation – 50 Marks (assess by Guide/ HOD):

Sl. No.	Content	Marks
1	Two Presentation (Mid-term)	30
2	Progress report	20
	Total	50

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, the maximum marks will be 100 marks for dissertation evaluation and for the Viva-Voce it is 50 marks
- Viva-Voce: Each candidate shall be required to appear for the Viva-Voce Examination (internship).

Practical - Maximum 75 marks:

Section A	Major experiment	15 Marks
Section B	Minor experiment	10 Marks
Section C	Experimental setup	5 Marks
Section D	Spotters- (5 spotters x 5 marks)	25 Marks
Section E	Record Note	10 Marks
Section F	Viva-voce	10 Marks

Dissertation report – Maximum 150 marks

Dissertation Thesis	100 Marks
Viva Voce	50 Marks

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 + 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 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.

ALAGAPPA UNIVERSITY, KARAIKUDI
NEW SYLLABUS UNDER CBCS PATTERN w.e.f. 2023 -2024
PG DIPLOMA IN POULTRY HEALTH – PROGRAMME STRUCTURE

Sem.	Course Code	Courses	Title of the paper	T/P	Cr	Hrs/ week	Distribution of Marks		
							Int.	Ext.	Total
I	**45111**	**CC-I**	Fundamentals of Poultry Production Management	T	4	5	25	75	100
	45112	**CC-II**	Fundamentals of Poultry Health Management and Biosecurity	T	4	5	25	75	100
	45113	**CC-III**	Practical in Poultry production system, Poultry Health and biosecurity	P	5	10	25	75	100
	45114	**CC-IV**	In-plant Training -I	I	5	10	25	75	100
			Total		**18**	**30**	**100**	**300**	**400**
II	**45121**	**CC-V**	Common Diseases of Poultry	T	4	5	25	75	100
	45122	**CC-VI**	Conventional and Modern Poultry Disease Diagnostic Tools	T	4	5	25	75	100
	45123	**CC-VII**	Practical in Poultry diseases and its diagnostic methods	P	5	10	25	75	100
	45124A 45124B		Dissertation / Project work	D/ PR	5	10	50	150	200
			Total	**-**	**18**	**30**	**125**	**375**	**500**
			Grand Total	**-**	**36**	**60**	**225**	**675**	**900**

T – Theory **1 credit = 1 hour for Theory Paper**
P – Practical **1 credit = 2 hours Practical Paper**
Minimum Credit = 36

PG Diploma in Poultry Health – Programme Structure

<table>
<tr><th colspan="6">Semester I</th></tr>
<tr><td colspan="2"></td><td>Core course - I</td><td>T/P</td><td>Credits</td><td>H/W</td></tr>
<tr><td>Course Code:</td><td>45111</td><td>Fundamentals of Poultry Production Management</td><td>T</td><td>4</td><td>5</td></tr>
<tr><td>Objectives</td><td colspan="5">1. To understand the existing poultry production system
2. To impart knowledge on the basic avian anatomy and physiology
3. To teach on different housing system for chicken production
4. To provide in depth knowledge commercial chicken production
5. To introduce the importance and advantages of hatching egg production and day chick production</td></tr>
<tr><td>Unit - I</td><td colspan="5">Poultry Industry Overview:
Introduction – Common Terminology – Genetic Classification of chicken -– Overview of poultry industry - Commercial strains of broiler and layer chicken - Production standards of commercial layers, broilers and Breeders</td></tr>
<tr><td>Unit - II</td><td colspan="5">Avian Anatomy and Physiology:
Introduction - Integumentary parts of the chicken - Feather patterns – Comb types - Functions of skin, scales, nails, plumage, and beak.– Poultry digestive system - Skeletal system - Reproductive system – Formation of egg – Haemato biochemical standards in poultry – Comfort zone for poultry production</td></tr>
<tr><td>Unit - III</td><td colspan="5">Broiler and Layer Management:
Poultry Housing system – Deep Litter – Cage housing – Slatted floor system and Environmentally Controlled Housing system – Systems of poultry rearing – All-in-All Out and Multi batch system - Brooding of broiler chicks - Feeding, Watering and Lighting management of broilers – Commercial layer management – Egg Production curve – Identification of Good and Poor Layer – Culling – Debeaking and delicing</td></tr>
<tr><td>Unit - IV</td><td colspan="5">Breeder Management:
Brooding arrangements and brooding of breeders – crop scoring – Grading and Uniformity – Growing and laying management – breeder Male Management - Lighting management of breeders – Feeding and watering management – Care of hatching eggs – Litter management - Seasonal management of chicken</td></tr>
<tr><td>Unit - V</td><td colspan="5">Performance Assessment:
Performance parameter Monitoring – Feed Conversion Ratio (FCR) and Converted Feed Conversion Ratio (CFCR) - Livability, European Efficiency Factor (EEF) - Day gain - Mean age – Lifting efficiency - Feed efficiency – Fertility and Hatchability – Hen Day egg Production – Hen Housed Egg Production – Chick per hen.</td></tr>
<tr><td colspan="6">Reference and Text books:
Horst E. König, RüdigerKorbel, Hans-Georg Liebich, and Corinna Klupiec, 2016. Avian Anatomy: Textbook and Colour Atlas. (II Edition): 5m Publishing Ltd, Sheffield, UK
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.
Jull A. Morley, 2007. Successful Poultry Management. 2nd Edition. Biotech Books, New Delhi.
Marianne Taylor, 2020. The Pocket Book of Bird Anatomy, Bloomsbury Publishing UK</td></tr>
</table>

<table>
<tr><td colspan="2">Narahari D., and Kumararaj R., 2008. Handbook of Applied Broiler Production. 1st Edition. Poultry Punch Publication (I) Pvt. Ltd., New Delhi, India.
Sreenivasaiah., P. V., 2015. Textbook of Poultry Science. 1st Edition. Write & Print Publications, New Delhi
Victoria Aspinall, 2020. Introduction to Animal and Veterinary Anatomy and Physiology (4th edition) Vitalsource Technologies, Inc. USA</td></tr>
<tr><td>Outcome:</td><td>On successful completion of the course, the student will
1. Understand the existing poultry production system
2. Gain knowledge on the basic avian anatomy and physiology
3. Understand the different housing system for chicken production
4. Acquire in depth knowledge commercial chicken production
5. Aware on the importance and advantages of hatching egg production and day old chick production</td></tr>
</table>

PG Diploma in Poultry Health 2023 ONWARDS Semester I					
		Core Course - II	**T/P**	**Credits**	**H/W**
Course Code:	**45112**	**Fundamentals of Poultry Health Management and Biosecurity**	**T**	**4**	**5**

Objectives	1. To create awareness on avian immune system 2. To impart knowledge on general avian pathology 3. To Impart knowledge on the poultry disease control measures 4. To provide in depth knowledge on poultry medication and vaccination 5. To create the scientific knowledge on poultry farm biosecurity measures
Unit - I	**Avian Immune System:** Terminology - Structure and functions of avian immune system – Types of immunity, Cell- mediated immunity, Humoral immunity – Active and Passive immunity- Steps in immune response - Immune modulation, Immunostimulation, Immunosuppression
Unit - II	**General Avian Pathology:** Types and sources of infection - Methods of disease transmission- Pathogenesis - Gross and Microscopic pathology – Cytology and immuno histochemistry- General signs of disease- Specific signs of disease - Definition and classification of inflammation - Breast blister, pendulous crop, heat- stroke, vent gleet, egg bound - Egg borne diseases- Tumors in Poultry - Post mortem examination of chicken.
Unit - III	**Farm Biosecurity:** Definition – Levels and components of biosecurity - Importance of biosecurity – Advantages of biosecurity – Foot dip, hand wash- vehicle and human shower- Fly and rodent control – Weed control - Litter, carcass, and hatchery waste disposal Quarantine, isolation, Compartmentalization
Unit - IV	**Farm Disinfection and Sanitisation:** Shed cleaning and disinfection – Water quality standards - Water sanitation and Water sanitizers – Pipeline cleaning - Disinfection and disinfectants – Fumigation
Unit - V	**Medication and Vaccination:** Definition of Treatment, Prophylaxis, Vaccines, Medication – Routes of medication - General principles in Feed and Water medication – -Vaccination – Types of vaccines - Live vaccines, Killed vaccines - Recombinant vaccines, Attenuated vaccines – DNA vaccines - Vaccination schedule for broilers, layers, breeders - Vaccination techniques - Pre and post- vaccination care

Bell D. Donald and Weaver D. William Jr., 2007. *Commercial Chicken Meat and Egg Production*. 5th Edition. Springer India Pvt. Ltd., Noida.

Ed. D. Swayne, et al., , 2020. *Diseases of Poultry*, Blackwell Publishing, Ames, Iowa USA

Fred Davison, Bernd Kaspers and Karel A. Schat (Eds) 2013. Avian Immunology Vol. I, II and III Elsevier Science & Technology, Academic press UK

Hofstad M. S et al 1972. Diseases of Poultry Blackwell Publishing, Ames, Iowa USA

Narahari D., and Kumararaj R., 2008. *Handbook of applied Broiler Production*. 1st Edition. Poultry Punch Publication (I) Pvt. Ltd., New Delhi.

Saif., Y. M., et al., 2013. *Diseases of Poultry*. 12th Edition. Blackwell Publishing, USA.

Sreenivasaiah., P. V., 2015. *Textbook of Poultry Science*. 1st Edition. Write & Print Publications, New Delhi

Thyagarajan. D., 2011. *Diseases of Poultry*. 1st Edition. Satish Serial Publishing House, New Delhi, India.

Outcome:	On Successful completion of the course, the students could 1. Develop awareness on avian immune system 2. Acquire knowledge on general avian pathology

	3. Understand the poultry disease control measures 4. Gain in depth knowledge on poultry medication and vaccination 5. Understand the importance of poultry farm biosecurity measures

Semester I					
		Core Practical - I	**T/P**	**Credits**	**H/W**
Course Code:	**45113**	**Practical in Poultry Production System, Poultry Health and Biosecurity**	**P**	**5**	**10**
Objectives	1. To understand the existing poultry production system 2. To impart knowledge on the basic avian anatomy and physiology 3. To provide in depth knowledge commercial chicken production 4. To impart knowledge on general avian pathology 5. To Impart knowledge on the poultry disease control measures 6. To provide in depth knowledge on poultry medication and vaccination 7. To create the scientific knowledge on poultry farm biosecurity measures				
1.	Breeds of chicken				
2.	Brooding of chicks				
3.	Grading of breeder chicks				
4.	Debeaking				
5.	Performance assessment of broilers, layers and breeders				
6.	Judging of layers				
7.	Production standards of broilers, layers and breeders				
8.	Post mortem examination of chicken				
9.	Sample collection techniques				
10.	Microbial staining procedures				
11.	Water quality assessment				
12.	Vaccination methods and procedures				
13.	Vaccination schedule for broilers, Layers and breeders				
14.	Visit to hatchery unit				
15.	Visit to Poultry disease diagnostic laboratory				
Outcome:	On Successful completion of the course, the students may 1. Understand the existing poultry production system 2. Acquired knowledge on the basic avian anatomy and physiology 3. Have in depth knowledge commercial chicken production 4. Aware about general avian pathology 5. Understand the poultry disease control measures 6. Acquired in depth knowledge on poultry medication and vaccination				

Semester I				
		In-plant Training - I	**Credits**	**H/W**
Course Code:	**45114**		**5**	**10**

Objectives	1. To understand the existing poultry production system 2. To impart knowledge on the basic avian anatomy and physiology 3. To provide in depth knowledge commercial chicken production 4. To impart knowledge on general avian pathology 5. To Impart knowledge on the poultry disease control measures 6. To provide in depth knowledge on poultry medication and vaccination 7. To create the scientific knowledge on poultry farm biosecurity measures	
Directions	Students are allocated to undergo training at different units on rotational basis. They will be assigned to undergo training in Broiler farm, Breeder farm, Feed mill, Hatcheries and processing plant units. They will be exposed to the daily routines of the unit and also involved in the skilled operation .	
1.	Hatchery unit	5 days
2.	Broiler units	7 days
3.	Breeder units	7days
4.	Feed mill	4 days
5.	Poultry disease diagnostic Laboratory	4 days
6.	Poultry Processing and Rendering plant	3 days
Outcome:	On Successful completion of the course, the students may 1. Understand the existing poultry production system 2. Acquired knowledge on the basic avian anatomy and physiology 3. Have in depth knowledge commercial chicken production 4. Aware about general avian pathology 5. Understand the poultry disease control measures 6. Acquired in depth knowledge on poultry medication and vaccination	

Semester II				
Course Code:	**Core course - III**	**T/P**	**Credits**	**H/W**
45121	**Common Diseases of Poultry**	**T**	**4**	**5**
Objectives	1. To provide in depth knowledge on the viral diseases of poultry 2. To understand the control measures of bacterial diseases of poultry 3. To have an in depth knowledge on parasitic diseases preventive measures 4. To provide in depth knowledge on fungal diseases of poultry 5. To understand the nutritional deficiency diseases of poultry			
Unit - I	**Viral Diseases:** Important Viral Diseases of chicken – Etiology – Signs and lesions - Morbidity and Mortality - Diagnosis - Differential diagnosis - Treatment - Prevention and Control – Ranikhet Disease - Mareks' Disease – Lymphoid Leucosis - Avian Influenza - Infectious Bursal Disease - Infectious Bronchitis - Infectious Laryngo-Tracheitis - Fowl Pox			
Unit - II	**Bacterial Diseases:** Economically important Bacterial Diseases of chicken - Etiology - Host and Transmission - Signs and lesions - Morbidity and Mortality - Diagnosis - Treatment - Prevention and control - Colibacillosis - Mycoplasmosis - Salmonellosis - Fowl cholera, Infectious Coryza, bumble foot and necrotic enteritis			
Unit - III	**Parasitic and Mycotic Diseases:** **Parasitic diseases** - Etiology, transmission, clinical signs, postmortem lesions, diagnosis, treatment, control and prevention of Endoparasites, Ectoparasites and - Protozoan disease of chicken – Coccidiosis – Litter management - House fly control measures **Mycotic diseases -** Etiology - Signs and lesions - Morbidity and Mortality - Diagnosis - Treatment - Prevention and control of Fungal diseases - Aspergillosis - Mycotoxicosis – Aflatoxicosis and Ochratoxicosis – Pesticide toxicity in poultry and its preventive measures –			
Unit - IV	**Nutritional Disorders:** Importance of nutritional deficiency diseases - Rickets – Cage Layer fatigue – Exudative diathesis - Curled toe paralysis - Crazy Chick disease - Perosis – Star gazing in chicks - Bowed leg syndrome – Poly neuritis – Anaemia - Metabolic disorders: Gout – Ascites- Sudden Death Syndrome – Fatty Liver hemorrhagic Syndrome (FLHS), Fatty liver and kidney syndrome (FLKS) – Common Vices of chicken			
Unit - V	**Disease Prevention and Control:** Quarantine procedures – Feed and water quality maintenance – Analyzing Post vaccine immune responses - Maintaining Salmonella and Mycoplasma free breeding flock – Application of HACCP and Good Management Practices (GMP) in hatchery for better chick quality –Maintenance of Health Records and Registers			

Reference and Text books:

Crawford, R.D. (Ed.). 1993. Poultry Breeding and Genetics.*Amsterdam :Elsevier.*

David E. Swayne., Martine Boulianne., Catherine M. Logue., Larry R. McDougald., Venugopal Nair., & David L. Suarez .(Eds). (2020). *Diseases of Poultry*, (14th ed). USA: Blackwell Publishing, Ames, Iowa

Mack O. North.,&Donald D. Bell.1990.*Commercial Chicken Production Manual,*(4th*ed*). Connecticut:AVI Publ. Co. Inc., Westport.

<table>
<tr><td colspan="2">Saif,Y.M., Fadly, A. M., Glisson, J. R., McDougald, L. R., Nolan, L. K.& Swayne D. E. (Eds). 2008. Diseases of Poultry, (12th ed). USA: Blackwell Publications Ames, Iowa.
Thyagarajan, D. 2011. Diseases of Poultry. (1st ed). New Delhi: Satish Serial Publishing House.
Vegad,J.L. 2016. Poultry Diseases: A guide for farmers and Poultry Professionals,(2nded). New Delhi: CBS Publishers & distributors Pvt. Ltd.</td></tr>
<tr><td>Outcome:</td><td>On successful completion of the course, the student could
❖ Understand the control measures of viral diseases of poultry
❖ Understand the control measures of bacterial diseases of poultry
❖ Have an in depth knowledge parasitic diseases preventive measures
❖ Acquired in depth knowledge on fungal diseases of poultry
❖ Aware on the importance of nutritional deficiency diseases of poultry</td></tr>
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Semester II				
Course Code:	**Core Course - IV**	**T/P**	**Credits**	**H/W**
45122	**Conventional and Modern Poultry Disease Diagnostic Tools**	**T**	**4**	**5**

Objectives	➢ To create awareness on poultry disease diagnostic methods ➢ To impart knowledge on sample collection for laboratory analysis ➢ To Impart knowledge on identification of pathogenic agents ➢ To provide in depth knowledge on serological methods of disease ➢ diagnosis ➢ To create knowledge on modern poultry disease diagnostic Tools
Unit - I	**Microbial Sample Collection:** Sample collection methods for Bacterial, Viral, Parasitic and other protozoan diseases— Blood collection – Serum separation – Dispatch of samples to the laboratory – Preparation of hyper immune serum
Unit - II	**Conventional Non Serological Methods** Isolation and identification of causative agents – Microscopy and Micrometry- Structure and morphology of Bacteria, Virus, Fungi and Protozoa - Cultivation methods of bacteria, virus and fungi - Types of media – Transport medium – Media for isolation and identification of pathogenic bacteria, virus, fungus etc Colony morphology, Bacteria Staining methods - Cytopathogenic effects of viruses
Unit - III	**Conventional Serological Methods** Agglutination tests – Haemagglutination, Plate agglutination- Tube agglutination test- Haemagglutination inhibition test – Enzyme- linked immunosorbent assay- Agar gel immune diffusion test – Counter current immune electrophoresis — Fluorescent antibody test –
Unit - IV	**Modern Serological Diagnostic Tools** Western blot technique – Hybridoma technology, Monoclonal antibody based diagnostic techniques- Flow- through technique, Latex agglutination technique – Poly acrylamide gel electrophoresis
Unit - V	**Nucleic Acid and Protein Based Methods** Polymerase chain reaction – Multiplex PCR, Reverse transcription PCR, Quantitative real- time PCR, Nested PCR, *In situ* PCR – Nucleic acid Sequencing – Blast analysis for homology – Blotting Techniques

Reference and Text books:

Carter, G.R., and John R. Cole, Jr, 1990. *Diagnostic Procedure in Veterinary Bacteriology and Mycology,*

D. Scott McVey (Editor), Melissa Kennedy (Editor), M. M. Chengappa (Editor), 2013. *Veterinary Microbiology* 3rd Edition, Somak Banerjee, 2021. *Immunological Techniques : In biology notes* (Eds) SagarAryal and Frank O'Neill,https://thebiologynotes.com/

David H.Persing, Smith, T.F., Tenover, F.C. and White, T.J., 1993. *Diagnostic Molecular Microbiology- Principles and Applications*,

George P. PatrinosWilhelm AnsorgePhillip B. Danielson, 2016. Molecular Diagnostics, 3rd Edition,

Ivan M. Riott and Peter .J.Delves, 2005 .*Essential Immunology* Tenth Edition , Blackwell Publishing Oxford , UK

Outcome:	On Successful completion of the course, the students could 1.Acquired knowledge on poultry disease diagnostic methods 2. Understand the sample collection procedures for laboratory analysis 3. Trained on identification of pathogenic agents 4. Expertise in serological methods of disease diagnosis 5. Acquired knowledge on modern poultry disease diagnostic methods

Semester II				
Course Code:	**Core Practical**	**T/P**	**Credits**	**H/W**
45123	**Practical in Poultry Diseases and its Diagnostic Methods**	**P**	**5**	**10**
Objectives	1. To create awareness on poultry disease diagnostic methods 2. To impart knowledge on sample collection for laboratory analysis 3. To Impart knowledge on identification of pathogenic agents 4. To provide in depth knowledge on serological methods of disease diagnosis 5. To create the scientific knowledge on modern poultry disease diagnostic tools			
1.	Microscopy and Micrometry			
2.	Preparation of bacteriological medium and different types of bacterial staining			
3.	Antibiotic Sensitivity test			
4.	Staining fungal cultures and Fecal examination for endoparasite eggs			
5.	Blood smear examination for protozoan parasites			
6.	Haemagglutination test and Haemagglutination inhibition test			
7.	Mycotoxin analysis in feeds and feed ingredients			
8.	Enzyme- linked immunosorbent assay			
9.	Polymerase chain reaction and agarose gel electrophoresis			
10.	Reverse transcription PCR			
Outcome:	On Successful completion of the course, the students may ❖ Aware about general poultry disease diagnostic methods ❖ Understand the laboratory media preparation ❖ Acquired knowledge on laboratory confirmation of bacteriological problem ❖ Understand the serum immune assay ❖ Awareness on the scientific knowledge on modern poultry disease diagnostic tools			

Semester II			
Course Code:45124A/ 45124B	**Dissertation - 45124A / Project work – 45124B**	**Credits**	**H/W**
		5	**10**
Objectives	To understand the documentation and presentation of data for the benefit of the scientific and farming community		
Directions	❖ Students are allocated individual project under the supervision of faculty at the institution (Guide) as well as co-guide ❖ The project report has to be prepared as per the University Guidelines and submitted to the Department at the end of semester ❖ Project report and viva voce will be evaluated by both the project supervisor (Faculty of the department) and an External Examiner.		
Outcome:	On Successful completion of the course, the students could understand the scientific presentation of the laboratory results in an effective manner		