Mandatory Disclosures as Per ANNEXURE-10

The following information shall be given in the information Brochure besides being hosted on the Institution's official Website.

The onus of the authenticity of the information lies with the Institution ONLY and not on AICTE.

1.	Name of the Institution Address including Telephone, Mobile, E-Mail	College of Poultry Production and Management, Hosur - 635 110, Tamil Nadu, India. Phone: +91-4344 295 164 +91 9444227466 e-mail: deancppm@tanuvas.org.in
2.	Name and address of the Trust/ Society/ Company and theTrustees	Not Applicable
3.	Name and Address of the Vice Chancellor/ Principal/Director Address including Telephone, Mobile,E-Mail	Dr S T Selvan Ph.D., Dean College of Poultry Production and Management, Hosur - 635 110, Tamil Nadu, India. Phone: +91-4344 295 164 +91 9444227466 e-mail: deancppm@tanuvas.org.in
4.	Name of the affiliating University	Tamil Nadu veterinary and Animal sciences University

5. Governance
Members of the Board and their brief background

MEMBERS FOR BOARD OF MANAGEMENT

SECTION 18(2), CHAPTER IV OF THE ACT 42 OF 1989

CLASS – I: EX-OFFICIO MEMBERS		
a)	Vice-Chancellor and Chairman	**Dr. K.N.Selvakumar, PhD**
b)	Additional Chief Secretary to Government, Animal Husbandry, Dairying, Fisheries and Fishermen Welfare Dept. Government of Tamil Nadu, Secretariat, Chennai-600 009.	**Thiru. T.S.Jawahar , IAS**
c)	Additional Chief Secretary to Government, Finance Department, Government of Tamil Nadu Chennai – 600 009	**Thiru. S.Krishnan, IAS**
d)	Secretary to Government, Law Department, Govt. of Tamil Nadu, Chennai-600009.	**Thiru. C.GopiRavikumar, MA, ML**
e)	Director of Animal Husbandry &Vety. Services, Integrated Animal Husbandry and Fisheries Department Campus, No. 571, Anna Salai, Nandanam, Chennai -35.	**Thiru. A.Gnanasekaran, IAS**
f)	Registrar - Member Secretary, TANUVAS, Chennai-51.	**Dr. P.TensinghGnanaraj, PhD**
CLASS – II: OTHER MEMBERS		

a)	One scientist, having special knowledge or practical experience in research; teaching and extension education in the field of veterinary and animal sciences, nominated by the Chancellor	**Dr. V. Balakrishnan, PhD** Former Professor & Head, Dept. of Animal Nutrition, MVC, Chennai.
b)	One livestock farmer nominated by the Government	**Thiru. C.Balakrishnan** S/o.Th.ChinnasamyGounder, 68/2, Goundachipudhur Road, Elleys Nagar (P), Dharapuram(T), Tirupur 638 657.
c)	One representative of the industries connected with animal husbandry nominated by the Chancellor	**Thiru. R.H. Gopal, BSc** Ex-NECC Executive Council Member, 4/716 B Vinayaga Nagar, Nagarajapuram, Vasanthapuram Post, Trichy Road, Namakkal - 637 001.
d)	One woman social worker nominated by the Chancellor	**Tmt. lndumati J.C.** Trustee, Seva Bharathi, Plot No.87, 2nd Cross, Appavu Nagar, Thally Road, Hosur - 635 109.
e)	One educationist nominated by the Chancellor	**Thiru. G.S. Madhusudan, BE** Technology Consultant, Senior Project Adviser, Computer Architecture and Systems Lab, Computer Science & Engineering, Deptartment Indian Institute of Technology, Chennai- 600 025.
f)	One nominee of the Indian Council of Agricultural Research	**Vacant (from 01/06/2021)**
g)	One nominee of the Tamil Nadu Veterinary Council	**Dr. N.Srikumar, MVSc** S-5, C-Block,Abhinav Apartments, 94/78,Gowdiamutt Road, Royapettah, Chennai – 600 014.
h)	One member elected by the members of Tamil Nadu Legislative Assembly	Vacant
i)	Two members representing agriculture and conversant with agricultural matters nominated by the Government.	**Dr. M.Sundaralingam, BSc, BVSc** 379/A, Ist Main Road, Natesan Nagar, Virugambakkam, Chennai 600 092.
j)		**Dr. B.Mahendran, BVSc** Additional Director (Retired)., No.3i/31, CMS Nagar, Cumbum, Theni District 625 516.

Members of Academic Advisory Body

ACADEMIC COUNCIL Members

{SECTION 22(1), CHAPTER IV OF THE ACT 42 OF 1989 AUTHORITIES OF THE UNIVERSITY}

The Academic Council is the academic authority of the University. The powers and functions of the academic council are:

To exercise general control on teaching and other educational programmes and maintain and promote the standards thereof;

To make regulations and amend or repeal the same;

To make regulations regarding the admission, the courses of study, the conduct of examinations and maintenance and promotion of standards of education etc.

CLASS – I: EX-OFFICIO MEMBER	
a)	The Vice-Chancellor, TANUVAS, Chennai - Chairman
b)	The Secretary to Government incharge of Animal Husbandry and Fisheries, GoTN
c)	The Director of Animal Husbandry
e)	The Dean of each college
f)	The Dean of each faculty
g)	The Director of Research, TANUVAS, Chennai
h)	The Director of Clinics, TANUVAS, Chennai
i)	The Director of Extension Education, TANUVAS, Chennai
j)	The Director, Centre for Animal Health Studies, TANUVAS, Chennai
k)	The Director, Centre for Animal Production Studies, TANUVAS, Chennai
l)	The Registrar, TANUVAS, Chennai - Member Secretary
CLASS – II: OTHER MEMBERS	
a)	Ten members from amongst the heads of Departments to be nominated by the Vice-Chancellor, on rotational basis
	1. Dr.V.Leela Professor and Head, Department of Veterinary Physiology, Madras Veterinary College, Chennai - 600 007. **2. Dr. A.Natarajan** Professor and Head, Animal Feed Analytical & Quality Assurance Laboratory, Veterinary College and Research Institute, Namakkal 637 002 **3. Dr.R.EzakialNapolean** Professor and Head, Department of Veterinary Gynaecology and Obstetrics, Veterinary College and Research Institute, Namakkal -637 002 **4. Dr.D.Balasubramanyam** Professor and Head, Post Graduate Research Institute in Animal Sciences, Kattupakkam **5. Dr.C.Ramani** Professor and Head, Department of Veterinary Surgery and Radiology, Madras Veterinary College, Chennai - 600 007 **6. Dr.M.Parthiban** Professor and Head, Department of Animal Biotechnology, Madras Veterinary College, Chennai 600 007 **7. Dr.S.Ramesh** Professor and Head, Department of Veterinary Pharmacology and Toxicology, Madras Veterinary College, Chennai - 600 007 **8. Dr.SabihaHayath Basha** Professor and Head, Department of Veterinary Anatomy, Veterinary College and Research Institute, Salem **9. Dr.P.Selvaraj** Professor and Head, Department of Veterinary Anatomy, Veterinary College and Research Institute, Salem **10. T.V.Meenambigai** Professor and Head, Vaccine Research Centre-Viral Vaccine, Madhavaram Milk Colony, Chennai 600 051.
b)	Three persons having special knowledge or practical experience in different aspects of veterinary and animal sciences to be nominated by the Vice-Chancellor
	1. C.Latha, PhD, FNAVS Dean - Faculty of Veterinary Sciences, KVS, (Professor and University Head, Dept of Vety. Public Health, College of Veterinary and Animal Sciences), Mannuthy,

	Thrissur -680651, Kerala State. **2. Dr.J.V.Ramana, MVSc, PhD, FNAVS, FANA** Controller of Examinations, Sri Venkateswara Veterinary University, Dr.YSRBhavan, Tirupathi - 517 502, Andhra Pradesh **3. Dr.N.Prakash, MVSc, PhD, FNASc (AW)** Dean, Veterinary College, Shivamoga, Karnataka Veterinary, Animal & Fisheries Sciences University, Bidar- 577 204, Karnataka State
c)	The Controller of Examinations, TANUVAS, Chennai

• Frequently of the Board Meeting and Academic Advisory Body	Yes
• Organizational chart and processes	Yes
• Nature and Extent of involvement of Faculty and students in academic affairs/improvements	Yes
• Mechanism/ Norms and Procedure for democratic/ good Governance	Yes
• Student Feedback on Institutional Governance/ Faculty performance.	Yes
• Grievance Redressal mechanism for Faculty, staff and students	Yes
• Establishment of Committee for SC/ST	Yes
•	
• Establishment of Online Grievance Redressal Mechanism	Yes
• Establishment of Grievance Redressal Committee in the Institution and Appointment of OMBUDSMAN by the University	Yes
• Establishment of Internal Complaint Committee (ICC)	Yes
• Establishment of Anti Ragging Committee	Yes
• Internal Quality Assurance Cell	Yes

6. Programmes

• Name of Programmes approved by AICTE	B.Tech (Poultry Technology)
• Name of Programmes Accredited by NBA	NIL
• Status of Accreditation of the Courses	NIL
• Total number of Courses	One
• No. of Courses for which applied for Accreditation	NIL
• Status of Accreditation – Preliminary/ Applied for SAR and results awaited/ Applied for SAR and visits completed/ Results of the visits awaited/ Rejected/ Approved for . . .Courses (specify the number of	

courses)

For each Programme the following details are to be given(Preferably in Tabular form):

Name	B.Tech (Poultry Technology)
Number of seats	40
Duration	4 Years

Cut off marks/rank of admission during the last three years

Community	2019-20	2020-21
OC	166.00	140.50
BC	151.50	130.00
BCM	-	-
MBC	154.00	126.00
SC	155.00	122.50
SCA	-	140.50

Fee (as approved by the state government)

(i) For BTech courses (Food Technology / Poultry Technology / Dairy Technology) – 8 Semesters including industrial training for each course:

Sl. No.		Particulars	Semesters			
			I	II, IV & VI	III, V & VII	Industrial training
1		**Tuition Fees***	4000	4000	4000	4000
2	i)	**Examination Fees –** Internal / Practical	2000	2000	2000	2000
	ii)	Final Examination	1000	1000	1000	-
3		**Special Fees**				
	i)	College Magazine	200	200	200	-
	ii)	University Calendar	50	-	50	-
	iii)	Library Fees	200	200	200	-
	iv)	Sports, Games charges	100	100	100	-
	v)	Computer charges	200	200	200	-
	vi)	Laboratory contingency fund	500	500	500	-
	vii)	Registration, enrollment fees	100	-	-	-
	viii)	Admission fees	200	-	-	-
	ix)	Syllabus	100	-	-	-
	x)	Identity Card	100	-	-	-
	xi)	Career Counselling charges	20	20	20	-
	xii)	Transport charges	100	100	100	-
	xiii)	Day Scholar amenity	100	-	100	-
	xiv)	Lab Fund **	1000	-	-	-
4		**Other charges**				
	i)	Students Association	400	-	400	-
	ii)	Alumni Association	50	-	50	-
	iii)	Student accident medical relief fund	350	-	350	-
	iv)	Certificate Verification Charges	50	-	-	-
	v)	Transcript Card / Degree Certificate charges	400	-	-	-
	vi)	Co-operative Society fees: (Membership fee Rs. 10/-, Share Capital Rs.15/- and Trade Deposit Rs. 100/- ***)	125	-	-	-
	vii)	Library Caution Deposit***	250	-	-	-
	viii)	Blazer Charges	2000	-	-	-
Total			**13,595**	**8,320**	**9,270**	**6,000**

**SC / SCA / ST / Differently-abled candidates of Tamil Nadu are exempted from paying tuition fees as per G.O.(Ms.) No.27 of Animal Husbandry, Dairying and Fisheries(AH6) Department, dated 22-02-2010; For BC/MBC/DNC, fees exemption will be followed as prescribed by the Government of Tamil Nadu.*
***Non-refundable;*
****Refundable*
Students have to pay Rs. 10/- towards NSS Subscription at the time of admission to the Deans' of the concerned colleges.

Placement Facilities	100% Placement
Campus placement in last three years with minimum salary ,maximum salary and average salary	Minimum salary – 25,000/- Maximum salary – 35,000/- Average salary - 30,000/-
Name and duration of Programme(s)having Twinning and Collaboration with Foreign University(s) and being run in the same Campus along with status of their AICTE approval. If there is Foreign Collaboration, give the following details:	Not Applicable

7. **Faculty**

List Faculty members: Department wise

Department of Poultry Business Management

- Dr. P. Shamsudeen
- Dr. A.Sundaresan
- Dr. S. Prakash

Department of Poultry Engineering

- Dr. G. Raj Manohar
- Dr. S. Santhosh Kumar

Department of Poultry Technology

- Dr.D.Jayanthi
- Dr. M. Anandhi
- Dr. K. Rajendra Kumar

Department of Poultry Business Management

- Dr. J. Ramesh
- Dr A Karthiayani
- Dr.C.Senthamil Pandian

Permanent Faculty - 11
Adjunct Faculty – 2
Permanent Faculty: Student Ratio –11:160
Number of Faculty employed and left during the last three years- 2

8. Profile of Vice Chancellor/ Director/ Principal/Faculty

Profile of Dean

Name	Dr S T Selvan Ph.D., Dean College of Poultry production and management Hosur
Unique ID/ PAN	AADPT3251H
Education Qualifications	Ph.D., (Poultry science)
Work Experience	
Teaching	26
Research	26
Industry	
others	
Area of Specialization	Poultry science (Avian Nutrition and Breeding)

Courses taught at Diploma/ Post Diploma/ Under Graduate/ Post Graduate/ Post Graduate Diploma Level	20

Research guidance (Number of Students)

Master (Completed/Ongoing)	8
Ph.D. (Completed/Ongoing)	2

Projects Carried out

- Principal investigator for Women Empowerment through Homestead Turkey Farming By Self Help Group in Theni District of Tamil Nadu Rs.10.195 lakhs funded by Animal Husbandry Department, Government of Tamil Nadu
- Principal investigator for Efficacy of toxin binders against aflatoxin, ochratoxin and citrinin in broiler feeding
  Principal investigator Rs. 2.79 lakhs funded by M/s. Kemin Nutritional Technologies, Pvt. Ltd
- Co-Principal investigator for Evolving optimum management practices and nutritional requirements of turkeys Rs. 12.28 lakhs
  ICAR Ad hoc scheme, New Delhi
- Co-Principal investigator for Establishment of Ostrich Research Unit Rs. 54.23 lakhs funded by Animal Husbandry Department, Government of Tamil Nadu

Research Publications (No.of papers published in National/International Journals/Conferences)	Research article:25
No. of Books published with details (Name of the book, Publisher with ISBN, year of publication, etc.)	2

Dr. P. Shamsudeen,

Name of faculty	:	Dr. P. Shamsudeen, Professor and Head Department of Poultry Management, College of Poultry Production and Management , Hour – 635 110
PAN	:	AMDPS5713K
Highest Qualification	:	Ph.D – Poultry Science

Related work experience in field (mention in years)

i. Teaching	:	21 years
ii. Research	:	21 years
iii. Extension	:	21 years

Details of courses handled (in bullet points):

PG –Courses

1. PPT 501 – Advances in Housing and Management of poultry

UG-Courses

1. PSE 311 – Commercial broiler production
2. PSE 121 – Fundamentals of microbiology
3. PST 414 – Experiential Learning
4. PST 315 – Egg composition and quality
5. PST 221 – Hatchery management
6. PST 211 – Applied poultry nutrition

Research Guidance

Chairman (Completed)	:	M.V.Sc : 03 PG Diploma : 1
Member (Completed)	:	M.V.Sc – 03 Ph.D - 03

Projects

Ongoing (write the title of project serially)	:	• ICAR – Poultry Seed Project – Co-coordinator • Co-ordinator for University Revolving fund scheme on "Establishment of breeder quail unit at CPPM, Hosur". • Co-Coordinator for University Revolving fund scheme on "Establishment of commercial broiler unit at CPPM, Hosur". • Co-Coordinator for University Revolving fund scheme on "Establishment of Aseel unit at CPPM, Hosur".
Publications	:	Research articles – 28 Research abstracts – 37

Dr J Ramesh

Name of Faculty	:	Dr. Ramesh, J. Professor and Head Department of Poultry Business Management College of Poultry Production and Management
PAN	:	AGBPR0198R
Highest Qualification	:	Ph.D. (Poultry Science)
Related Work Experience in Field (mention in years)	:	
i. Teaching	:	14
ii. Research	:	14
iii. Extension	:	11
Continuous documented Excellence in Teaching	:	-Nil-

Details of Courses handled (in bullet points) :

- PPT-223, Poultry Products Processing Technology (2+1)
- PST 123, Poultry Anatomy and Physiology (1+1)
- PPT-311, Commercial Layer Production (2+1)
- PST-111, Overview of Poultry Industry (2+1)

- PST 324, Packaging of Poultry Products (2+1)
- PST-321, Diversified Poultry and Ratite Management
- SPC 115, Biochemistry (2+1)
- PPE 213, Design and Construction of Poultry House (2+1)
- PPE 216, Design of Poultry House, Hatchery and Feed Mill Equipment (2+1)
- PSE 123, Poultry Housing and Environment (3+1)
- PST 313, Poultry flock health and Bio-Security (2+1)
- PTE 312, Hatchery Technology (2+1)
- PEG 321, Construction of Poultry House and its Equipment (2+1)
- PBM 415, Entrepreneurship Development and Communication Skill (1+1)
- PPT 507, Poultry Business Management and International Trade (2+1)

Research Guidance : One M.V.Sc. student
Chairman (Completed) : 01
Member (Completed) : -Nil-
Other demonstrated competencies
(publications, projects handled)
Projects

Completed (write the title of project serially) :

- ICAR Scheme on "Antioxidant effects of turmeric in aflatoxicosis". The scheme has been appreciated by the Assistant Director General (Animal Health), ICAR, New Delhi.
- ICAR– Adhoc Scheme on "Evolving optimum management practices and nutritional requirements of turkeys".
- Project funded by Agricultural and Processed Food Products Export Development Authority (APEDA), Government of India, New Delhi "Strengthening of Pharmacovigilance Laboratory for Animal Feed and Food Safety under WTO norms for the export of Livestock Products"
- Collaborated Project between DST, New Delhi, TANUVAS and NeosparkPvt. Ltd., Hyderabad under Public – Private Partnership for the Research Scheme "Development of Novel Mycotoxin Binders for the Management of Mycotoxicosis in Animals and Human"
- TANUVAS Research Corpus Fund – 2013-2014, on "Development of Rapid Screening Methods for Monitoring Gossypol in Feed and Livestock Products".

Ongoing : -Nil-
(write the title of project serially)
Publications : Research articles –28

Dr.G.Raj Manohar

Name of faculty : Dr.G.Raj Manohar

Associate Professor & Head

Department of Poultry Engineering

College of Poultry Production and Management, Hosur-635 110. Krishnagiri District, Tamil Nadu.

PAN : APZPR6555H

Highest Qualification : Ph.D. (Poultry Science)

Related work experience in field (mention in years)

i. Teaching : 12

ii. Research : 1

iii. Extension : 1.5 years

Details of courses handled (in bullet points) :

B.V.Sc & AH –Poultry Science Courses handled:

- LPM 322-Avian Breeding, Feeding and Management (3+1)
- B.V.Sc & AH -LPM 211-Avian Production Management (1+1)
- B.V.Sc & AH -LPM 221-Commercial Poultry Production and Hatchery Management (1+1)
- **M.V.Sc.in Poultry Science Courses** Commercial Layer Production (2+1) and Commercial Broiler Production (2+1)

B.Tech (Poultry Technology) Courses handled:

- B.Tech (PPT)-PST 111- Overview of Poultry Industry (2+1)
- B.Tech (PPT)-PST 221- Hatchery Management (1+1)
- B.Tech (PPT)-PST 311-Commercial Layer Production (2+1)
- B.Tech (PPT)-PST 321-Diversified Poultry and Ratite Management (2+1)
- B.Tech (PT)-PSE 113-Introduction to Poultry Sector (2+0)
- B.Tech (PT)-PSE 312-Diversified Poultry and Ratite Management (2+1)

M.Tech (Poultry Technology) Courses handled:

- M.Tech (PT)-PPT 512-Recent developments in Diversified Poultry Production (2+1).

Research Guidance

Chairman (Completed) : 01

Member (Completed) : 5

Projects

Completed (write the title of project serially):

1) **E-Course Content Developer** - Development of e-courses for BVSc& AH degree programme under ICAR-NAIP Scheme (Total Budget Outlay-Rs.255.26 lakhs).
2) Evaluation of Varam (a Growth Promoter) on the Production Performance of Broiler Chicken

(Co-Principal Investigator)

Ongoing : Revolving Fund Scheme on "Establishment of Kadaknath Chicken unit at CPPM, Hosur".

(write the title of project serially)

ICAR – Poultry Seed Project – Co-coordinator

Publications : Research articles –09

Dr. A. Sundaresan

Dr M. Anandhi

Name of faculty	:	Dr M. Anandhi Assistant Professor Department of Poultry Technology College of Poultry Production and Management, Hosur
Pan	:	BFWPA1053F
Highest Qualification	:	M.V.Sc,
Related work experience in field (mention in years)		
i. Teaching	:	9 years and 10 Months
ii. Research	:	9 years and 10 Months
iii. Extension	:	9 years and 10 Months

Continuous documented excellence in teaching

Details of courses handled (in bullet points):

- PTE 212- Egg Composition and quality
- PTE 222 -Value added egg Products
- PST 124 Basic Poultry Nutrition
- PBM 212 Concepts of Business Management
- PST 323 Hatchery Management
- PST 221 Diversified Poultry and Ratite Management

Research Guidance		
Chairman (Completed)	:	Nil
Member (Completed)	:	Nil
Projects		
Completed (write the title of project serially): • Co-PI of GOI-National Livestock Mission Project on "Establishment of Feed testing laboratory" at CPPM, Hosur (Rs 28.00 lakhs).		
Ongoing (write the title of project serially): ICAR – Poultry Seed Project – Co-coordinator		
Publications	:	Research articles –07

Dr.C.Senthamil Pandian

Name of faculty	:	Dr.C.Senthamil Pandian, Assistant Professor Department of Poultry Business Management College of Poultry Production and Management, Hosur
Pan	:	AIMPC6280A
Highest Qualification	:	M.V.Sc.,
Related work experience in field (mention in years)		
i. Teaching	:	6 years and 1 month
ii. Research	:	1 year and 3 months
iii. Extension	:	1 year and a month
Details of courses handled (in bullet points) : • PST 327 Applied Poultry Nutrition (2+1) for 2012-13 batch		

- PST 312 Poultry Feed Milling and Feed Manufacturing Technology (2+1) for 2013-14 batch
- PST 312 Poultry Feed Milling and Feed Manufacturing Technology (2+1) for 2014-15 batch
- PST 124 Basic Poultry Nutrition (2+1) for 2015-16 batch
- PPE 214 Design and construction of hatchery, feed mill, egg and poultry processing plants (2+1) for 2015-16 batch
- PPE 216 Design of Poultry House, Hatchery and feed mill equipment (2+1) for 2015-16 batch
- PST 124 Basic Poultry Nutrition (2+1) for 2016-17
- Handled Basic Poultry Nutrition (2+1), Applied Poultry Nutrition (2+1) and Poultry Feed milling and manufacturing Technology (2+1) and Design of Poultry House, Hatchery and feed mill equipment (2+1) courses for 2017-18 batch
- Handled Basic Poultry Nutrition (2+1) and handling Applied Poultry Nutrition (2+1) courses for 2018-19 batch B.Tech (PT)

Research Guidance		
Chairman (Completed)	:	Nil
Member (Completed)	:	Nil
Other demonstrated competencies (publications, projects handled)		• Established Feed Manufacturing Unit at CPPM, Hosur as a model unit for teaching UG students. • Established TANUVAS SMART Mineral Mixture Production Unit at CPPM, Hosur as a model unit for teaching UG students.
Projects		

Completed (write the title of project serially):

- Assisted PI and Co-PI of the Scheme to complete the NADP Scheme on "Popularizing Model Fodder Seed Bank at Farmer's field to Augment Fodder Production" at Mecheri Sheep Research Station, Pottaneri.Rs.19.45 lakhs (MSRS- Rs 6.08 lakhs)
- Co-PI of Indian Council of Agricultural Research (ICAR) Mecheri Sheep Seed Project at Mecheri Sheep Research Station, Pottaneri. Rs.108.05 lakhs.
- Co-PI of GOI-National Livestock Mission Project on "Establishment of Feed testing laboratory" at CPPM, Hosur (Rs 28.00 lakhs).
- Co-PI of NABARD project on "Popularization of Namakkal chicken to rural households of Krishnagiri for additional revenue generation" at CPPM, Hosur (Rs 2.99 lakhs).

Ongoing (write the title of project serially):

- Co-coordinator of Revolving fund scheme on "TANUVAS SMART Mineral Mixture Production Centre at CPPM, Hosur" (Rs 3.00 lakhs).
- Co-coordinator of Revolving fund scheme on "Establishment of Feed Manufacturing Unit at College of Poultry Production and Management, Hosur" (Rs 27.00 lakhs.

Publications	:	Research articles –06

Dr. S. Santhosh Kumar

Name of faculty	:	Dr S. Santhosh Kumar, Assistant Professor Department of Poultry Business Management College of Poultry Production and Management, Mathigiri, Hosur – 635 110
Pan	:	CBBPS7283P
Designation of the faculty	:	Assistant Professor

Highest Qualification	:	M.V.Sc.,
Related work experience in field (mention in years)		
i. Teaching	:	17.03.2015 to till date (05 Y 04 M 11 D)
ii. Research	:	-
iii. Extension	:	14.06.2013 to 16.03.2015 (2 Y 07 M 02 D)

Continuous documented excellence in teaching

Details of courses handled (in bullet points) :

- SPC 118 ; PSE 121 - Fundamentals of Microbiology
- SPC 317 - Techniques in Food Analysis
- PTE 121 - Environmental Sciences and Disaster Management
- PST 123 - Poultry Anatomy and Physiology
- SPC-316 - Food Safety and microbial standards
- PST 313 - Poultry flock health and Bio-security
- PST 325 - Quality control of Poultry meat and products
- PBM 411 - International Trade food laws and regulations

Research Guidance

Chairman (Completed)	:	Nil
Member (Completed)	:	Nil
publications	:	Nil

Projects

Completed (write the title of project serially):

As co-coordinator in the following schemes :

- Establishment of feed manufacturing unit at CPPM, Hosur
- Evaluation of VARAM (a growth promoter) on the production performance of broiler chicken
- Foldscopes as a tool for testing storage quality of processed liquid food

Ongoing(write the title of project serially)	:	Nil
Publications	:	Research articles –02

Dr K. Rajendra Kumar

Name of faculty	:	Dr K. Rajendra kumar Assistant Professor Department of Poultry Technology College of Poultry Production and Management, Hosur
Pan	:	BZZPK1894D
Highest Qualification	:	M.V.Sc, (Meat Science and Technology)
Related work experience in field (mention in years)		
i. Teaching	:	8 years and 10 Months
ii. Research	:	8 years and 10 Months
iii. Extension	:	-

Continuous documented excellence in teaching

Details of courses handled (in bullet points):

- PST 314 – Primary Processing and preservation of poultry (2+1)

- PSD 411 – Experiential learning (0+10)
- PST 322 – Quality Control of Poultry Meat and Products (1+1)
- PST 322 – Poultry Meat Processing Technology (2+1)
- PPE 222 – Packaging of Poultry Products (2+1)
- PST 413 – Poultry By Products and waste Management (2+1)
- PPE 225 -Design of egg and Poultry Processing plant Equipment (2+1)
- PTE 212- Egg Composition and quality
- PTE 222 -Value added egg Products

Research Guidance

Chairman (mention in numbers) : -

Member (mention in numbers) : -

Other demonstrated competencies (publications, projects handled)

Projects :

Completed :

(write the title of project serially)

Ongoing (write the title of project serially):

- ICAR – Poultry Seed Project – Co-coordinator
- Experiential Learning – Setting up of facilities for Hands-on training on model turkey post harvest technology unit - Co-coordinator

Publications : Research articles –02

Dr S. Prakash

Name of faculty	:	Dr S. Prakash Assistant Professor Department of Poultry Management College of Poultry Production and Management, Hosur
Pan	:	DKKPS9219C
Highest Qualification	:	M.V.Sc, (Poultry science)

Related work experience in field (mention in years)

i. Teaching : 4 years 6 months

ii. Research : 4 years 6 months

iii. Extension : -

Continuous documented excellence in teaching

Details of courses handled (in bullet points):

- PST 412: Poultry Economics and Marketing (2+1) (2016-17 Batch)
- PBM 211: Poultry Economics and Marketing (2+1) (2018-19 Batch)
- PBM 321: Fundamentals of Agribusiness Management (2+0) (2017-18 batch)
- PEG 322: Construction of Poultry Hatchery, Feed mill and its Equipment (2+1) (2017-18batch)
- PSE 122 : Introduction to Poultry Management (2+1) (2019-20 batch)
- PSE 411: Breeder Flock Management (2+1) (2017-18 batch)
- PSD 441 Experiential learning (0+5) (2017-18 batch)
- PBM 211: Poultry Economics and Marketing (2+1) (2019-20 Batch)
- PSE 113: Introduction to Poultry Sector (2+0) (2020-21 Batch)
- PBM 321: Fundamentals of Agribusiness Management (2+0) (2018-19 batch)
- PSD 321 Experiential learning (0+5) (2018-19 batch)
- PSE 411: Breeder Flock Management (2+1) (2018-19 batch)

Research Guidance

Chairman (mention in numbers) : -
Member (mention in numbers) : -
Other demonstrated competencies (publications, projects handled)
Projects :
Completed :
(write the title of project serially)
Ongoing (write the title of project serially):

- Co-Coordinator for University Revolving fund scheme on "Establishment of commercial broiler unit at CPPM, Hosur".
- Co-Coordinator for University Revolving fund scheme on "Establishment of Aseel unit at CPPM, Hosur".
- ICAR – Poultry Seed Project – Co-coordinator

Publications : Research articles –02

9. **Fee**

Details of Fee, as approved by State Fee Committee, for the Institution

(i) For BTech courses (Food Technology / Poultry Technology / Dairy Technology) – 8 Semesters including industrial training for each course:

Sl. No.		Particulars	Semesters			
			I	II, IV & VI	III, V & VII	Industrial training
1		**Tuition Fees***	4000	4000	4000	4000
2	i)	**Examination Fees –** Internal / Practical	2000	2000	2000	2000
	ii)	Final Examination	1000	1000	1000	-
3		**Special Fees**				
	i)	College Magazine	200	200	200	-
	ii)	University Calendar	50	-	50	-
	iii)	Library Fees	200	200	200	-
	iv)	Sports, Games charges	100	100	100	-
	v)	Computer charges	200	200	200	-
	vi)	Laboratory contingency fund	500	500	500	-
	vii)	Registration, enrollment fees	100	-	-	-
	viii)	Admission fees	200	-	-	-
	ix)	Syllabus	100	-	-	-
	x)	Identity Card	100	-	-	-
	xi)	Career Counselling charges	20	20	20	-
	xii)	Transport charges	100	100	100	-
	xiii)	Day Scholar amenity	100	-	100	-
	xiv)	Lab Fund **	1000	-	-	-
4		**Other charges**				
	i)	Students Association	400	-	400	-
	ii)	Alumni Association	50	-	50	-
	iii)	Student accident medical relief fund	350	-	350	-
	iv)	Certificate Verification Charges	50	-	-	-
	v)	Transcript Card / Degree Certificate charges	400	-	-	-
	vi)	Co-operative Society fees: (Membership fee Rs. 10/-, Share Capital Rs.15/- and Trade Deposit Rs. 100/- ***)	125	-	-	-
	vii)	Library Caution Deposit***	250	-	-	-
	viii)	Blazer Charges	2000	-	-	-
Total			**13,595**	**8,320**	**9,270**	**6,000**

**SC / SCA / ST / Differently-abled candidates of Tamil Nadu are exempted from paying tuition fees as per G.O.(Ms.) No.27 of Animal Husbandry, Dairying and Fisheries(AH6) Department, dated 22-02-2010; For BC/MBC/DNC, fees exemption will be followed as prescribed by the Government of Tamil Nadu.*
***Non-refundable;*
****Refundable*
Students have to pay Rs. 10/- towards NSS Subscription at the time of admission to the Deans' of the concerned colleges.

Time schedule for payment of Fee for the entire Programme

Date of commencement of each semester without fine and 07 days with fine

No. of Fee waivers granted with amount and name of students

The following students are exempted from paying the tuition fees of Rs. 4000/-

S.No.	I.D.No.	Name of the student	Community	Amount (Rs)
1.	BTP 20002	R. Abisheki	SC	4000/-
2.	BTP2003	S.Archana	BC	4000/-
3.	BTP 20008	N.HarishJayarai	SC	4000/-
4.	BTP 20009	V.Hemamalini	BC + FG	4000/-
5.	BTP 20010	M. Jagadeeshwari	SC	4000/-
6.	BTP 20011	S. Jagatheeshbabu	BC + FG	4000/-
7.	BTP20014	V.Karthika	SC	4000/-

8.	BTP20015	V.Kaviya	MBC	4000/-
9.	BTP20018	S.Madhumithran	SC	4000/-
10.	BTP20019	C.Meera	MBC +FG	4000/-
11.	BTP20020	V.Mohanraj	BC+ FG	4000/-
12.	BTP20022	M.Pavithra	SC	4000/-
13.	BTP20024	K.Premkumar	SC	4000/-
14.	BTP20026	P.S.Shrinath	BC + FG	4000/-
15.	BTP20027	P.B.Sindhuja	BC + FG	4000/-
16.	BTP20028	M.Srimathi	SC	4000/-
17.	BTP20029	K.Subiksha	SC	4000/-
18.	BTP20031	M.Thatchanamoorthi	MBC + FG	4000/-
19.	BTP20032	D. Thirumalaivasan	SC	4000/-
20.	BTP20034	T.M. Varunbabu	SC	4000/-
21.	BTP20035	S. Vikram	MBC +FG	4000/-
22.	BTP20036	R.Yogesh	MBC + FG	4000/-
23.	BTP 20002	R. Abisheki	SC	4000/-
24.	BTP2003	S.Archana	BC	4000/-
25.	BTP 19001	K.Abirami	MBC+FGC	4000/-
26.	BTP 19004	G.S.Bhargavi	SC	4000/-
27.	BTP 19014	A. Narendraprasath	SCA	4000/-
28.	BTP 19017	V.Preethi	BC+FGC	4000/-
29.	BTP 19018	A.Pugalmathi	SC	4000/-
30.	BTP 19019	S.RanjithKumar	MBC+FG	4000/-
31.	BTP 19021	M.Sureshkumar	MBC+FG	4000/-
32.	BTP 19023	S.Vijayakanth	MBC+FG	4000/-
33.	BTP 19024	S.Vinoth	MBC+FG	4000/-
34.	BTP 18002	Anish.B	BC (M) + FG	4000/-
35.	BTP 18003	Bharathiraja. P	SC	4000/-
36.	BTP18006	Divaakaran. P	MBC + FG	4000/-
37.	BTP18007	Gerald. M	BC + FG	4000/-
38.	BTP18011	Nandha Kumar. R	MBC + FG	4000/-
39.	BTP18012	Naveen. S	SC	4000/-
40.	BTP18013	Niranjan. V	SC	4000/-
41.	BTP18014	Priyadarshini. K	SC(A)	4000/-
42.	BTP18015	Ramya. G	BC + FG	4000/-
43.	BTP18017	Sanjay Kumar.M	BC + FG	4000/-
44.	BTP18019	Sharma.K	SC	4000/-
45.	BTP18020	SibiSiddharth. E	SC	4000/-
46.	BTP18021	Sonikka. R	MBC + FG	4000/-
47.	BTP18025	Vima. V	MBC + FG	4000/-

Number of scholarship offered by the Institution, duration and amount	-
Criteria for Fee waivers/scholarship	Family income below 1 lakh First graduate

	Category
Estimated cost of Boarding and Lodging in Hostels	3,000/- Per month
Any other fee please specify	Nil

10. **Admission**

Number of seats sanctioned with the year of approval	2018-19= 60 Seats 2019-20= 60 Seats 2020-21= 60 Seats
Number of Students admitted under various categories each year in the last three years	2018-19= 23 Seats 2019-20= 22 Seats 2020-21= 31 Seats
Number of applications received during last two years for admission under Management Quota and number admitted	Nil

11. **Admission Procedure**

Mention the admission test being followed, name and address of the Test Agency/State Admission Authorities and its URL (website)	http://www2.tanuvas.ac.in/Ugadmission/Dashboard/frmIndex.aspx
Number of seats allotted to different Test Qualified candidate separately (AIEEE/ CET (Stateconducted test/ University tests/ CMAT/ GPAT)/ Association conducted test etc.)	**NA**

Calendar for admission against Management/vacant seats: No Management seats

Last date of request for applications
Last date of submission of applications
Dates for announcing final results
Release of admission list (main list and waiting list shall be announced on the same day
Date for acceptance by the candidate (time given shall in no case be less than 15days)
Last date for closing of admission
Starting of the Academic session

The waiting list shall be activated only on the expiry of date of main list	
The policy of refund of the Fee, in case of withdrawal, shall be clearly notified	

12. **Criteria and Weightages for Admission**

Describe each criterion with its respective weightages i.e. Admission Test, marks in qualifying examination etc.	Based on state government norms
Mention the minimum Level of acceptance, if any	NA
Mention the cut-off Levels of percentage and percentilescore of the candidates in the admissiontest for the last three years	NA
Display marks scored in Test etc. and in aggregate for all candidates who were admitted	Yes

13. **List of Applicants**

List of candidate whose applications have been received along with percentile/percentages core for each of the qualifying examination in separate categories for open seats. List of candidate who have applied along with percentage and percentile score for Management quota seats (merit wise)	

14. **Results of Admission Under Management seats/Vacant seats**

Composition of selection team for admission under Management Quota with the brief profile of members (This information be made available in the public domain after the admission process is over)	
Score of the individual candidate admitted arranged in order or merit	
List of candidate who have been offered admission	
Waiting list of the candidate in order of merit to be operative from the last date of joining of the first list candidate	
List of the candidate who joined within the date, vacancy position in each category before operation of waiting list	

15. **Information of Infrastructure and Other Resources Available**

Number of Class Rooms and size of each	Three class room of 66 Sq.m
Number of Tutorial rooms and size of each	One Tutorial room of 68 Sq.m
Number of Laboratories and size of each	10 laboratory of 819Sq.m

Number of Drawing Halls with capacity of each	One drawing hall of 135 Sq.m
Number of Computer Centres with capacity of each	One with 150 sqm
Central Examination Facility, Number of rooms and capacity of each	286.4 Sq.mwith seating capacity of 80 students
Online examination facility (Number of Nodes, Internet bandwidth, etc.)	One nodes with 100 mbps
Barrier Free Built Environment for disabled and elderly persons	Yes
Occupancy Certificate	Yes
Fire and Safety Certificate	Yes

Hostel Facilities

Hostels: Clearly mention the number of hostels available for the College students for boys and girls, separately with its total capacity, students per room accommodated in each hostel, mess facility, drinking water, indoor games specially for girls, cleaning of hostel premises, transport facility, emergency medical facility etc.

Boys and Girls Hostel Separate block with following infrastructure

No. of rooms/ block	80 in each block
No. of students/ room	2
Rest rooms/toilets per block	Attached bathroom and toilet for twenty rooms Common toilet (10Nos) and bathroom (10Nos) in first floor for twenty room
Mode and frequency of cleaning and disinfectant, mosquito proofing, etc.	Cleaning and disinfection: daily Mosquito proofing is provided for all the rooms

Dining with following facilities

Seating capacity	80
Washing facility for vessels	Yes
Kitchen/amenities present	• Chapathi flour kneader • Chapathi making machine • Grinder • Mixie • Chimney • Dining table • Refrigerator, • Solar water heater 400 lit

- RO water plant 500 lit

Library

Number of Library books/ Titles/ Journals available(Programme-wise)	2033
List of online National/ International Journals subscribed	6
E- Library facilities	Yes
National Digital Library(NDL) subscription details	Yes

Mention the information about location of the library, present staff position (in place) and availability of Wi-Fi, sufficient books and other reading materials, periodicals and research journals, internet with sufficient number of computers, seating capacity, employing the latest technology in library sciences, stocking arrangements, collection of volumes on different subjects, latest publications in the fields of relevant subjects, automation and user services through computer, opening hours, subscription of journals of national and international repute, national dailies, magazines etc.

- **Location of the library:** with in the Campus
- **Present staff position (Sanctioned and in place.)** 1.Library In-charge & CL
- **Availability of Wi-Fi with speed/ band width:** 100 mbps
- **No. of computers with internet available for students:** 10 nos
- **Books (Nos.):**2033

S. No.	No. available for		Journals subscribed		Periodicals, dailies, magazines and others (Nos. according to category)
	Issue	Reference	Online	physical	
1	1511	522	75	5	Daily Newspaper 5 nos

- **Seating capacity: (Maximum number of students at any given time)** 50 nos
- **Latest technology and innovations: (each in bullet points under each heading)**

a. Lending

- Activated library using Koha ILMs
- RFID enabled Security system
- CCTV Electronic Surveillance System
- Biometric Access Control System

b. Preservation of documents/ binding- Digitalize

- Digitalization of institution Repository
- Binding

c. Digital access

- Remote access to all e-resources

d. Book and periodical arrangements

- Colon Classification
- Classified Catalogue

e. Online cataloguing

- Online public access catalogue (KOHA)

f. Photocopying

- RICOH MP2001L

g. CERA facility

- CERA access provided to all users

h.Krish-kosh and others

- Krish-kosh access provided
- Faculty publication are digitized & periodically uploaded into Krish-kosh

j. Working hours and arrangements during holidays

Week days 9AM to 5 PM, Saturday 9AM to 1 PM and Sunday - holiday

Laboratory and Workshop

List of Major Equipment/Facilities in each Laboratory/Workshop

Poultry Technology Primary processing and further processing

- High Performance Liquid Chromatography
- Protein Analyser
- Automated Fibre Analyser
- Automated Fat Analyser
- Gas Chromatography
- UV Spectrometer
- Gas chromatography
- Chicken dressing unit (Capacity 200 to 500 Birds/Day)
- Chicken carcass cutting machine(Portioning machine)
- Deboning cones with table
- Packing table SS
- Ice making machine
- Meat mincer
- Bowl Chopper
- Automatic patty forming machine
- Meat slicer
- Knife sterilizer
- Stainless steel electrical deep fryer
- Grilled chicken Machine
- Baking oven (Hot air oven with multi-purpose usage)
- Vacuum tumbler
- Tissue homogenizer
- Weighing balance 6 kg
- Weighing balance 50 kg
- Weighing balance 120 gm
- Refrigerator 220 litre
- Digital colony counter
- Laminar air flow vertical
- Refrigerated centrifuge
- UV Spectrometer
- Water distillation unit-double

- Deep freezer-vertical
- Hot air oven
- Incubator
- pH meter

Poultry engineering – Physics

- Diffraction Grating
- Mercury Lamp set
- Spectrometer 6” deep vision
- Spherometer 3cm gap bet legs
- Slotted weight 50gms
- Stop clock
- Thermometer 1100c
- Travelling microscope
- Triangle prism EDF 32X32mm
- Torsion pendulum set
- Torsion pendulum bob (100gms)
- Weighing balance
- Wooden scale
- Steel scale 1m
- Steel scale 30cm

Electrical engineering laboratory

- Single phase transformer – 2kva
- Single phase transformer – 3kva
- Three point starter
- Four point starter
- DOL starter
- Manual delta starter
- Semi automatic – delta starter
- Automatic – delta starter
- Induction motor 3Hp – slip ring
- Induction motor 3hp squirrel case
- 3 phase energy meter - electronic
- Single phase auto transformer 15amps
- Single phase resistance loading bank 15amps
- Three phase auto transformer - 15 amps
- Loading frame drum spring balance with belt
- Lamp load 10amps – single phase
- Portable AC voltmeter
- Portable AC ammeter
- Watt meter UPF
- Tachometer – digital
- Hylum panel board
- Main switch 1 fuse terminal

Civil Engineering Laboratory

- Theodolite with tripoid stand
- Survery chain 30m with 10 amoun
- Tape 30 m
- Prismatic compass with stand
- Plane table and accessories with stand
- Ranging rod 3m long
- Surveyors compass with stand
- Hand help GPS gramintrex
- Cross staff
- Leveling staff 4m 3fold
- Dumpy level with all accessories
- Flow table
- Viscet needle apparatus
- Aggregate impact tester
- Vee Bee consistometer
- Pycknometer
- Le Chateller mould
- B Laine's Air Permeability apparatus
- Flakiness gauge
- Elongation gauge
- Slump test apparatus

Applied Electronics and Instrumentation Laboratory

- Thermocouple module ITB - 05
- IT Temperature sensor AD590 – ITB05B
- RTD module - ITB 06 -CE
- Thermsitor module ITB 06 CE
- U – Tube manometer study traniner
- Leavel measurement trainer
- Humidity and temperarture measurement trainer module ITB 043
- Discharge coefficient of orifice plate VFMT 03
- Discharge coefficient of venturimeter VFMT 03A
- Speed measurement and closed loop control of DC motor using photoelectric pickup and tacho generator ITB –PE C007
- Anemometer demonstrator setup
- Sunshine recorder
- Level process controller
- Temperature process controller – temperature VT(A – W – 32)
- Flow Process controller VFPA- 20 CE
- Pressure process controller VPPA 401 – 401CE
- Ammeter (0 – 500 micro amps)
- Ammeter (0 – 100 amps)
- Ammeter (0 – 10 milli amps)
- Ammeter (0 – 30 milli amps)
- Voltmeter 0 – 1V
- Voltmeter 0 – 10v

- Voltmeter 0 – 30 v
- Dual power supply
- CRO
- Function generator
- Digital multimeter
- Decade resistance box
- Decade capacitance box
- Pump application trainer (TOPAT) 100

Mechanical engineering laboratory

- Flash and Fire point
- Lathe Machine 4.5" x 6.5" x 4.0"
- Drilling Machine
- Bench Grinder
- Welding Machine -- 20amps
- Hack Saw Machine
- Anvil
- Swage block
- Drilling Machine - Hand drill
- Flatter
- Fuller
- Flat Tong

Refrigeration and Air conditioning Laboratory

- Air Conditioning test Rig Apparatus
- Refrigeration Test Rig Apparatus
- Ice Plant Tutor Apparatus
- Cooling Tower Test Rig Apparatus

Heat and Mass Transfer Laboratory

- Parallel Flow and Counter Flow Heat Exchanger
- Co – Efficient of Plate Type Heat Exchanger

List of Experimental Setup in each Laboratory/Workshop

Fluid mechanics and Hydraulics Laboratory

- Minor losses in bends and elbows
- Centrifugal pump test rig
- Submersible bore pump set rig
- Pipe friction apparatus
- Fitting tool Set
- Carpentry tool Set
- Calibartion of Thermocouple Apparatus
- Thermal Conductivity Measurement by Metal Bar Apparatus
- Thermal Conductivity of Pipe Insulation using Lagged Pipe Apparatus

• Computing Facilities

Internet Bandwidth	100 mbps
Number and configuration of System	41 system with configuration of 3.4 GHz, 4 Gb RAM, 500 Gb hard disk
Total number of system connected by LAN	30
Total number of system connected by WAN	2
Major software packages available	Autocad
	Fusion 360
Special purpose facilities available (Conduct of online Meetings/Webinars/Workshops, etc.)	Webcam, headphone, speaker
Facilities for conduct of classes/courses in online mode (Theory & Practical)	Webcam, headphone, speaker
Innovation Cell	Available
Social Media Cell	-
Compliance of the National Academic Depository (NAD), applicable to PGCM/ PGDM Institutions and University Departments	Not applicable

List of facilities available

Games and Sports Facilities	Table tennis
	Carrom
	Chess
	Volley ball
	Cricket
	Badminton
	Gym
	Discuss throw
	Kabadi
	Throw ball
Extra-Curricular Activities	Sahaja yoga
Soft Skill Development Facilities	Communication skill, Personality development and language

Teaching Learning Process

Curricula and syllabus for each of the Programmes as approved by the University	Attached As **Annexure I**
Academic Calendar of the University	-
Academic Time Table with the name of the Faculty members handling the Course	Attached as **Annexure II**
Teaching Load of each Faculty	2- 3 courses
Internal Continuous Evaluation System and place	Yes
Student's assessment of Faculty, System in place	Yes

For each Post Graduate Courses give the following:

• Title of the Course

• Curricula and Syllabi

• Laboratory facilities exclusive to the Post Graduate Course

• Special Purpose

• Software, all design tools in case

• Academic Calendar and framework

16. **Enrolment and placement details of students in the last 3years**

Year	**2019-20**	**2020-21**	**2021-22**
Enrolment	22	31	Counselling is in progress
Placement	18	18	31

17. **List of Research Projects/ Consultancy Works**

• Number of Projects carried out, funding agency, Grant received

On-going projects

Sl No	**Title of programme**	**Funding agency**	**Year of Start**
1.	ICAR - Poultry Seed Project	ICAR	2014-15
2.	Experiential Learning – Setting up of facilities for Hands-on training on model turkey post harvest technology unit	ICAR	2014-15
3.	Establishment of feed manufacturing unit at CPPM Hosur	TANUVAS	2015-16
4.	TANUVAS SMART Mineral Mixture Production Centre at CPPM, Hosur	TANUVAS	2015-16
5.	Establishment of Aseel unit at CPPM, Hosur	TANUVAS	2016-17

6.	Establishment of Japanese quail breeder unit at CPPM, Hosur	TANUVAS	2016-17
7.	Establish of commercial broiler unit in poultry farm complex at CPPM, Hosur	TANUVAS	2016-17
8.	Establishment of Kadaknath chicken unit at CPPM, Hosur	TANUVAS	2017-18

Completed projects

S.No	Title of the programme	Funding agency
1.	Establishment of feed testing laboratory at CPPM, Hosur	NLM
2.	Popularization of Namakkal Chicken-1 to rural households of Krishnagiri for additional revenue generation	NABARD
3.	Evaluation of Varam (a growth promoter) on the production performance of broiler chicken	M/s. Hatsun Agro-Products
4.	Foldscope as a tool to study the storage quality of processed liquid food	DBT

• Publications (if any) out of research in last three years out of masters projects

• Industry Linkage

• MoUs with Industries (minimum3(10)) **Annexure III**

18. **LoA and subsequent EoA till the current Academic Year- Annexure IV**

19. **Accounted audited statement for the last three years - Annexure V**

20. **Best Practices adopted, if any**

Note: Suppression and/or misrepresentation of information shall invite appropriate penal action. The Website shall be dynamically updated with regard to Mandatory Disclosures

Important Instructions:

• Avoid putting personal information in public domain.

• The mandatory disclosure should be available freely to view/download to the public without any restrictions.

• LoA/EoA letters (since inception) should form part of the mandatory disclosure and complete mandatory disclosure document should be converted into a single PDF file and the URL (web-link) to be entered in the AICTE portal (under attachments tab).

ANNEXURE - I

TANUVAS –B.Tech - Poultry Technology REGULATIONS – 2017

Adoption of V-Deans' Committee Recommendations

Department of Agricultural Research & Education - Indian Council of Agricultural Research

1. Short title and commencement

a) These regulations shall be called "Tamil Nadu Veterinary and Animal Sciences University Undergraduate (B.Tech - Food Technology, Dairy Technology and Poultry Technology) - Regulations 2017"

b) These regulations shall apply to the students admitted in B.Tech (FT, DT and PT) from the Academic year 2017-2018 onwards.

c) In these regulations, unless the context otherwise requires the words and expressions used in these regulations shall be interpreted to have the same meanings as they have in the Act.

2. Definitions

a) "The Act" means The Tamil Nadu Veterinary and Animal Sciences University Act, 1989 (Tamil Nadu Act 42 of 1989).

b) "University" means The Tamil Nadu Veterinary and Animal Sciences University.

c) "Government means the State Government of Tamil Nadu.

d) "B.Tech Degree" means the course of study in Food Technology/ Dairy Technology/ Poultry Technology. It shall comprise of a course of study consisting of curriculum and syllabus provided by the University spread over for four academic years including a compulsory Student READY programmes.

e) "Semester" comprises of 105 working days excluding final theory examinations.

f) 'Syllabus and curriculum' means the syllabus and curriculum for the courses of study as specified by Indian Council of Agricultural Research – Department of Agricultural Research and Education, Government of India.

g) "Course" means teaching units of a subject to be covered within a semester as prescribed in the syllabus of a Department.

h) "Credit Hour" means the weekly unit of work recognised for any particular course as per the course catalogue issued by the University. A lecture class of one hour per week shall be counted as one credit whereas a practical class of two hours duration per week shall be counted as one credit.

i) "Examination" means Internal Theory, Practical and Final theory examinations.

j) "Internal Theory Examination" is conducted after the completion of 40% and 80% of working days – Two numbers in a semester without any loss of working days of a semester by the Course Teacher in a Course.

k) "Practical Examination" is conducted at the end of semester but before closure of instructional period of a semester by the Course teacher and another faculty nominated by the Dean/HoD.

l) "External Theory Examination" is conducted by the University in each course for which an external examiner shall set the question paper (based on the syllabus/Lecture outlines of the concerned course, a copy of which shall be sent), and an external examiner shall evaluate the answer papers, as per the schedule fixed by University at the end of each semester.

m) "Grade Point" in a course is the total marks obtained by a student out of 100 divided by 10.

n) "Credit Point" in a course is the grade point obtained by the student in a course multiplied by the credit hours of the course.

o) "Grade Point Average (GPA)" is the sum of the total credit points earned divided by the sum of total credit hours.

p) "Overall Grade Point Average (OGPA)" is the sum of the grand total credit points earned divided by the grand sum of credit hours.

q) "Percentage of Marks" is the OGPA multiplied by 10.

r) "Ward Counsellor (Advisor)" means a teacher of the faculty who has been nominated by the Dean as ward counsellor to a particular student to advise him/ her in all academic matters.

s) "Transcript" means a copy of the consolidated report of marks secured by the student and issued by the University.

3. Course of Study

A degree course of B. Tech (FT/DT/PT) shall comprise of a course of study consisting of curriculum and syllabi provided by the University in the course catalogue spread over four academic years including the Student READY programmes.

4. Admission

The admission to the under-graduate course shall be made in the beginning of the first year and shall be in accordance with the regulations laid down from time to time by the State Government and the University.

5. Fees

The fees for application, yearly fees, special fees, examination fees and other fees shall be as prescribed by the University from time to time.

6. Ward Counsellor

The students on their admission shall be divided into convenient groups by the Education Cell / Education Technology cell in consultation with the Dean of the college and each group is assigned to one of the teachers who are designated as ward counsellor. Each student immediately after enrolment fills up all the registration cards with the guidance of his / her ward counsellor. Among other things, the ward counsellor shall help the students in planning their programmes. The ward counsellor is to establish and foster close personal relationship with the students assigned to him/her during their entire stay in the college by having periodical meetings at least once in a month either with the entire group of students or with each individual student as often as is considered necessary to know their problems, review their study programme and take such remedial actions as may be necessary in consultation with the teachers, Education Cell and the Dean. The ward counsellor shall also maintain a record containing of previous history of the student, courses registered, examinations appeared and grades obtained in each course.

7. Registration

a) Registration for the first time in the University: Students who have received notification of admission from the University would receive, on arrival, guidelines for the registration from the Dean of the respective colleges. The registration and orientation programme are to be conducted by the Dean of the college for the benefit of the students joining the University for the first time. The programme shall be for duration as decided by the University from time to time. During this programme, the students shall be taken to the various Departments and apprised of facilities available. They shall also be introduced to the course teachers, warden, deputy wardens and other staff members whom they should know. They may also be explained of various scholarships, and other assistantships available and methods of applying for them. Attendance in respect of fresh students for the first semester shall be reckoned from the first day after the completion of orientation programme. The students who are registering late due to late admission, attendance shall be reckoned from the date of their registration. However, this is only for the first semester of B.Tech course. The registration has to be done at Education cell and failure to register for the first semester before nominated date shall result in forfeiture of admission.

b) Subsequent registration: At the beginning of each semester, the registration is done for various courses as specified in the regulations with the authorisation of the Course Teachers allotted for the semester. The ward counsellors in turn countersign and send the cards to the Education Cell / Education Technology cell who shall submit the registration cards to Deans' office for the compilation of the list of students registered for the courses in each semester and dispatch it to the University.

c) At any instance, the registration cards fulfilled with all the above guidelines should be submitted to Dean's office / Education Technology cell not later than seven working days after the commencement of semester as pronounced by University.

d) The payment of fees and other arrears due to the College, Departments, Hostel, Library, etc., shall precede commencement of each semester. The students shall be allowed to register for the semester only after payment of fees and production of clearance certificates from the hostel, library and such other places.

e) The students including new entrants shall register the requisite courses in the beginning of each semester within seven working days, the first two working days without fine and the remaining five working days with a fine as decided by the University from time to time. The attendance is reckoned from the day the instruction commences as per the academic calendar (i.e. second day of registration week).

f) Preparation of time-table: The time table for a semester shall be prepared by the Education Cell in consultation with course teachers. The time-table should be released only after the approval of the Dean of the college concerned.

g) Theory and practical schedules: At the commencement of semester, the theory and practical schedules for all courses should be drawn by the course teacher/Education Cell and concerned Head of the Department which shall be circulated to the students with a copy to the Dean.

8. Credit transfer

The transfer of course credits from other University into this programme shall be governed by the rules and regulations in force at that time.

9. Residential requirement

a) **Duration:** The minimum duration shall be 8 semesters and maximum shall be 14 semesters.

b) **Temporary discontinuance:** A student is not normally permitted temporarily to discontinue. However, if a candidate intends to temporarily discontinue the programme for valid reasons such as accident/hospitalization due to prolonged illness/ill health and to re-join the programme in the later semesters, he/she shall apply to the Dean of the College in advance. The conditions for re-joining the programme after the break shall be governed by the rules and regulations in force at the time of re-joining. In such case the total period for completion of the programme shall be reckoned from the commencement of first semester to which the candidate has been admitted and shall not exceed the maximum period as specified in 9 (a) irrespective of the period of break of study. If any student is detained for want of requisite attendance/progress/good conduct, the period stands in that semester shall not be considered as permitted break of study.

10. Attendance requirement

Every student shall ordinarily attend all classes in a course. However, the minimum attendance prescribed for a course should be 80% including **Student-READY** programmes. The minimum attendance prescribed shall be reckoned for theory and practical separately, for every course. A student who fails to meet out the minimum attendance requirements either in theory or practical in any course shall not be permitted to appear for the semester final examinations and his/her Registration for the particular course shall be treated as cancelled.

11. Theory Examination and Evaluation

a) The detailed lecture outlines in each course of a Department shall be prepared by the teacher(s) concerned in consultation with the Head of the Department and approved by the Dean, which is to be made available to the students during the first week of the Semester.

b) The detailed guidelines for conduct of all examination (Internal and External), evaluation, grading, recording, preparation of mark lists/transcripts, etc., are being circulated from time to time to the College by the University.

c) The schedule of examinations shall consist of Internal and External Examinations.

d) There shall be Two Internal theory examinations comprising of objective and subjective questions in the ratio of 20:30, with a maximum marks of 50 each with a total evaluation for 100 marks and for 1 - 2 hours during the respective class hours conducted by the course teacher after completion of 40% and 80 % of the working days in a semester. Unless a student appears for the internal theory and practical examinations, he/she should not be permitted to appear for the semester final theory examination in the course concerned.

e) The final theory (External) examination is to be held separately for each course and the question paper shall comprise of objective and subjective questions in the ratio of 40:60. The duration of examination shall be 3 hours with maximum marks of 100. Syllabus of the concerned course shall be sent to the External examiner for setting the Question paper and the question paper shall be moderated by the concerned faculty at University, if necessary.

f) Central evaluation of the answer scripts by External Examiners identified by Controller of Examination is to be carried out by University.The Honorarium for setting the Question paper and evaluating the Answer scripts shall be borne by University.

g) The students shall be given three days of instructional cum study leave (exclusive of public holidays) to be covered within earmarked working days before the commencement of semester final theory examination.

12. Practical Examination and Evaluation

a) There shall be one practical examination in each course at the end of semester for a total of 100 marks before the closure of instructional days.

b) The evaluation of the Practical component of a course is based on

i. Practical Record: 20%;

ii. Performance during practical (observation of the skills with which each student executes the practical) : 10%;

iii. Practical observation book including record of Log/Production sheet etc.: 10%;

iv. Viva-voce: 10% and

v. Practical Examination (written, spotting, experiment, problems etc.): 50%

c) Internal practical examination of a particular course shall be conducted by course teachers and one teacher as nominated by Head of Department.

Degree	Percentage of Marks Obtained	Conversion into Points
B. Tech degrees in i). Food Technology ii). Dairy Technology iii). Poultry Technology	100	10 Points
	90 to <100	9 to <10
	80 to <90	8 to <9
	70 to <80	7 to <8
	60 to <70	6 to <7
	50 to <60	5 to <6
	<50 (Fail)	<5

OGPA	Division
5.000 – 5.999	Pass
6.000 – 6.999	II division
7.000 – 7.999	I division
8.000 and above	I division with distinction

13. Compartmental Examination

a) The said examination is scheduled for registration in IPT-Student READY programme after successful completion of VI semester or during VII semester of B.Tech (DT); in case of B.Tech

(FT & PT), the same shall be conducted after completion of VII semester or during VIII semester.

b) A student failed in a maximum of two subjects shall be allowed to appear in compartmental examination and the same shall comprise of final theory and practical examinations of the failed subjects albeit a student has secured minimum pass marks of 50% in practical examination if the course consists of practical component; however, the marks obtained in internal theory examinations shall be considered for evaluation of compartmental examination.

c) The compartmental examination shall be applicable only for a student registering for Student READY – In-plant Training in VII semester for DT and VIII semester for FT & PT which shall be conducted within 20 calendar days of registration in IPT with the view to facilitate the student to be eligible for enrolment in IPT module. The results of such compartmental examination shall be declared within 10 days after the conduct of examination.

d) If the student fails even in one of the allowable maximum of two subjects in the compartmental examinations conducted for the purpose, he/she shall not be permitted to continue IPT module in the respective semesters of FT, PT & DT which the student shall reappear in the subsequent batch after clearing all the arrears in the subjects for which no additional compartmental examination will be conducted which he/she shall clear the arrears in the next schedule of examinations for the upcoming batches.

e) If the student fails / the result is declared as unsatisfactory for DT - IPT programme in VII semester, such candidates are not allowed to register in VIII semester with respect to DT which the failed candidate shall reappear and redo with the subsequent batch and in the similar pattern, any of the students who has failed in the final VIII semester – IPT programme for FT & PT and also for DT in VIII semester course curriculum shall have to reappear and redo with the subsequent batches for which no compartmental examination is permitted. Upon the declaration of the results for IPT-Student READY programme as 'unsatisfactory/failed', the student shall redo the programme though the requisite per cent attendance of 80 % is maintained by the student.

14. Scrutiny of grades, answer books and rectification of errors

a) A student may be allowed to get his / her theory answer book (s) scrutinised, for which the student shall have to apply to the Controller of Examinations within three working days after the declaration of results for scrutiny of the totalling of marks in the Annual Examination (for both theory and practical) or calculation of grade points obtained by him / her advancing sufficient reasons for such a request.

b) The fee for such scrutiny shall be as decided by the University from time to time.

c) The Controller of Examinations shall arrange for the scrutiny of answer books by the screening committee.

d) Scrutiny shall be for re-totalling of marks and evaluation of unmarked questions if any.

e) In case, the total marks are found to be incorrect on scrutiny, the same shall be corrected and the results shall be revised accordingly (even if it is towards lower side) and if, any question is found to be unchecked by the examiner, the answer book(s) shall be sent to the examiner for doing the needful and the result(s) shall be revised accordingly if there occurs any change in the marks. A photocopy of answer book shall be retained at the University while sending the original answer book to the examiner.

f) No representation by the student(s) shall be entertained regarding the outcome of the result after scrutiny.

g) In case a student on the basis of the result of scrutiny becomes eligible for the compartment examination which is scheduled while entering into IPT - Student READY programme in VII semester for DT and VIII semester for FT & PT, he / she may apply to the concerned authority

to appear in the compartmental examination on the scheduled date. However, the date of the compartmental examination shall under no circumstances be changed on this account.

15. Academic status and scholastic deficiency

a) A student shall secure 50% marks in the final theory examination for pass in a subject for the courses with theory alone; Student shall secure a minimum of 50 % overall marks in internal evaluation and 50 % marks in final theory examination for pass in a subject; student shall secure 50% marks in the practical examination for pass in a subject for the courses with practical alone.

b) Overall performance of the student in various examinations including the external theory examination is the criteria for passing or failing in a course at the end of the each Semester.

i. The examination pattern shall consist of two internal examinations, one practical examination and an External theory examination. The distribution of marks between internal theory plus practical examinations and external theory is 50: 50.

ii. The distribution of marks with different credit loads of theory and practical is as follows;

- **Courses having only Theory Component:** Internal Examination (40%) + Assignment (10%) and External Theory (50%)
- **Courses with only Practical:** (100%) Internal
- **Courses with Theory and Practical components:** Internal Examination (30%) + Assignment (5%) + Practical (15%) + External theory (50%)

c) Student obtaining a grade point of not less than 5.0 shall be considered to have passed. A student getting less than 5.0 shall be deemed to have failed and "F" shall be indicated in the grade report.

d) If a candidate absents for Internal examination or practical examination or final theory (External) examination, Absent ('A') is to be recorded.

e) The Failed/Absent students shall appear for the examinations, both theory and practical, as and when offered next time by paying the prescribed re-examination fee in the course in which they have obtained 'F' grade/'A' grade.

f) Moderation of marks in failed subjects shall be carried out to the maximum of 2.5 marks in any paper/subject per semester per student but not exceeding 5.0 marks in an academic year. However, this relaxation shall not be applicable for student READY in-plant training, student READY experiential learning module and compartmental examinations.

g) Supplementary Internal Examination will be conducted, if:

i. Any student claiming to be sick and indisposed or the loss of life of his close relatives (father, mother, grand parents, siblings) may be permitted after the production ofa medical certificate from a Civil Surgeon working in case of Govt. Hospital and discharge certificate issued by qualified doctor in case of Private Nursing home, provided the student is declared to have been hospitalized for minimum period of 24 hours in case of disease/illness or a death certificate from the Revenue Divisional Officer or from local bodies like panchayats /municipalities in case of death of close relatives. A committee consisting of senior most Professors, Officer in-charge of Education Cell/Education Technology cell and concerned course teacher may go through the merit of the case and approve the authenticity of the certificate produced by the student.

ii. The supplementary internal examination shall be conducted before the last date of instruction of that semester only.

iii. Conducting Re-examination for such students is on payment of fee of Rs. 100/- per course subject to a maximum of Rs. 500/- in a semester.

iv. A student shall be conditionally permitted to register and attend IPT, subject to the pending declaration of the results for the VI semester for B.Tech (DT) and VII semester for B.Tech (FT & PT). The eligibility criteria for registration in IPT is given in 13 (a) & (b) of regulations.

16. Student READY (Rural and Entrepreneurship Awareness and Development Yojana) Programmes

POULTRY TECHNOLOGY PROGRAMME

Student READY Program is to be taken up during VI, VII and VIII semesters with the following components:

Semester - VI

Student READY - Experiential Learning with a credit load of 0+5 credit hours through relevant pilot plants, preferably on campus. The Experiential Learning is intended to build practical skills and entrepreneurship attributes among the students with an aim to deal with work situations and for better employability and self-employment.

Semester - VII

i. **Student READY - Experiential Learning** with a credit load of 0+9 credit hours through relevant pilot plants, preferably on campus. The Experiential Learning is intended to build practical skills and entrepreneurship attributes among the students with an aim to deal with work situations and for better employability and self-employment.

ii. **Student READY – Study Tour** of two - three weeks to various industries within and outside the state of the university and submission of report on Industrial Tour carrying a weightage of 0+2 credit hours.

Semester - VIII

i. **Student READY – Project** with a credit load of 0+3 credit hours to undertake investigation of selected problems of special interests in Poultry Technology to individual student. The work includes library work, field or laboratory research, recording data, analysing data and writing of report, etc.

ii. **Student READY – Seminar I & II** including preparation of synopsis, presentation and discussion by each student on current topics / interests in Poultry Technology with weightage of 0+1credit hours each.

iii. **Student READY – In-plant Training** of one semester duration with a credit load of 0+20 credit hours at relevant poultry industry, machinery manufacturer, marketing or other agencies. The In-plant Training is intended to expose the students to an environment in which they are expected to be associated in their future career. The students will be required to have hands-on-experience in one or more commercial establishments.

In-Plant Training (IPT): Every candidate after completing all courses up to VII semester for B.Tech - FT & PT is required to undergo compulsory **Student READY – IPT** for a period of one semester and for B.Tech-DT programme, the duration of IPT shall be 24 weeks after the successful completion of VI semester to the satisfaction of the University so as to be eligible for the award of the degree of B. Tech (FT/PT).

Evaluation of IPT: There shall be continuous monitoring of the performance of the student during the IPT programme by the course teacher which shall be evaluated by a committee constituted by the Dean of the concerned College after the completion of the in-plant training. The breakup details for distribution of marks with regard to evaluation are as follows.

Sl. No	Details	Marks
1	**Record and work diary** In-Plant training Report and day wise work done particulars	20
2	Written examination about the in-plant training	30
3	Presentation on a topic related to training undergone	20

4	**Viva-voice** Evaluation by the five member committee about the in-plant training	30
	Total	**100**

i. **Student READY Experiential Learning Module:** This module shall run concurrently in the seventh semester in case of B. Tech (FT), in the VI and VII semester in case of PT and in the final semester in case of B. Tech (DT) along with the regular courses which includes the development of detailed project report on setting up of specific product enterprise and evaluation of the selected module. The performance of the student is to be evaluated by a committee constituted by the Dean of the concerned college after the completion of the Experiential Learning programme.

ii. **Student READY Rural Dairy Work Experience Program (RDWE):** This is to be implemented in two parts with 10 (0+10) non-credit courses equally distributed during I year – II semester and II Year – IV semester as per semester wise courses framed in the syllabus; if the student is not able to register any one of the RDWE with (0+5) credit load out of its two parts on valid medical/compassionate grounds, the student will be permitted to register for Module – I during I year – II semester & II year – IV semester and for module – II during II year – IV semester & III year – VI semester.

17. Promotion

A student shall be permitted to register III year - V semester courses only if he/she has passed all the subjects in I & II semesters of I year – in other words, the student will be permitted to proceed to III year only when he/she has passed all the courses in I year. The compartmental examination is scheduled for clearing of arrears with maximum limit of two subjects before or during enrolment of the student in IPT – Student READY programme.

B.Tech (FT & PT): A student shall be permitted to register VIII semester – Student READY IPT programme if he/she clears all the subjects in III, IV, V, VI and VII semesters of II, III and IV years which are to be declared to have passed by University. The compartmental examination is permitted if he/she fails in two subjects altogether in any of the semesters from III to VII semester. If the student fails with unsatisfactory grade in IPT – VIII semester, he/she should get enrolled in IPT programme with the upcoming batches. With regard to FT & PT, registration in VIII semester In-plant training shall be permitted as contained in 13 (a) & (b) and 15 g (iv).

18. Graduation requirement

The student shall satisfy the minimum residential requirement of VIII semesters of study including compulsory in-plant training for duration of one semester.

19. Requirement for B.Tech Degree

A student shall be eligible for the award of B.Tech (FT/DT/PT) degrees, provided he/she shall have passed the courses and completed the minimum number of credit hours prescribed thereof by the Academic council from time to time by obtaining a minimum OGPA of 5 in a 10 point scale. The University shall issue a provisional course completion certificate after the student successfully completes all the credit requirements, provided no disciplinary action is pending against the student. The student should have completed NSS/NCC and non-credit courses.

20. Classification of Degree awarded:

OGPA	Division
5.000-5.999	Pass
6.000-6.999	II Division
7.000-7.999	I Division
8.000 and above	I Division with distinction

21. Student responsibility

All B.Tech (FT/DT/PT) students studying in this University are expected to know the requirements for the award of the degree and general academic requirements with assumption of complete responsibility to fulfill the requirements. They are expected to keep constantly in touch with their ward counsellor so that the latter may watch their progress and guide them on right direction. In no case a regulation will be waived or exemption made simply because a student pleads ignorance to it.

22. Record of Courses

To ensure that a student has completed requirements for the award of the degree, the University shall keep a record of courses completed by the student. The Dean of the College concerned shall maintain a copy of the same.

23. Authorities to approve results and issues pass certificates, transcripts, etc.:

The Vice-Chancellor shall approve the results on the recommendation of the Board of Examination and Registrar shall issue the provisional pass certificates, transcripts etc. to the candidate.

24. Award of Degree

A degree under the seal of the University and duly signed by the Officers authorized in this behalf shall be presented at a convocation to each candidate who has successfully completed the graduation requirements. The award of Degree of the candidate, who has successfully completed the graduation requirements for the award at convocation in absentia, shall be sent by post. The degree shall set forth the name of the candidate, father's name, degree, month and year of successful completion of the graduation requirements, etc. The type of gown to be worn by the candidates at convocation shall be as decided by the University.

25. Amending or Cancellation of results

If the result of a candidate is discovered to be vitiated by error, malpractice, fraud, improper conduct or any other reasons, the Vice-Chancellor shall have the powers to amend the result in such a manner as to accord with the true position, and to make declaration as the Vice-Chancellor may deem necessary in that behalf. If it is found that the result of a candidate has been vitiated by malpractices, fraud or other improper conduct whereby he/she has been benefited and that he/she has in the opinion of the Vice-Chancellor, be a party to or conceived at the malpractice, fraud or improper conduct, the Vice-Chancellor shall have the power at any time, not-withstanding the award of a degree or a Certificate or prize or a scholarship, to amend the result of such candidate and to make such declaration as the Vice-Chancellor may deem necessary in that behalf, including debarring of the candidate from the University for such a period as may be specified and the cancellation of the result of the candidate in such a manner as the Vice-Chancellor may decide.

26. Transitory provision

These regulations shall apply to the B.Tech (FT/DT/PT) students who shall be admitted from the academic year immediately after the approval of the same by the University. No Regulation made by the Academic Council, governing the B.Tech (FT/DT/PT) course of study shall be construed, to limit or abridge the powers of the Academic Council to deal with any case or cases of any student or students of B.Tech (FT/DT/PT) course in such a manner as it may appear to it to be just and equitable.

27. Removal of doubt

In case of any difficulty arises in giving effect to the provisions of these regulations, the Vice-chancellor as per Statute 29 on recommendation of Academic Council may pass such orders as are necessary for the purpose of removing the difficulty.

CURRICULUM- B.Tech (Poultry Technology)

1. Distribution of Credit Load:

A. Discipline-wise

S. No	Discipline		
		No. of Courses	Total credits
1.	Poultry Management	14	40
2.	Poultry Technology	11	31
3.	Poultry Engineering	21	54
4.	Poultry Business Management	6	15
5.	Poultry Skill Development	**7**	**41**
6.	**Non Credit Courses**	**2**	**2**
	Total	61	183*

***** Includes two Non Credit Courses each of 0+1.

B. Semester wise:

Semester	Credit Load
I	18
II	25
III	22
IV	23
V	22
VI	24
VII	24*
VIII	25
Total	183**

* Includes study tour

** Including Non Credit Courses

2. Distribution of Courses

A. Discipline / Department wise course list:

1. Poultry Management :

Sl.No	Course No	Course Title	Credit Hours
1.	**PSE 111**	Bio-chemistry	3 (2+1)
2.	**PSE 112**	Poultry Anatomy and Physiology	2 (1+1)
3.	**PSE 113**	Introduction to Poultry Sector	2 (2+0)
4.	**PSE121**	Fundamentals of Microbiology	3 (2+1)
5.	**PSE 122**	Introduction to Poultry Management	3 (2+1)
6.	**PSE 123**	Poultry Housing and Environment	4 (3+1)
7.	**PSE 211**	Poultry Genetics	2 (1+1)
8.	**PSE 212**	Basic Poultry Nutrition	3 (2+1)
9.	**PSE 221**	Applied Poultry Nutrition	3 (2+1)
10.	**PSE 222**	Commercial Layer Production	3 (2+1)

11.	**PSE 311**	Commercial Broiler Production	3 (2+1)
12.	**PSE 312**	Diversified Poultry and Ratite Management	3 (2+1)
13.	**PSE 411**	Breeder flock management	3 (2+1)
14.	**PSE 412**	Poultry flock health and Bio-Security	3 (2+1)
		TOTAL	**40 (27+13)**

2. Poultry Technology:

Sl. No	Course No	Course Title	Credit Hours
1.	**PTE 121**	Environmental Sciences and disaster Management	3 (2+1)
2.	**PTE 211**	Egg Composition and Quality	3 (2+1)
3.	**PTE 212**	Primary Processing and Preservation of Poultry	3 (2+1)
4.	**PTE 221**	Poultry Meat Processing Technology	3 (2+1)
5.	**PTE 222**	Value Added Egg Products	3 (2+1)
6.	**PTE 311**	Quality Control of Poultry Meat and Egg Products	2 (1+1)
7.	**PTE 312**	Hatchery Technology	3 (2+1)
8.	**PTE 313**	Poultry Feed Milling and Manufacturing Technology	3 (2+1)
9.	**PTE 321**	Packaging of Poultry Products	3 (2+1)
10.	**PTE 322**	Food safety and techniques in food analysis	3 (2+1)
11.	**PTE 411**	Poultry by-products and Waste Management	2 (1+1)
		Total	**31 (20+11)**

3. Poultry Engineering:

Sl.No	Course No	Course Title	Credit Hours
1.	**PEG 111**	Engineering Drawing	1 (0+1)
2.	**PEG 112**	Manufacturing processes	2 (1+1)
3.	**PEG 113**	Applied Physics	2 (1+1)
4.	**PEG 114**	Engineering Mathematics – I	2 (1+1)
5.	**PEG 115**	Principles of Civil Engineering	3 (2+1)
6.	**PEG 121**	IT Application in Poultry Industry	3 (2+1)
7.	**PEG 122**	Engineering Mathematics - II	2 (1+1)
8.	**PEG 123**	Materials and Structural Engineering	3 (2+1)
9.	**PEG 124**	Thermodynamics	3 (2+1)
10.	**PEG 211**	Heat and Mass Transfer	3 (2+1)
11.	**PEG 212**	Engineering Mathematics - III	2 (1+1)
12.	**PEG 213**	Fluid mechanics and hydraulics	3 (2+1)
13.	**PEG 221**	Applied Statistics	2 (2+0)
14.	**PEG 222**	Refrigeration and Cold Chain	3 (2+1)
15.	**PEG 223**	Electrical Engineering	3 (2+1)
16.	**PEG 224**	Applied Electronics	3 (2+1)
17.	**PEG 311**	Instrumentation and Process Control	3 (2+1)
18.	**PEG 312**	CAD and CAM for Poultry Housing &Equipment	2 (0+2)
19.	**PEG 321**	Construction of Poultry House and its Equipment	3 (2+1)
20.	**PEG 322**	Construction of Poultry Hatchery, Feed Mill and its equipment	3 (2+1)
21.	**PEG 323**	Construction of Poultry Meat and Egg processing Plants & its Equipment	3 (2+1)
		Total	**54 (33 + 21)**

4. Poultry Business Management:

Sl.No	Course No	Course Title	Credit Hours
1.	**PBM 211**	Poultry Economics and Marketing	3 (2+1)
2.	**PBM 311**	Poultry Farm management and Financial analysis	3 (2+1)
3.	**PBM 321**	Fundamentals of Agribusiness management	2 (2+0)
4.	**PBM 322**	Entrepreneurship Development and Communication Skill	2 (1+1)
5.	**PBM 411**	Project planning and Implementation	3 (2+1)
6.	**PBM 412**	International Trade Food Laws and Regulations	2 (2+0)
		Total	**15(11+4)**

5. Poultry Skill Development:

Sl.No	Course No	Course Title	Credit Hours
1.	**PSD 321**	Experiential learning	5 (0+5)
2	**PSD 411**	Experiential learning	9 (0+9)
3	**PSD 412**	Study Tour	2 (0+2)
4.	**PSD 421**	Industrial / In plant Training	20 (0+20)
5.	**PSD 422**	Seminar- I	1 (0+1)
6.	**PSD 423**	Seminar- II	1 (0+1)
7.	**PSD 424**	Research Project	3 (0+3)
		Total	**41 (0+41)**

b.Semester Wise distribution of courses :

SEMESTER I

Sl.No	Course No	Course Title	Credit Hours
1.	**PSE 111**	Bio-chemistry	3 (2+1)
2.	**PSE 112**	Poultry Anatomy and Physiology	2 (1+1)
3.	**PSE 113**	Introduction to Poultry Sector	2 (2+0)
4.	**PEG 111**	Engineering Drawing	1 (0+1)
5.	**PEG 112**	Manufacturing processes	2 (1+1)
6.	**PEG 113**	Applied Physics	2 (1+1)
7.	**PEG 114**	Engineering Mathematics – I	2 (1+1)
8.	**PEG 115**	Principles of Civil Engineering	3 (2+1)
9.	**PED 111**	**Physical Education**	**1 (0+1)***
		Total	**18 (10+8)**

* Non Credit Course

SEMESTER II

Sl.No	Course No	Course Title	Credit Hours
1.	**PSE 121**	Fundamentals of Microbiology	3 (2+1)
2.	**PSE 122**	Introduction to Poultry Management	3 (2+1)
3.	**PSE 123**	Poultry Housing and Environment	4 (3+1)
4.	**PTE 121**	Environmental Sciences and disaster Management	3 (2+1)
5.	**PEG 121**	IT Application in Poultry Industry	*3 (2+1)*
6.	**PEG 122**	Engineering Mathematics - II	2 (1+1)
7.	**PEG 123**	Materials and Structural Engineering	3 (2+1)
8.	**PEG 124**	Thermodynamics	3 (2+1)
9.	**NSS 121**	***National Service Scheme***	**1 (0+1)***
		Total	**25 (16+9)**

* Non Credit Course

SEMESTER III

Sl.No	Course No	Course Title	Credit Hours
1.	**PSE 211**	Poultry Genetics	2 (1+1)
2.	**PSE 212**	Basic Poultry Nutrition	3 (2+1)
3.	**PTE 211**	Egg Composition and Quality	3 (2+1)
4.	**PTE 212**	Primary Processing and Preservation of Poultry	3 (2+1)
5.	**PEG 211**	Heat and Mass Transfer	3 (2+1)
6.	**PEG 212**	Engineering Mathematics - III	2 (1+1)
7.	**PEG 213**	Fluid mechanics and hydraulics	3 (2+1)
8.	**PBM 211**	Poultry Economics and Marketing	3 (2+1)
		Total	**22 (14+8)**

SEMESTER IV

Sl.No	Course No	Course Title	Credit Hours
1.	**PSE 221**	Applied Poultry Nutrition	3 (2+1)
2.	**PSE 222**	Commercial Layer Production	3 (2+1)
3.	**PTE 221**	Poultry Meat Processing Technology	3 (2+1)
4.	**PTE 222**	Value Added Egg Products	3 (2+1)
5.	**PEG 221**	Applied Statistics	2 (2+0)
6.	**PEG 222**	Refrigeration and Cold Chain	3 (2+1)
7.	**PEG 223**	Electrical Engineering	3 (2+1)
8.	**PEG 224**	Applied Electronics	3 (2+1)
		Total	**23 (16+7)**

SEMESTER V

Sl.No	Course No	Course Title	Credit Hours
1.	**PSE 311**	Commercial Broiler Production	3 (2+1)
2.	**PSE 312**	Diversified Poultry and Ratite Management	3 (2+1)
3.	**PTE 311**	Quality Control of Poultry Meat and Egg Products	2 (1+1)
4.	**PTE 312**	Hatchery Technology	3 (2+1)
5.	**PTE 313**	Poultry Feed Milling and Manufacturing Technology	3 (2+1)
6.	**PEG 311**	Instrumentation and Process Control	3 (2+1)
7.	**PEG 312**	CAD and CAM for Poultry Housing and Equipment	2 (0+2)
8.	**PBM311**	Poultry farm management and financial analysis	3 (2+1)
		Total	**22 (13+9)**

SEMESTER VI

Sl.No	Course No	Course Title	Credit Hours
1.	**PTE 321**	Packaging of Poultry Products	3 (2+1)
2.	**PTE 322**	Food safety and techniques in food analysis	3 (2+1)
3.	**PEG 321**	Construction of Poultry House and its Equipment	3 (2+1)
4.	**PEG 322**	Construction of Poultry Hatchery, Feed Mill and its equipment	3 (2+1)
5.	**PEG 323**	Construction of Poultry Meat and Egg processing Plants & its Equipment	3 (2+1)
6.	**PBM 321**	Fundamentals of Agribusiness management	2 (2+0)
7.	**PBM 322**	Entrepreneurship Development and Communication Skill	2 (1+1)
8.	**PSD 321**	Experiential learning	**5 (0+5)**
		Total	**24 (13+11)**

SEMESTER VII

Sl.No	Course No	Course Title	Credit Hours
1.	**PSE 411**	Breeder flock management	3 (2+1)
2.	**PSE 412**	Poultry Flock Health and Bio security	3 (2+1)
3.	**PTE 411**	Poultry by-products and Waste Management	2 (1+1)
4.	**PBM 411**	Project planning and implementation	3 (2+1)
5.	**PBM 412**	International Trade Food Laws and Regulations	2 (2+0)
6.	**PSD 411**	Experiential learning	9 (0+9)
7.	**PSD 412***	Study Tour	2 (0+2)
		Total	**24 (9+ 15)**

**Study tour programme during the semester break (VII and VIII)*

SEMESTER VIII

Sl.No	Course No	Course Title	Credit Hours
1.	**PSD 421**	Industrial / In Plant Training (Internship)	20 (0+20)
2.	**PSD 422**	Seminar- I	1 (0+1)
3.	**PSD 423**	Seminar - II	1 (0+1)
4.	**PSD 424**	Research Project	3 (0+3)
		Total	**25(0+ 25)**

Course Contents

SEMESTER I

Sl.No	Course No	Course Title	Credit Hours
1.	***PSE 111***	Bio-chemistry	3 (2+1)
2.	***PSE 112***	Poultry Anatomy and Physiology	2 (1+1)
3.	***PSE 113***	Introduction to Poultry Sector	2 (2+0)
4.	***PEG 111***	Engineering Drawing	1 (0+1)
5.	***PEG 112***	Manufacturing processes	2 (1+1)
6.	***PEG 113***	Applied Physics	2 (1+1)
7.	***PEG 114***	Engineering Mathematics – I	2 (1+1)
8.	***PEG 115***	Principles of Civil Engineering	3 (2+1)
9.	***PED 111***	**Physical Education**	**1 (0+1)***
		Total	**18 (10+8)**

* Non Credit Course

1. PSE 111 Biochemistry 3(2+1)

Theory: Biochemistry and its scope, Cellular Biochemistry, Carbohydrates - Occurrence, Classification & Structures, Physicochemical and Metabolic functions Metabolism, Proteins - Occurrence, Classification & Structures, Physicochemical & Metabolic functions, Metabolism, Lipids- Occurrence, Classification and Structure, Physicochemical and metabolic functions, Metabolism. Nucleic Acids- Properties, structure & Metabolism. Vitamins and Minerals- Chemistry and Metabolic functions. Enzymes - Chemical Nature and nomenclature. Classification, sources and properties, Mechanism of action, coenzyme and prosthetic groups.

Practical: Safety measures in the laboratory. Preparation of various solutions and buffers.Qualitative & quantitative determination of carbohydrates. Qualitative & quantitative determination of Aminoacids. Qualitative & quantitative détermination of Proteins. Qualitative & quantitative determination of Lipids.Qualitative& quantitative détermination of vitamins. Isolation of enzymes from various sources.Isolation of DNA from Plant sample.

2.PSE 112 Poultry Anatomy and Physiology 2(1+1)

Theory: Anatomy and physiology of the major body systems - integumentary, respiratory, cardiovascular, digestive, reproductive and excretory. Regulation of feed intake and appetite.Hormones and their role on growth, production and reproduction– regulation of body temperature. Water, electrolyte and acid-base balance. Photoperiodism, moulting. General principles of poultry behaviour and physiological indicators in relation to welfare of poultry.Normal Physiological standards in different poultry- physiology of digestion and egg formation.

Practical: Collection of blood and hematological studies. Differential count-TEC, PCV, MCH, MCHC, ESR and TLC, Structure of various systems of fowl, respiratory, cardiovascular, digestive, reproductive and excretory. Feather types, parts and tracts.

3.PSE -113 Introduction to Poultry Sector 2(2+0)

Theory: Development of Poultry Industry inIndia - Five year plans – major role of government/ private agencies in poultry development- Government of India; Department of Animal Husbandry, Poultry development schemes, Central Poultry Development Organizations; ICAR, CARI, DPR, AICRP on Poultry Breeding-Poultry seed project-APEDA, MOFPI, NABARD, NMPPB, NECC, BCC. Insurance firms, Animal Husbandry Department- Government of Tamilnadu– Poultry development schemes-TANUVAS, PRS, CPPM,Present scenario of Poultry production in India and world. Factors that determine the growth of poultry industry in India -Statistics- world poultry population, egg production, meat production and trade statistics. India- state wise population of poultry- production of broilers, egg and poultry meat- regional influences and the reasons thereof.Structure of poultry industry in India - breeder farm, hatcheries, commercial layer, broiler,breeder, feed mills and poultry meat and egg processing plant.Poultry integration, Contract farming and Linkages.Introduction to rearing of, Turkey, Duck, Japanese Quail, Guinea fowls, Goose and back yard chicken for meat and egg production.Future perspective and constraints.

4. PEG 111 Engineering Drawing 1(0+1)

Practical: Drawing of lines, lettering and dimensioning - Types of lines, types of lettering, types of dimensioning.Drawing of scales.Plain scale, diagonal scale, comparative scale and Vernier scale.Drawing of projections.Orthographic projections, methods of projections.Drawing of screw threads.Types of threads and terminologies used in it.Screw fastening Types of nuts, types of bolts, stud, locking arrangements for nuts and foundation bolt. Drawing of rivets and riveted joints forms of rivet heads, types of riveted joints, failure of riveted joints. Drawing of welded joints.Forms of welds, location and dimensions of welds. Drawing of keys, cotter joint, pin joints types of keys, types of cotter joints, pin joints. Drawing of shaft couplings.Rigid couplings, loose couplings, flexible couplings universal coupling.Drawing of shaft bearings. Journal bearings, pivot bearings, collar bearings.

5.PEG 112 Manufacturing processes 2(1+1)

Theory:

Manufacturing engineering-Production process-process planning-manufacturing process-classification of manufacturing process- Inspection and quality control-mechanization and automation -computer aided manufacturing (CAM)-kinds of production systems- manufacturing system- product development-Industrial safety.

Properties of metals

Engineering materials - Property definitions– Iron-carbon equilibrium diagram- Ferrous metals and alloys, Non Ferrous metals and alloys – manufacturing processes and properties.Heat treatment of steels – purpose and method of heat treatment. Annealing, normalizing- hardening- tempering- surface hardening.

Forming and welding process.

Mechanical working of metals - hot working processes – hot rolling- hot forging- spinning extrusion-drawing-piercing. Cold working processes -Cold rolling- shot peening. Smithy and forging operations-types.Welding process - arc welding – Polarity – Types- electrodes.Gas welding –gas flames- gas welding technique –gas cutting of metals. Sheet metal work – tools. Moulding andcasting process

Pattern making – pattern materials- Types of pattern – core boxes- core prints Foundry –moulding tools - moulding sand- Properties- Moulding- moulding materials- types of moulds- methods of moulding. Special casting process – permanent moulding- slush casting- die casting- centrifugal casting investment casting- shell moulding – continuous casting.

Machining process

Lathe - principal parts – types – working principles -basic operations – lathe accessories-.

Drilling machine, shaper, planer- principal parts-working principle- operations-. Grinding machine, milling machine, principal parts – types - basic operations.

Advanced Manufacturing process

Manufacturing process for plastics -compression moulding- transfer moulding- injection moulding -jet moulding and blow moulding- Calendaring-casting- slush casting- laminating- Joining. Modern machining methods, Electro discharge machining (EDM), wire cut Electro discharge machining (WEDM), advantages and limitations. Advanced manufacturing technologies.

Practical: Simple exercises on wood working tools and their use, Carpentry and pattern making, mould material and their applications, heat treatment processes: hardening, tempering, annealing, normalising. Metal cutting. Soldering & Brazing, Electric arc welding, Gas welding, Smithy and forging operations, bench: Flat surface filing, Chipping, Scraping Marking out, Drilling and Screwing. Use of Jigs and fixtures in production. Simple exercise on: (a) Lathe (b) Milling machine (c) Shaper and planer (d) Drilling and boring machines (e) Grinder. Simple exercises in Filing and Fitting, Chipping and Hack sawing Chiselling, Tapping and Smithy practice. Simple exercises in Arc, Gas, & Argon welding.Simple exercises in Soldering, Brazing, Basic joints in carpentry.

6. PEG 113 Applied Physics 2(1+1)

Theory: Units and Measurements: British units, Metric units, SI units-conversion between British and Metrics units-- Measuring Instruments-Mechanics: Statics – properties like friction inertia, etc., Dynamics – motion, linear & circular – centrifugation – Gravitation – laws-General properties of matter: Elasticity – Moduli of elasticity; Liquids – surface tension viscosity – bio-fluids, dairy products, etc., -

Heat: Laws of thermodynamics – Low temperature physics and Cryogenics-Electricity & magnetism : Electrostatics – current electricity – Electrical devices-diagnosis-Electromagnetic Radiations: Nature – Propagation – Transmittance – absorption – optical density – Colorimetry, photometry, etc.,--Instruments-Radiation Physics: X – radiation –Production, properties and applications - Radioactive radiations - α,β,γ rays – Radio tracers – applications

Practical: Measurements-Verniercalipers, screw gauge, Spherometer, etc.-Mechanics: Centrifuges-Properties of matter: Young's modulus – rigidity modulus of solids like bones-Gut materials. Surface Tension of Bio-fluids – Viscosity of liquids-Heat: Low temperature – Demonstration – Deep Freezers – Freezing-Chambers, etc.--Optical Instruments – Microscopes, colorimeters, photometers, spectrophotometers, endoscopes, etc.-X-rays - diagnosis & treatment-Radioactive radiations – measuring counters, tagging and tracing.

7.PEG 114 Engineering Mathematics – I 2(1+1)

Theory: Differential calculus-Function of single variable-intermediate form and L' hospital rule; Rolle's and mean value theorems (without proof); Taylor's and Maclaurin's expansion; Function of two or more independent variables- partial derivatives; Euler's theorem for homogeneous function; Total derivatives; Derivative of an implicit function; Jacobians; Maxima and Minima; Lagrange method of multipliers. Integral Calculus: Evaluation of definite and improper integrals; Fundamental and Mean value theorems of Integral calculus (without proof); Beta and Gamma functions; The arc length of the curve; Volumes and Surface area of revolution of curves; Double and Triple integrals and their applications. Ordinary Differential Equation: First order equation(linear and non-linear); Differential equation of higher orders, Methods of finding complementary function and particular integrals; Method of variation of parameters; Cauchy- Euler's equation; Power series solution; Legendre polynomials and Bessel's functions of the first kind and their properties. Vector Calculus: Introduction of vectors and all properties ; Differentiation of vectors, scalar and vector point function; Vector differential operator del, Gradient of a scalar point function, Divergence and Curl vector point function and their Physical interpretations; identities involving del; Second order differential operator; Directional derivatives; Line, Surface and Volume integrals; Stokes, Gauss and Green's theorems(without proof).

Practical: Problems based on Taylor's expansion , Eulers theorem, Maxima and Minima, Double and Triple Integrals, Linear and Nonlinear first order equation, Method of finding complementary function and particular integrals, Cauchy Euler equation, Directional derivatives, line integrals, Stokes and Green's theorem.

8. PEG 115 Principles of Civil Engineering 3(2+1)

Theory: Planning- Forms of planning - Economic planning of the farm operation -An approach to building planning -Background information -Calculations -Functional design of the building - Finalization of sketching-Final design- Farmstead planning -Zone planning-Safety and fire protection Project planning -Project evaluation and techniques.

Construction materials :Wood -Hardwoods versus softwoods-Wood characteristics -Defects in wood - Poles and timber-Wooden poles -Sawing timber -Seasoning of timber -Grades and sizes for timber - Strength of wood -Timber preservation -Wood preservatives-Manufactured building boards -Plywood - Other manufactured boards -Other wood products -Other organic materials -Bamboo -Natural fibres - Natural stone products -Earth as a building material -Soil classification- Soil-testing methods -Soil stabilization- Cob - Wattle and daub (mud and wattle)-Clay/straw -Rammed earth -Adobe or sun-dried soil (mud) blocks -Stabilized-soil blocks -Comparison of masonry units made of various materials - Burnt-clay bricks-Brick making -Binders -Lime -Cement-Pozzolana -Concrete Mixing -Placing and compaction -Formwork -Curing concrete -Finishes on concrete -Reinforced concrete -Concrete blocks, sand and cement blocks- Block manufacturing -Decorative and ventilating blocks -Mortar -Finishing mortar - Plastering and rendering -Ferrocement -Fibre-reinforced concrete -Asbestos cement (AC) - Sisal-fibre-reinforced cement (SFRC) -Making corrugated reinforced roofing sheets- Walls using the sisal-cementplastering technique -Metals -Corrosion -Corrosion-inhibiting coatings -Building hardware - Nails -Screws and bolts -Hinges -Locks and latches -Glass -Plastics -Thermoplastics -Thermosetting

plastics -Rubber -Bituminous products -Paints -Painting -Estimation of quantities of paint required -Oil- and resin-based paints -Water-based paints.

Building production :The building production process -Methods of construction -Prefabrication -On-site prefabrication -Off-site prefabrication- Tendering -The tender procedure Methods of tendering -Evaluation of tenders -Contracts -Specifications -General specification -Progress chart -Inspection and control -Safety at building sites -Building maintenance

Practical : Graphical techniques-Printing and plotting process-Selecting a scale for drawings -Standard paper sizes used for plotting -Title box -Architectural symbols.Documentation for a building project. Site plan -Plan of external service runs -Foundation plan- Plan view -Section -Elevation -Details Plan of electrical -installations -Plan of water and sanitary installations -List of drawings -Technical specifications -Functional and management instructions -Bill of quantities-Cost estimate. Time schedule .Geospatial techniques Survey of a building site -Distances –Angles Vertical alignment -Leveling -Chain surveying -Setting out the building work -Excavation depth control -Volume of earth to be removed

9.PED 111: Physical Education **1 (0+1)**

Practical

Introduction to physical education: Definition, scientific machine principles, objectives, scope, history, development and importance; Physical training and health; Fartlek training and circuit training; Body mechanism and body type: Kretchmark's and Sheldon's classification; Theories of learning; Exercises for good posture; Exercises to develop physical fitness, growth, flexibility - components, speed, strength, endurance, power, flexibility, agility, coordination and balance; Test and measurement in physical education: Physical fitness test, motor fitness test, ability test, cardiovascular efficiency test and physical fitness index; Calisthenics, weight training, aerobic and anaerobic exercises; Circuit training, interval training, far trek training, pressure training and resistance training; Importance of *Asanas*, free hand exercises and yoga; Recreation: Definition, agencies promoting recreation, camping and re-recreation; Governance of sports in India; Organization of tournaments; National and international events; Drawing of fixtures; Rules and regulations; Coaching and fundamentals of skill development of major games, coaching and tactic development of athletic events

SEMESTER II

Sl.No	Course No	Course Title	Credit Hours
1.	***PSE 121***	Fundamentals of Microbiology	3 (2+1)
2.	***PSE 122***	Introduction to Poultry Management	3 (2+1)
3.	***PSE 123***	Poultry Housing and Environment	4 (3+1)
4.	***PTE 121***	Environmental Sciences and Disaster Management	3 (2+1)
5.	***PEG 121***	IT Application in Poultry Industry	*3 (2+1)*
6.	***PEG 122***	Engineering Mathematics - II	2 (1+1)
7.	***PEG 123***	Materials and Structural Engineering	3 (2+1)
8.	***PEG 124***	Thermodynamics	3 (2+1)
9.	***NSS 121***	***National Service Scheme***	**1 (0+1)***
		Total	**25 (16+9)**

* Non Credit Course

1. PSE 121 Fundamentals of Microbiology 3 (2+1)

Theory: Evolution and scope of Microbiology. General morphological, cultural characteristics and Reproduction of bacteria, yeasts, fungi, actinomycetes, algae, protozoa, and rickettsia.Nutrient transport phenomenon, physiology of microorganisms.Genetic recombination, transduction, transformation and bacterial conjugation, mutation and mutagenesis. Growth curves: Physical and chemical factors influencing growth and destruction of microorganisms (including thermal death time, Z, F & D values). Viruses: Structure and replication with particular reference to food borne viruses, growth and destruction of microorganisms. Control of Microorganisms by physical and chemical agents, antibiotics and other chemotherapeutic agents.Preservation of microbial cultures.

Practical: Microscopy, Micrometry, Cleaning and sterilization of glassware, Preparation of nutrient agar media and techniques of inoculation, Staining methods (monochrome staining, negative staining, capsule-staining, flagella staining and endospore staining). Pure culture techniques (streak plate/pour plate). Introduction to identification procedures (morphology and cultural characteristics). Growth characteristics of bacteria: Determination of microbial numbers, direct plate count, standard plate count, generation time. Factors influencing growth: pH, temperature, growth curves for bacteria. Methods of microbial culture preservation for bacteria and yeasts.Anaerobic culture methods.

2.PSE 122 Introduction to poultry management 3 (2+1)

Theory: Origin of Poultry – classification and nomenclature - Class, breed, strain and variety of **chicken and poultry** - Native breeds of chicken and poultry -Improved varieties of chicken-Significance of poultry as food. Economic importance of farming of chicken, Japanese quail, turkey, guinea fowl duck and goose. Brooding- whole house brooding, partial brooding, spot brooding, tent brooding. Arrangement of brooders and equipments- chick performance under brooders, chick check-Management of layers, broilers, breeders and back yard poultry. Incubation - transportation of chicks-Lighting management, litter management, sanitation, water sanitation and biosecurity –introduction to diseases of poultry – disease prevention and control. Welfare needs of poultry- Transport of poultry -behavior of poultry.

Practical: Identification of breeds, varieties and classes of chicken and other poultry. -Identification of body parts of chicken and other poultry- Identification of sex of chicken and other poultry- types of combs – handling of chicken and other poultry -catching of chicken and other poultry -debeaking, dubbing, wing banding, toe nail clipping, toe punching, vaccination. preparation of poultry houses for brooding- routine practices at commercial poultry farm-culling for production- culling for present production; vent, pubic bones, comb, wattles and ear-lobes- culling for intensity of production; abdominal capacity, handling quality– culling for persistency of production; pigmentation,molting-structural differences in old and new feathers-molting differences in layers- high producers vs low producers.Disinfection and sanitation procedures of poultry farm. Measures of performance efficiency in poultry- farm, hatchery records.

3. PSE 123Poultry housing and environment 4 (3+1)

Theory:

Selection of site and location of poultry farm- Principles ofPoultry house construction - Requirements of floor space, watering and feeding space for poultry in different rearing systems.

Systems of rearing- Free-Range Extensive Systems - Backyard Extensive Systems- Semi-Intensive Systems including paddock for ratite - Intensive Systems.

Types of houses- open-sided- windowless house. Housing systems for pullets and layers -semi-intensive; deep litter; slatted or wire floor; a combination of slatted floor and deep litter; cage or battery system; raised platform cage houses. Planning for continuous production.Alternate housing- Furnished Cages for Egg-Laying Strains of Chickens - Aviaries or Multi-Tier Systems for Egg Laying. Housing systems for broilers- deep litter, cages - Environmentally controlled houses-cross- tunnel ventilation. All- in, All- out and batch system of rearing. Housing systems for breeders - deep litter, cages. Housing systems for turkeys, Duck, Goose, Japanese quail and Ratites

Poultry farm equipment – brooding, feeding, and drinkers. Cages – Types of cages-conventional, reverse cages, flat deck, Californian cages, 'A' type cages, tier cages.

Animal environmental requirements- Heat regulation- Animal moisture and heat production- Climatic factors- Temperature- Humidity- Radiation- Air movements-Precipitation- Effect of climatic factors on poultry performance.
Fundamentals of heating and cooling-Heat terminology -Heat transfer -Conduction - Convection - Radiation -Thermal resistance of building components -Insulating materials -Selecting insulation - Surface resistances -
Thermal resistance of pitched roof spaces-Overall heat transfer coefficients -Rate of overall heat loss or gain from a building -Solar load -Example of heat loss from buildings-Psychrometry -Properties of moist air -Psychrometric chart -Air–water-vapour mixture processes -Adiabatic mixing of two air streams -Moisture transmission -Vapour barriers. Condensation on surfaces and within walls- Heating and cooling loads -The cooling load -The heating load -Methods of estimating cooling and heating loads -Overview of heating, ventilation and air-conditioning systems and equipment -Heating systems -Air-conditioning systems -Ventilation and air-handling systems -Electrical systems.
Ventilation
Climatic zones -Ventilation process -Determination of ventilation rates -Heat balance for determination of maximum ventilation rate -Moisture balance for determination of minimum ventilation rate -Natural ventilation - stack effect - factors which affect the air flow in naturally ventilated houses-Mechanical ventilation - positive pressure-negative pressure-Fans and blowers -Ventilation system design: cool climates -Air distribution -Ventilation controls -Ventilation design example -Cooling -Evaporative cooling -Refrigeration
Practical:
Layout plans for poultry house-broiler, layer and breeder. Construction co-efficient- Comparative cost analysis of various housing systems- costing of cages and equipment - Measurement of temperature, relative humidity, air velocity, air composition in poultry houses.
Calculation of heating and lighting costs in poultry houses. Calculation of ventilation requirements in tunnel ventilated and cross ventilated houses.

4. PTE 121: Environmental Sciences and Disaster Management 3 (2+1)

Theory

Environmental science: Definition and inter-relationships, Man- environment relationship, Impact of technology on the environment, Environmental degradation.

Ecology and ecosystems: Introduction, objectives and classification, concepts of an ecosystem, structure and function of ecosystem; Components of ecosystem, Bio-geo-chemical cycles, Food chains: Grazing, detritus, food webs, Ecological pyramids. Major ecosystems: Forest ecosystem, Grassland ecosystem, desert ecosystem, aquatic ecosystem, estuarine ecosystem, Population and pollution, population growth, demographic projections and population structures, production of food.

Biodiversity and its conservation:- Introduction, definition, genetic, species & ecosystem diversity and biogeographical classification of India. Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values. Biodiversity at global, National and local levels, India as a mega-diversity nation. Hot-sports of biodiversity. Threats to biodiversity: Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

Water resources- Surface and ground water sources, uses and overuses of water resources, water pollution - sources of water pollution, classification of water pollutants, effects of water pollutant.

Forest resources- forest types, deforestations- Causes and effects, forest degradation in India, Energy resources- conventional and Non-conventional energy sources- Advantages and its limitations, problems due to overexploitation of energy resources.

Environmental pollution:

Air pollution: Composition of air, structure of atmosphere, ambient air quality standards, classification of air pollutants, sources of common air pollutants, effects of common air pollutants.

Land and noise pollution: Introduction, lithosphere, land uses, causes of land degradation, sources of noise pollution, effects of noise pollution, Radioactive pollution.

Food processing industry waste and its management, Management of urban waste water, Recycling of organic waste, Recycling of factory effluent, Control of environmental pollution through law, Composting of biological waste, Sewage, uses of water disposal effluent treatment, Current environmental global issues, Global warming and green houses effects, acid rain, depletion of ozone layer.

Practical

Environment and its analysis; Water quality parameters; Collection of sample for pollution study; Determination of pH/acidity/alkalinity from sample; Estimation of dissolved oxygen; Estimation of BOD; Estimation of COD; Estimation of nitrates; Estimation of phosphates; Estimation of pollutant elements; Estimation of heavy/toxic elements; Estimation of lead /mercury; Visit to industrial sewage disposal unit.

5. PEG 121 IT Application in poultry industry 3 (2+1)

Theory:

Importance of Computerization and IT in Poultry Industries: Computers, operating environments and information systems for various types of Poultry industries.Networking basics.The internet and the www – Internet services – connecting to the internet - Working with applications software – productivity software – graphics and multimedia – Data base Management systems – Creating computer program.C programming fundamentals – compilation process – variables – Data types – Expressions – looping – decisions. Arrays - Working with functions – structures – characterstrings – pre-processor. Pointers – Dynamic memory allocation – linked list – Applications. Introduction to SCADA and INTELLUTION, CAD and CAM in Poultry Industry; Instrumentation, Process Control Inventory Control

Practical:

Simple OS commands and simple editors for file operations -Word processors for more complex operations, like formatting documents, creating tables -Simple data base packages for creating and manipulating databases-Spread sheet packages for data preparation and analysis-Applications of MS Excel to solve the problems of poultry technology. Elements of statistical quality control. Familiarization with the application of computer in poultry industries: Meat and egg processing plants, Feed mill and hatchery. Familiarization with software related to poultry industry.

6. PEG 122 Engineering Mathematics - II 2(1+1)

Theory: Matrices: Algebra of matrices; Rank of a matrix; Gauss Jordon method to find inverse of matrix; Consistency and solution of linear equations; Eigen values and Eigen vectors; Cayley-Hamilton theorem; Symmetric ,Skew- symmetric and Orthogonal matrices; Hermitian, Skew-hermitian and Unitary matrices; Diagonalisation of matrices. Complex Variable: Analytic function; Application in solving potential problems; Cauchy Riemann equations; Conjugate functions and Harmonic functions; Line integral, Cauchy's integral theorem and Formula(without proof), Taylor's and Laurents series; Residue theorem (without proof) application.Fourier Series: Infinite series and Its convergence; Power series; Fourier series; Half range Sine series and Cosine series.Partial Differential Equation: Separation of variable method; Solution of one dimensional Wave and Heat flow equations, Laplace equation.

Practical: Problems based on Rank of a matrix, Inverse matrix, Eigen values and Eigen vectors, Taylor's and Laurents series, Fourier series, Half range sine and Cosine series and Separation of variables method.

7. PEG 123 Materials and Structural Engineering 3 (2+1)

Theory: Basic mechanics - Basic principles of statics -Static equilibrium - Force-Resolution of a force - Loading systems -Shear force and bending moment of beams -Forces in pin-jointed frames -Mechanics of materials -Direct stress -Strain – Elasticity- Factor of safety -Structural elements and loading -Applied loads -Principle of superposition -Effects of loading -Structural elements -Properties of structural

sections-Area -Centre of gravity or centroid -Moment of inertia-Section modulus -Radius of gyration - Structural design - Structural design process -Philosophy of designing -Design aids -Design codes - Design of members in direct tension-and compression -Tensile systems-Short columns -Design of simple beams -Bending stresses Horizontal shear -Maximum horizontal shear force in beams -Deflection of beams -Design criteria -Bending moments caused by askew loads -Universal steel beams -Continuous beams -Standard cases of beam loading-Composite beams -Built-up timber beams Columns -Buckling of slender columns -Axially loaded timber columns -Axially loaded steel columns -Axially loaded concrete columns -Eccentrically loaded timber and steel columns -Plain and centrally reinforced concrete walls –Trusses Frames -Connections -Timber structure Connections in steel structures - Stability Retaining walls Wall failure Pressure exerted by retained material -Designing for earthquakes.

Practical: Materials and Structural Engineering - Tests on bricks - Compressive Strength – Water Absorption – Efflorescence. Tests on cement Specific gravity – Soundness – Consistency and Setting Times - Vicat – Le Chatelier's and Ve bee apparatus – Blain's apparatus.Tests on aggregates Crushing Strength – Impact Resistance – CBR Value –Flakiness Index.Tests on concrete Slump cone – Flow table – Cube and Cylinder strength – Modulus of Rupture.Tests on structural steel.

8.PEG 124 Thermodynamics 3(2+1)

Theory:

Unit I: Basic concepts

Types of thermodynamics – Microscopic & macroscopic approach, thermodynamic systems – classification – properties and state of a system.Thermodynamic process, cycle and equilibrium. Point and path functions – Zeroth law of thermodynamics. Unit of temperature and pressure. Energy – types – Law of conservation of energy. Heat – specific heat – thermal capacity and water equivalent. Mechanical equivalent of heat, work – Heat and work – a path function. Comparison of heat and work – power.First law of thermodynamics – Energy balance of closed systems.Limitations of first law of thermodynamics.

Unit II: Properties and Processes of perfect gases

Laws of perfect gas – general and characteristic gas equation – Avogadro's law – universal gas constant. Specific heats of a gas - Internal energy, enthalpy and molar specific heat of a gas.Regnault's law – relation and ratio between specific heats.Reversibleand irreversible process, classification of thermodynamic processes.Work done during a non-flow process – Application of first law of thermodynamics to a non-flow process. Perfect gas processes – P-V, P-T relationship, work done, change in internal energy heat transfer and change in enthalpy during constant volume, constant pressure, constant temperature, adiabatic andpolytropic processes. Flow process – application of first law of thermodynamics to a steady flow process. Work done for constant volume, constant pressure, constant temperature, adiabatic and polytropic flow processes. Application of steady flow energy equation to boiler, condenser, evaporator, nozzle, turbine, rotary and reciprocating compressor.

Unit III: Second law of thermodynamics and entropy of perfect gases Kelvin planck and Clausius statements – Equivalence of Kelvin – planck and Clausius statements. Relation between heat and entropy – Importance and units of entropy – available and unavailable heat energy – Clausius inequality – principle of increase of entropy – change of entropy of a perfect gas – in terms of volume and absolute temperature, pressure and absolute temperature, pressure and volume. Change of entropy of a perfect gas during constant volume, constant pressure, constant temperature, reversible adiabatic and polytropic processes.

Unit IV: Thermodynamic air and vapour cycles Thermodynamic air standard Carnot, Otto and Diesel cycles. Carnot vapour cycle and ideal Rankine cycle.Unit V: Properties and entropy of steam- Formation of steam at a constant pressure – Temperature vs total heat graph during steam formation. Wet, dry saturated and super-heated steam – Dryness fraction of wet steam – Enthalpy and specific volume of steam – uses of steam tables. Phase rule – PV, PT, TV, TS and h-s diagram for water and steam. Entropy of water – Entropy increase during evaporation.Entropy of wet, dry and super-heated steam.

PRACTICAL:

Problems on conversion of pressure and temperature units, heat and work in non-flow quasi static process, first law of thermodynamics, perfect gas non-flow processes – constant volume, pressure and

isothermal, adiabatic and polytropic, combination of processes, steady flow processes. Problems on second law of thermodynamics, application of steady flow equation to boiler, condenser and evaporator, steady flow equation to nozzle, turbine, rotary and reciprocating compressor. Problems on entropy of perfect gas, Carnot, Otto and Diesel cycles.Problems on vapour cycles – Carnot and ideal Rankine cycle. Problems using steam tables and Molliar chart, entropy of steam.Determination of dryness fraction of steam. To study the boiler installed in Model Plant, Water softening plant, Lancashire boiler, Locomotive boiler, Babcock & Wilcox boiler, Electrode boiler, Boiler mounting and steam-line layout and steam traps. Visit to sugar mill/rice mill or plant with steam utilization. Study of Solar water heater and biogas plants and appliances.

9. NSS 121: National Service Scheme 1 (0+1)

Practical:

Orientation of students towards national problems; Study of the philosophy of N.S.S., fundamental rights, directive principles of state policy, socio-economic structure of Indian society, population and five year plans; Functional literacy: Non-formal education of rural youth, eradication of social evil, awareness programmes, consumer awareness, highlights of the Consumer Act, environment enrichment and conservation, health, family welfare and nutrition; Right to information act.

SEMESTER III

Sl.No	Course No	Course Title	Credit Hours
1.	***PSE 211***	Poultry Genetics	*2 (1+1)*
2.	***PSE 212***	Basic Poultry Nutrition	3 (2+1)
3.	***PTE 211***	Egg Composition and Quality	3 (2+1)
4.	***PTE 212***	Primary Processing and Preservation of Poultry	3 (2+1)
5.	***PEG 211***	Heat and Mass Transfer	3 (2+1)
6.	***PEG 212***	Engineering Mathematics - III	2 (1+1)
7.	***PEG 213***	Fluid mechanics and hydraulics	*3 (2+1)*
8.	***PBM 211***	Poultry Economics and Marketing	3 (2+1)
		Total	**22 (14+8)**

1. PSE 211 Poultry Genetics 3 (2+1)

Theory:

Mendalian Inheritance in poultry-Qualitative and quantitative traits.Dominant and recessive characters.Inheritance of qualitative and quantitative traits in poultry and their usefulness.Inheritance of comb, plumage and other qualitative traits.Sex-linked and sex limited traits, their inheritance and usefulness. Quantitative genetics: Nature and properties of economically important traits and their modes of inheritance. Gene action influencing the traits.Lethal and semi-lethal traits in poultry and their mode of inheritance. Population genetics: Genetic structure of population: Gene and genotypic frequency: Hardy -Weinberg law and its application; Values and means. Components of phenotypic and genotypic variance; Concept of genotype and environment interaction, Resemblance between relatives; Heritability, genetic and phenotypic correlations. - Major genes and their usefulness in poultry breeding in tropics. Conservation of poultry genetic resources.Transgenic.

Practical: Solving problems on inheritance of Mendelian traits.Linkage and Crossing over. Calculation of gene and genotypic frequencies, Computation of population mean; Estimation of heritability, genetic and phenotypic correlations.

2. PSE 212Basic Poultry Nutrition 3 (2+1)

Theory: Fundamentals of nutrition – proximate composition -Nutrients in feed stuffs-macro and micro nutrients –Energy, protein, fat, vitamins and minerals- essential and limiting amino acids, essential fatty acids. Digestion and metabolism. Nutrient requirements for various species and classes of poultry-calculation of energy, protein requirements of layers, broilers and breeders. Factors influencing nutrient requirements–factors affecting feed intake and feed efficiency- nutrient interrelationships–feed additives –enzymes, prebiotic, probiotic and nutraceuticals. Antinutritional and toxic substances in feedstuffs – mycotoxin –nutritional deficiency diseases.

Practical Estimation of proximate principles- moisture, crude fibre, nitrogen free extract, ether extract, crude protein, total ash. Good laboratory practices, Preparation of chemicals and reagents, Proximate principles – Determination of moisture, Determination of crude fibre by conventional and fibretec method, Determination of ether extract by conventional and soxhlet method, Determination of crude protein by Kjeldhal method, Determination of total ash and acid insoluble ash, Calculation of nitrogen free extract, Estimation of calcium and phosphorus in poultry feed.

3. PTE 211Egg Composition and Quality 3(2+1)

Theory: Female reproductive system – structure of egg- formation of egg in female reproductive system – hormonal regulation of egg production — Egg composition and nutritive value of egg –Shape and size of avian eggs- Functional properties – factors affecting egg & shell quality, factors influencing egg composition- egg quality deterioration –causes for quality deterioration –microbial spoilage of egg. Different standards and grades of egg; AGMARK, USDA, EU, UNECE, IEC Standards for table eggs.Shell egg processing for table: Materials-Handling equipment- Cleaning and sanitizing shell eggs, washing, grading, pasteurization of eggs in shell-grading-storage-dry and cold- shell egg cooling- shell egg packaging, transport. Functional/designer egg/specialty eggs; Organic egg - eco-labeling; labels regulated by USDA. CODEX standards, EIC, EU standards for drug residues and pesticide residues in eggs- Traceability-- export regulation and specification of table eggs.

Practical: Measurement of egg weight, egg shape index, egg surface area, egg shell thickness, shell weight, Shell strength, specific gravity. Methods of Quality Evaluation of Eggs- Grading- Exterior Quality Factors-- Shell Shape and Texture, Soundness of Shell- Shell Cleanliness- Interior Quality Factors; Air Cell, Yolk, White- Determining Interior Quality by Hand Candling. Determining Interior Quality by the Breakout Method. Breakout Equipment- Haugh unit, albumen index, yolk index, yolk colour. Measurement of air cell depth - different methods of preservation of egg. Layout of shell egg processing plant for table.

4. PTE 212Primary Processing and Preservation of Poultry 3 (2+1)

Theory: Structure and composition of poultry meat-Nutritive value of different class of poultry. Selection of site for poultry slaughter house – layout and design of poultry slaughter house-hygienic principles – Primary processing of chicken and other avian species - Stunning- slaughter and exsanguinations –Scalding- defeathering- Washing- Evisceration-Chilling-Draining-Grading, weighing and portioning of poultry, Cutup - deboning –carcass-packing –Methods of packing of poultry. Transport and pre-slaughter facilities - Rigor mortis- conversion of muscle to meat - Ageing - principles of Poultry meat preservation techniques – Temperature control, moisture control and direct microbial inhibition including irradiation and hurdle technology- quality control and HACCP regulation for poultry processing -export regulation & specifications.

Practical: Preparation of blueprint for poultry processing plant - Slaughter and dressing of poultry - cut up parts - processing yields and losses — preservation of poultry – curing – smoking – dehydration –. Fraudulent substitution – Meat species identification. Visit to modern poultry processing plant.

5. PEG 211 Heat and Mass Transfer 3 (2+1)

THEORY:

UNIT I: Heat Transfer – Conduction

Basic transfer processes – heat, mass and momentum – heat transfer process - conductors and insulators - conduction – Fourier's fundamental equation – thermal conductivity and thermal resistance - linear heat flow – heat transfer through homogenous wall, composite walls, radial heat flow through cylinders and sphere – extended surfaces (fins) — solving problems in heat transfer by conduction.

UNIT II: Heat Transfer - Convection

Newton Rikhman's law – film coefficient of heat transfer - convection – free and forced convection - dimensional analysis and its application – factors affecting the heat transfer coefficient in free and forced convection heat transfer – overall heat transfer coefficient - solving problems in heat transfer by convection.

UNIT III: Heat Transfer – Heat Exchanger

Heat exchangers – parallel, counter and cross flow – evaporator and condensers – Logarithmic Mean Temperature Difference – overall coefficient of heat transfer – tube in tube heat exchanger, shell and tube heat exchanger, plate heat exchanger – applications of heat exchangers - solving problems in heat exchangers.

UNIT IV: Heat Transfer: Radiation Radiation heattransfer – concept of black and grey body - monochromatic total emissive power – Kirchoff's law – Planck's law - Stefan-Boltzman's law – heat exchange through non-absorbing media - solving problems in heat transfer by radiation.
UNIT V: Mass Transfer - introduction – Fick's law for molecular diffusion - molecular diffusion in gases – equimolar counters diffusion in gases and diffusion of gas A through non diffusing or stagnant B - diffusion through a varying cross sectional area and diffusion coefficients for gases - molecular diffusion in liquids, biological solutions and gels.
Practical:
Measurement of thermal conductivity by composite wall and lagged pipe method- determination of heat transfer coefficients in free and forced convection – experiments with parallel and counter flow heat exchangers– determination of emissivity, Stefan-Boltzmann's constant –solving problems on heat and mass transfer.To study various types of heat exchangers used in egg processing Industry. Studies on temperature distribution and heat transfer in HTST pasteurizer. Design problems on heat exchangers.

6. PEG 212 Engineering Mathematics - III 2(1+1)
Theory: Probability and Statistics: Definition of Probability and Simple theorems, Conditional probability, Bayes theorem(without proof), Random variable, Discrete and Continuous distributions, Binomial, Poisson, and Normal distributions, Correlation and Linear regression. Numerical Analysis: Finite differences, Various difference operators and Their relationships, Newton's interpolation formulae; Lagranges interpolation formulae; Solution of polynomial and a transcendental equation by Newton Raphson method; Numerical integration by Trapezoidal rule, Simpson's Rule and Gaussian Quadrature; Numerical solution of first order differential equation by Euler's method and 4^{th} order Runge- Kutta method; solution of a linear equations by L-U decomposition; Gauss- Jordon and Gauss-Seidel method.LaplaceTransforms: Definition of Laplace transform; Laplace transform of elementary functions; Properties of Laplace transforms; Inverse Laplace transform; Convolution theorem; Application of Laplace transform to solve ordinary differential equations and simultaneous differential equations.
Practical: Problems based on Bayes theorem, Binomial, Poison and Normal distribution, Correlation and Regression Newton Raphson method, Trapezoidal rule, Simpson's rule, Euler's method and Runge-kutta method and Gauss- Jordon and Gauss seidel method and Solve differential equations by Laplace transforms.

7. PEG 213 Fluid mechanics and hydraulics 3(2+1)
Theory
Unit I - Properties of fluids
Properties of fluids – definition – units of measurement - Mass density – specific weight, specific volume – specific gravity equation of state – perfect gas - Viscosity – vapour pressure – compressibility and elasticity surface tension – capillarity. Fluid pressure and measurement – simple, differential and micro manometers - Mechanical gages – calibration.Hydrostatic forces on surfaces – total pressure and centre of pressure - Horizontal- vertical and inclined plane surface - Pressure diagram – total pressure on curved surface. Archimedes principles – buoyancy – meta centre – metacentric height
Unit II - Fluid flow analysis
Types of fluid flow – velocity and acceleration of a fluid particle - Rotational – irrotational – circulation and vorticity - Flow pattern – stream line – equipotential line – stream tube – path line – steak line – flow net – velocity potential – stream function. Principles of conservation of mass – energy – momentum – continuity equation in Cartesian co-ordinates - Euler's equation of motion.
Unit III – Flow measurements
Bernoulli's equation – applications - Venturimeter – orifice meter – nozzle meter rota meter – elbow meter pitot tube – Orifice – sharp edged orifice discharging free – submerged orifice – mouth piece - Flow through orifice under variable head – time of emptying a tank with and without inflow. Flow through pipes – laminar and turbulent flow in pipes -Reynold's experiment - Darcy – Weisbach equation for friction head loss – Chezy's formula – Manning's formula – Hazen-William's formula - Major and minor losses in pipes – hydraulic gradient line – energy gradient line. Siphon – water hammer in pipes – gradual and sudden closure of values
Unit V - Dimensional analysis & Pumps -concept of geometric, kinematic and dynamic similarity.Important nondimensional numbers – Reynolds, Froude, Euler, Mach and Weber. Pump

terminology – suction lift, suction head, delivery head, discharge, water horse power – selection of pump capacity. Centrifugal pumps – components – working – types of pumps and impellers - Priming – cavitation – specific speed – characteristics curves. Turbine and submersible pumps - Jet pump – jet assembly - Other pumps – Air lift pump - reciprocating pump - sludge pump and vacuum pump- Hydraulic ram

Practical

Problems on properties of fluid - Pressure measurement - hydrostatic forces - kinematics of flow - continuity equation - tank emptying - Measurement of head loss in pipe lines and pipe fittings – Flow measurement in pipes with venturi meter & orifice meter Dimensional Analysis - Study on performance of centrifugal pumps - mono-block pump - reciprocating pump.

8. PBM 211Poultry Economics and Marketing 3 (2+1)

Theory:

Economics – Definition and Nature & Scope of Economics – Divisions of Economics - Economic systems – Definitions and characteristics - capital economy – socialist economy –Mixed economy - Theory of Consumer behavior - Utility- definition and measurement – cardinal and ordinal approaches – Law of diminishing marginal utility – Graphical derivation of demand curve - Ordinal approach - Indifference curve – characteristics – budget line – equilibrium of consumer. - Demand –individual demand – market demand – demand schedule – demand curve – Law of demand and factors affecting it. -Elasticity of demand – price, income and cross elasticities – estimation – point and arc elasticity - Giffen Good – normal and inferior goods – substitutes and complementary goods - Engel's Law of family expenditure and significance. -Consumer's surplus– estimation and applications. Production – factors of production – land & characteristics; Labour – quantity and quality of labour- - division of labour – efficiency of labour – Malthusian -Capital - characteristics - capital formation; Organization of business firms – types and -characteristics - Concept of shares &debenture. - Supply-Law of diminishing marginal return – its application to agriculture - Cost concepts – short run & long run cost curves - optimum level of production. - Graphical derivation of supply from cost curve - supply schedule – supply curve – Law of supply – elasticity of supply.- Factor pricing ; rent - Ricardian rent-economic rent – Quasi – rent; Wage– marginal productivity; theory of wage; Interest - Liquidity preference theory; Profit –Risk-bearing theory of profit. - Macroeconomics – Concepts of - Gross National Product (GNP) - Gross Domestic Product (GDP) - Net National Product (NNP) - Percapita income.-Money – Definition & functions of money; inflation –consequences & control**.-** Public finance - public revenue - public expenditure; taxation - principles of taxation **-** Markets and Marketing-Components of a Market-Dimensions of a Market-Classification of Markets-Importance of Agricultural Marketing-Market Structure – Meaning-Components of Market Structure-Dynamics of Market Structure – Conduct and Performance-Agricultural Marketing and Economic Development- -Marketing Agencies-Marketing Institutions-Marketing Channel-Factors Affecting Length of Marketing Channels- Marketing channel of Poultry and egg – Market Integration-Degree of Integration- Marketing Costs, Margins and Price Spread–Constraints in marketing of Poultry and egg. Market intelligence.

Practical: Basic guidelines for preparation of project reports- Bank norms – Insurance Techno-economic parameters for preparation of projects. Preparation of Bankable projects for various poultry species- Broiler, Layer, Breeder, hatchery, Feed mill and egg and meat processing plant. Identification of marketing channel for Poultry Products – Calculation of Price Spread.

SEMESTER IV

Sl.No	Course No	Course Title	Credit Hours
1.	***PSE 221***	Applied Poultry Nutrition	3 (2+1)
2.	***PSE 222***	Commercial Layer Production	3 (2+1)
3.	***PTE 221***	Poultry Meat Processing Technology	3 (2+1)
4.	***PTE 222***	Value Added Egg Products	3 (2+1)
5.	***PEG 221***	Applied Statistics	2 (2+0)
6.	***PEG 222***	Refrigeration and Cold Chain	3 (2+1)
7.	***PEG 223***	Electrical Engineering	3 (2+1)
8.	***PEG 224***	Applied Electronics	3 (2+1)
		Total	**23 (16+7)**

1. PSE 221 Applied Poultry Nutrition 3(2+1)

Theory : Common feed stuffs for poultry-Classification, composition and nutritive value –evaluation of feed stuffs for energy and protein. Feeding of chicken- chicks, growers, layers, broilers, breeders, backyard chicken, Japanese quail, turkey, ducks, guinea fowl, geese and ratites. Reverse Phase Feeding - BIS and NRC standards- ration formulation and formulation of vitamin and mineral premix–software in least cost feed formulation – nutrient and Non-nutrient feed additives and supplements – Enzymes – prebiotics, probiotics and nutracueticals –Form of diet - mash, crumbles and pellets. –Feeding during extreme climates- Feeding for increased breast yield, lean meat production, designer egg and meat production andFoiegras production.Utilization of unconventional feed stuffs –storage of feed stuffs. Systems of feeding – cafeteria feeding, whole grain feeding, mash and grain feeding, complete mash feeding, pellet, crumble feeding, Phase feeding and restricted feeding of chicken.

Practical: Sampling procedures for feed analysis-Evaluation of feed for quality – Physical, Chemical and Biological. Bulk density of feed stuff-Feed microscopy- Common adulterants of different feed ingredients- Floatation techniques – spot tests for minerals – quick chemical tests for minerals and adulterants in feed stuffs –quality test for protein meal. Feed formulation and practical feeding of broiler, layer, breeder flocks, Japanese quail, turkey, ducks, guinea fowl, geese, ratites and back yard poultry - Computing of least cost rations using software. Estimation of Mycotoxin in poultry feeds.

2. PSE 222 Commercial Layer Production 3(2+1)

Theory: Table egg industry- Introduction and scope of layer farming – different rearing systems – Housing- open-sided, raised platform and environmental controlled houses-equipments- Different types of cages- cage specification Commercial layer strains - Production standards. Chick, grower, pre-layer and layer management- rearing of replacement pullets, sample weighing birds, factors affecting body weight, uniformity of growing pullets, body frame measurement. Lighting the replacement pullet. watering and feeding- Management in alternate housing systems, aviary, free range- litter management – fly control - Production indices: egg weight, feed efficiency and livability– factors influencing egg number,Photo periodism and lighting regimens – Culling and replacement - recycling of laying flocks- forced moulting- summer and winter management - beak trimming- vaccination and preventive medication schedule- Vices and their remedies - rodent control– Bio security measures- manure disposal.mechanical egg collection, manure collection systems

Practical: Routine farm operations - selection- culling-Identification of good and poor layers – Medication and vaccination schedules - demonstration of various management procedures – debeaking, delicing and deworming, spraying and fogging - Preparation of project report for a layer farm - Economics of layer farming- record keeping- visit to commercial layer farm.

3. PTE 221 Poultry Meat Processing Technology 3 (2+1)

Theory: Poultry meat processing and value addition - basic meat processing principles- particle size manipulation- mincing- milling- flaking- chopping- curing-tumbling – massaging- smoking. – Processed meats – Raw materials and Non-meat ingredients –Classification of meat products-Yield and product characteristics**.** Formulation of meat products-comminuted products – patties, sausages, nuggets, enrobed products-fermented products-cured and smoked products - dry meat product – Intermediate Moisture Foods- Restructured meat products. Deboned chicken meat products- Breast Fillets- Chicken essence – cooking methods for Poultry meat - ready to cook and ready to eat products. Barbecued, grilled chicken- Turkey roast-Indigenous chicken products - Tandoori chicken and quail - chicken kabab - pickled meat.Government of India regulations for import and export of poultry products.

Practical: Establishing a Meat Science Laboratory - Further processing of poultry – Preparation of various poultry meat products - Curing and smoking – Cooking and barbecuing. Assessment of microbial load in poultry meat and meat products.

4. PTE 222 Value Added Egg Products 3 (2+1)

Theory: Basic egg products- definition-advantages- shelf life – Equivalence- Specification of egg quality for product preparation- composition of egg products- whole eggs, whites, yolks, and various blends- liquid, frozen and dried forms- egg powder. Shell egg processing for pulping: Supply systems: in-line and off-line- receiving shell egg, holding/cooling, dry cleaning, washing and sanitizing, Inspection and sorting. Egg pulpingprocess; egg breaking and separating- cup and slide separation. Liquid egg product handling: Filtration –Cooling –Blending-Stabilization –pre-treatment of eggs:

fermentation and ammonia treatment for desugarisation. Liquid Recovery from Eggshells: Centrifuging.Storage of egg pulp before Processing. Pasteurizing systems; HTST, UHT, holding, cooling. Freezing systems; blast, slow, quick freezing;Homogenizing. Drying systems; pan drying, spray drying and packaging.freeze-drying eggs. Ultra filtration and Reverse Osmosis.Further processed egg products: retail and food service egg products.Mayonnaise and other emulsified products. Molecules of technological and pharmaceutical use – extracts of white, yolk and shell.Recycling of egg shells.

Practical: Layout of shell egg processing plant for pulping. Physical and chemical indicators of conventional egg products- USDA pasteurization requirements- microbiological specifications for egg products. Egg cooking methods: baked, cook in shells; hard and soft cooked; fried; poached; scrambled; Fractionation techniques to extract egg proteins for commercial use. Visit to egg processing plant.

5. PEG 221 Applied Statistics 2(2+0)

Theory: Concept of sampling – simple random sampling with replacement – simple random sampling without replacement - introduction to testing of hypotheses and tests of significance – 'Z' and 't' test for one sample problems 'Z' and 't' test for two sample problems – Chi-square test for independence of attributes and goodness of fit – simple correlation coefficient and its test of significance – Regression Line, rank correlation – design of experiments – principle of experimental designs – randomization, replication and local control – completely randomised design (CRD) – randomized block design (RBD),Latin Square Design and Factorial design of experiment. Use of software in statistical analysis.

6.PEG 222 Refrigeration and Cold Chain 3(2+1)

Theory: Definition of refrigeration and air conditioning, necessity of refrigeration and air conditioning. History of refrigerants, Refrigerants, definition, classification, nomenclature, methane and ethane series.Desirable properties of refrigerants% physical, chemical, safety, thermodynamic and economical.Azeotropes.Components of vapour compression refrigeration system, evaporator, compressor, condenser and expansion valve. Ice manufacture, principles of ice production, different systems. Treatment of water for making ice, Brines, Freezing tanks, ice cans, air agitation, quality of ice. Applications of refrigeration in different food products –meat products, poultry products,. Food Freezing: Freezing systems: indirect contact systems, plate freezers, air blast freezers, and freezers for liquid foods. Direct contact systems, air blast immersion, frozen food properties, density, thermal conductivity enthalpy, apparent specific heat and thermal diffusivity, freezing time, factors influencing freezing time, freezing rate, thawing time. Frozen food storage: Quality changes in foods during frozen storage.

Practical: Standard refrigeration symbols. To study vapour compression refrigeration system.Solving problems on cooling load calculations / Refrigeration load. To study the properties and performancecharacteristics of some commonly used refrigerants. To study the components of the refrigeration system.Freezing of foods by different methods.Determination of freezing time of a food material.

7.PEG 223 Electrical Engineering 3 (2+1)

Theory: Alternating current fundamentals: Electromagnetic induction magnitude of induced E.M.F. Alternating current, R.M.S. value and average value of an alternating current. Phase relations and vector representation. A.C. series and parallel circuits, Concept of resonance, poly phase alternating current circuits, three-phase concept, Star and delta connections, star delta transformation, Energy measurement. Transformers: Fundamental of transformer, Theory, vector diagram without load and with load, Losses, voltage regulation and efficiency of transformer, auto-transformer. Induction motors : Fundamental principles, production of rotating fields, construction, Rotor winding-squirrel cage and phase wound rotors, Analysis of current and torque, starting of induction motors, Motor housing, selection of motor and its controls. D.C. Machines & AC machines : Construction and operation of D.C, A. C. Motors, Types of generators, Various characteristics of generator, D.C. motors, torque-speed characteristics of D.C. motors, Starting and speed control of D.C. motors. Electric Power Economics: Electrification and load estimation Maximum demand charge, Load factor and power factor correction. Strength of Material – engineering materials, material science, use of various metals, including plastic glass, etc in food industry, selection and specification – material design, concepts and manufacturing of

various equipments and machineries for food processing plant – Characteristics properties and uses of common building materials i.e. stone, brick, lime, cement, paints and varnishes, etc.

Practical: Study of voltage resonance in L.C.R. circuits at constant frequency. (a) Star connection-study of voltage and current relation (b) Delta connection-study of voltage and current relation. Measurement of power in 3-phase circuit. (a) For balanced loads. (b) For unbalanced loads, by wattmeter and energy meters Polarity test, no-load test, efficiency and regulation test of single phase.Voltage and current relation in a 3-phase transformer of various kinds of primary and secondary connection systems. Starting of induction motor by the following starters: (i) D.O.L. (ii) Manual star-delta (iii) Automatic star-delta (iv) Manual Auto-transformer. Starting of slip-ring induction motor by normal and automatic rotor starters. Test on 3-phase induction motor, determination of efficiency, line current, speed, slip, power factor at various outputs. To determine relation between the induced armature voltage and speed of separately excited D.C. generator. Magnetization characteristic of D.C. generator. Study the starter connection and starting reversing and adjusting speed of a D.C. motor. Studies of building material, property and characterization. Studies on engineering materials, construction and properties. Studies of machine design of food processing plant.

8.PEG 224 Applied Electronics 3(2+1)

Theory: Semiconductors, p-n junction, V-I characteristics of p-n junction, diode as a circuit element, rectifier, clipper, clamper, voltage multiplier, capacitive filter, diode circuits for OR & AND (both positive and negative logic), bipolar junction transistor: operating point, classification(A,B & C) of amplifier, various biasing methods (fixed, self, potential divider), voltage divider – relay logic circuits – transistor in a control system – Darlingtn driver transistor – CE amplifier, phase shift oscillator, analysis of differential amplifier using transistor, ideal OP-AMP characteristics, linear and non-linear applications of OP-AMP (adder, subtractor, integrator, active rectifier, comparator, differentiator, differential, instrumentation amplifier and oscillator), zener diode voltage regulator, transistor series regulator, current limiting, OP-AMP voltage regulators, Basic theorem of Boolean algebra, Combinational logic circuits(basic gates, SOP rule and Kmap), flip flops – counters – binary ladder D/A converter, successive approximation A/D converter

Practical: To study V-I characteristics of p-n junction diode; To study half wave, full wave and bridge rectifier; To study transistor characteristics in CE configurations; To design and study fixed and self bias transistor; To design and study potential dividerbias transistor; To study a diode as clipper and clamper; To study a OP-AMP IC 741 as inverting and noninverting amplifier; To study a OP-AMP IC 741 as differentiator amplifier; To study a differential amplifier using two transistor; To study a OP-AMP IC 741 as differential amplifier; To study a zener regulator circuit; To study a OP-AMP IC 741 as a active rectifier;

SEMESTER V

Sl.No	Course No	Course Title	Credit Hours
1.	***PSE 311***	Commercial Broiler Production	3 (2+1)
2.	***PSE 312***	Diversified Poultry and Ratite Management	3 (2+1)
3.	***PTE 311***	Quality Control of Poultry Meat and Egg Products	2 (1+1)
4.	***PTE 312***	Hatchery Technology	3 (2+1)
5.	***PTE 313***	Poultry Feed Milling and Manufacturing Technology	3 (2+1)
6.	***PEG 311***	Instrumentation and Process Control	3 (2+1)
7.	***PEG 312***	CAD and CAM for Poultry Housing and Equipment	2 (0+2)
8.	***PBM311***	Poultry farm management and financial analysis	3 (2+1)
		Total	**22 (13+9)**

1. PSE 311 Commercial Broiler Production 3(2+1)

Theory: Introduction and Scope of broiler farming-systems of management- housing and equipment – Commercial broiler strains - production standards. Management of broilers- feeding and watering- sex separate feeding -litter management and lighting - Factors influencing body conformation, rate of

growth, feed efficiency, livability, and quality of meat - summer and winter management - vaccination and preventive medication schedule– contract farming- livebird marketing- catching, transporting, shrinkage and marketing of broilers - bio security measures.
Practical: Routine farm operations – conformation of broiler- demonstration of various management procedures- growth pattern in broilers - preparation of project report for a broiler farm -economics of broiler farming- visit to commercial broiler farm.

2.PSE 312 Diversified Poultry and Ratite Management 3(2+1)
Theory: Commercially viable species of poultry other than chicken and their significance. Exotic and Indigenous breeds, types and varieties of Japanese quail, turkey, duck, geese, guinea fowls, pigeon, Ornamental birds Emu and Ostrich –Production standards. Intensive and range system of rearing- Indigenous system of duck rearing- Housing, equipment, feeding and rearing - Breeding – Incubation periods and hatching procedure for different species –Ratite Fat/Oil and Skin processing- Common diseases affecting these species and their control- Marketing.
Practical: Identifying breeds and varieties of turkeys, ducks, geese, guinea fowls and pigeon, Japanese quail, Emu, Ostrich and ornamental birds – Layout and design of housing, cages, feeding and watering equipment– routine managemental practices. Economics of rearing turkeys, ducks, geese, guinea fowls and pigeon, Japanese quail, Emu and Ostrich – Standard slaughter and process procedures for diversified poultry.

3. PTE 311 Quality Control of Poultry Meat and Egg Products 2(1+1)
Theory:
Meat: Factors affecting meat quality – pre slaughter, slaughter and post slaughter factors – physico - chemical qualities of meat – Functional and nutrition qualities of poultry meat -keeping quality of meat and meat products – microbial qualities – microbial standards, Microbial safety of poultry meat – Eating quality parameters of Meat – Sensory evaluation of meat and meat products- Quality control, Quality assurance –HACCP- GMP – SPS measures. Food safety and standards act 2006- EIC standards– EC standards – ISO 22000 standards - Codex Alimentarius and ICMSF standards- Residues in meat - Residue assessment.
Egg products: Microbial safety of egg products. UNECE standard for egg products, IEC guidelines for egg products.Quality control, Quality assurance –HACCP- GMP – SPS measures. Food safety and standards act 2006– EC standards -Codex Alimentarius and ICMSF standards. traceability-food recall protocol. Residues in eggs- Residue assessment.Government of India regulations for import and export of egg products; EIC standards.
Practical:
Meat: Estimation of pH, WHC, ERV, Tyrosine value TBA value. Sensory assessment- - development of HACCP model for poultry processing plant.Estimation of microbial load of poultry products.Blue print for meat quality control laboratory.

Egg products: Evaluation of quality of egg products by chemical, functional, and sensory methods.Methods of chemical analysis liquid and dried egg products: total solids or moisture, Dry matter, Total protein, Total fat content, total lipid, Alpha-amylase assay, pH, Beta-hydroxybutyric acid, cholesterol.
Measuring the functional properties of egg products 1.Coagulation a. Gel Strength b. Viscosity c. Solubility 2.Foaming a. Egg White (1) Angel Cake (2) Foam Volume (3) Foam Stability b. Yolk and Whole Egg - Sponge Cake 3. Emulsion Stability
Measuring the Sensory Propertiesof egg products 1.Flavor 2. Texture3. Colour4. smell
Methods for microbiological examination of eggs: coliforms,yeast and moulds,Salmonella, staphylococcus streptococcus, direct microscopic count.
Development of HACCP model for egg processing plant.Blue print for egg quality control laboratory.

4. PTE 312 Hatchery Technology 3 (2+1)
Theory: Layout, design and location of hatchery. Incubation- Methods of incubation- physical requirements of incubation – Collection, selection, cleaning and storage of hatching eggs- - incubation methods-single and multistage incubators - types of incubators-still air, forced draft, walk-in, Tunnel incubators, vertical fan systems. Hatchery operations – setting, hatching, chick pull out, hatch window,

grading, packing and chick dispatch and transport- In-ovo, and in-hatch vaccinations and medications - role of computer in modern hatchery operations –hatchery automation –. Hatchery monitoring systems. Quality control – Microbial load assessment of hatchery- major causes of eggs failing to hatch- Post hatch break open study- analysis of poor hatchability-diagnosis of hatchability problem- biosecurity measures- hatchery sanitation- fumigation- waste management. Measures to evaluate chick quality:Visual scoring,body weight,Yolk free body mass,Chick length,Yield,Scoring systems like Tona / Pasgar score. Factors influencing chick size.Factors affecting hatchability.

Practical: Layout of hatchery and equipment- Incubator and hatcher drawings - Observation of embryological development in various species – malpositions and malformations- Routine managemental practices in hatchery - Collection, cleaning, grading/selection, setting of hatching eggs and candling- determination of hatchability-dead germs, dead in shell- measurement of egg weight loss. Demonstration of parts of incubator- operations of incubator-pedigree hatching- chick grading: Measurement of chick yield. Measurement of chick length. Wing banding, dubbing, toe nail clipping, toe punching, vaccination, sexing, packing and transportation of chicks. Cleaning, disinfection and fumigation of hatchery - hatchery records- Microbial load assessment of hatchery.Hatchery ventilation systems: calculation of requirement.HACCP, GMP, QMS.

5. PTE 313 Poultry Feed Milling and Manufacturing Technology 3(2+1)

Theory: Selection and layout of feed milling equipment.Selection and purchase of raw materials.Material flow in feed manufacturing- raw material handling and storage,raw material weighing,particle size reduction, premixing, mixing, pelleting and packaging.Particle size reduction technology: grinding; hammer mills, roller mills, pulverisers and disintegrators. Extruding, flaking, popping,micronizing. Mixing technology: paddle, ribbon and vertical mixtures.Pelleting technology – Cold pelleters, Conditioner pelleters,drying-cooling, Crumbling/sieving operations.Augers, bucket elevators and conveyers.Role of computer in modern feed mill operations.National and international regulations pertaining to feed manufacturers. Processing of oil seeds, soyabeans and fish meal. Production of mineral mixture.Rendering for production of animal protein meal.

Practical: Layout of feed mill and equipments. Operations, maintenance and safety of feed mill equipments grinders- hammer mills-roller mills - feed mixers- paddle, ribbon, vertical. Pelleting machines, augers, bucket elevators and conveyers - economics of feed manufacturing unit.HACCP, GMP and QMS protocols.Biosecurity in feed mills.

6. PEG 311 Instrumentation and Process Control 3(2+1)

Theory: Introduction, definition, recorders and monitors, panel boards. General characteristics of instruments, static and dynamic characteristics.Temperature and temp.scales, various types of thermometers – mercury-in-glass, bimetallic, pressure-spring thermometers, thermo couples, resistance thermometers and pyrometers. Pressure and pressure scales, manometers, pressure elements differential pressure. Liquid level measurement, different methods of liquid level measurement. Flow measurement, kinds of flow, rate of flow, total flow differential pressure meters, variable area meters. Transmission, pneumatic and electrical. Control elements, control actions, pneumatic and electrical control systems.

Practical: To study instrumentation symbols. Measurement of temperature by different thermometers.Measurement of pressure by 'U' tube manometer, (inclined tube manometer).Measurement of liquid level in the tank with the help of Bob and tape.Determination of relative humidity by wet and dry bulb thermometer.Measurement of velocity of fluid by using venturimeter/orifice meter/pilot tube.Measurement of RPM of an electric motor by Tachometer.Measurement of wind velocity by anemometer.Measurement of intensity of sun shine by sunshine recorders. Characteristic of valve, PI performance, T, P flow and level close leep control system.

7. PEG 312 CAD and CAM for Poultry Housing and Equipment 2 (0+2)

Practical: Drawing Standard-Code of practice for engineering drawing, BIS Specification- welding symbols, riveted joints, keys, fasteners. Introduction of Drafting-Drawing, editing, dimensioning, plotting commends, layering concepts, limits fits and tolerance. Preparation of 2- D Drawing-Orthographic view of standards machine components: brackets, V- blocks, stop block, screw threads and

threaded fasteners. Assembly Drawing- Plumber block bearing, Machine vice, Lathe tailstock, Piston and connecting rod.

8. PBM 311 POULTRY FARM MANAGEMENT AND FINANCIAL ANALYSIS 3(2+1)

Introduction to Farm Management - Farm management decision making process: Production, operational, strategic, administrative and marketing management decisions. - Basic concepts in farm management. Production, types of resources, choice indicators, costs, revenue, profit, total, average & marginal concepts. - Factor - Product relationship - Production function - definition & types - linear, quadratic & Cobb- Douglas functions - Impact of technology. Law of diminishing returns - 3 regions of production Cost concepts & interrelations - Optimum level of input use and optimum production - Economies of scale - external and internal economies and diseconomies - Returns to scale - Economics - Factor - Factor relationship - Principle of substitution - isoquant, isocline Expansion path, ridgeline and least cost combination of inputs -Product - Product relationship - types. Production possibility curve, iso revenue line and optimum combination of outputs -Equi-marginal returns and Opportunity cost - comparative advantage -Concepts of Risk and uncertainty - types of uncertainty in agriculture - Managerial decisions to reduce risks in production process - Management of Important Farm Resources - Farm Financial Analysis - Balance sheet - Income statement - Cash flow analysis - Ratio analysis - Farm Investment Analysis - Time comparison principles - Discounted and undiscounted measures. - Farm planning and control - Elements of planning, objectives, steps and formulation of farm plans - Farm level management information systems. - Farm Budgeting: partial, enterprise and complete budgeting.

Practical: Depreciation, Factor-Product Relationship, Factor-Factor Relationship, Product-Product Relationship, Cost Principle, Break Even Analysis, Economics of Poultry Enterprises, BCR, NPW and IRR Estimation, Balance Sheet, Income statement preparation.

SEMESTER VI

Sl.No	Course No	Course Title	Credit Hours
1.	***PTE 321***	Packaging of Poultry Products	3 (2+1)
2.	***PTE 322***	Food safety and techniques in food analysis	*3 (2+1)*
3.	***PEG 321***	Construction of Poultry House and its Equipment	*3 (2+1)*
4.	***PEG 322***	Construction of Poultry Hatchery, Feed Mill and its equipment	*3 (2+1)*
5.	***PEG 323***	Construction of Poultry Meat and Egg processing Plants & its Equipment	*3 (2+1)*
6.	***PBM 321***	Fundamentals of Agribusiness management	2 (2+0)
7.	***PBM 322***	Entrepreneurship Development and Communication Skill	2 (1+1)
8.	***PSD 321***	***Experiential learning***	***5 (0+5)***
		Total	**24 (13+11)**

1. PTE 321 Packaging of Poultry Products 3(2+1)

Theory: Development and current status of packaging industry- Introduction to Packaging - Definition- Principles of packaging – functions – Functional requirements of packaging, structural and performance characteristics of packing materials, design, testing and performance evaluation of packages – Package forms and materials – glass bottles – polyethylene – foil and laminates – cups – collapsible tubes and retortable pouches – new packaging materials including bio-degradable films. Methods of packaging – aseptic packaging – Modified Atmosphere Packaging – Controlled Atmosphere Packaging – vacuum packaging – intelligent packaging–Shrink packaging. Legal requirements of packing material and product information – Shelf life, microbial quality in package - Filling and packaging machinery– wrapping and cartoning – Form Fill – Seal – prepack- Packaging of Poultry products – Packaging of specific foods with its properties– shell eggs, egg powder and other value added eggproducts – labelling – Traceability – Attractive Packaging for Better Marketing - general functions of muscle food packaging – materials used in muscle food packaging –Multilayer package –User friendly design/Canning - fresh meat packaging – frozen meat packaging – processed meat packaging – chemicals interaction between

meat and packaging materials – Transport- containers and transport of eggs and meat by air, sea and road. Refrigerated and non-refrigerated transport methods Losses during packaging and transport.
Practical: Various packaging materials, testing their strength by different methods and quality – packaging of different poultry meat and meat products- egg and egg products – modified atmosphere packaging – vacuum packaging.

2. PTE 322 Food safety and techniques in food analysis 3 (2+1)
Theory: Naturally occurring toxins in food, Exo and endotoxins. Microbial toxins- Bacterial, Mold. Intrinsic toxic metabolites formed during processing and storage – Polyaromatic hydrocarbons (Acrylamide). Metal as a source of toxicity- conditions, causes and elimination. Veterinary drug residues – Implications to food safety - MRL's. Pesticide residues – Chlorinated / Non – chlorinated / Dioxins- MRL's . Non – permitted food additives. Microbial standards of processed and preserved foods.Introduction to safety aspects of GM feedstuffs, feed and food (Labelling and Non-labeling). - Concepts of food analysis; Laws and regulations of food analysis.Safety in laboratory, sampling techniques, Good Laboratory Practices.Introduction to chromatographic techniques in food analysis – TLC, HPTLC, GC, GCMS, LCMSMS and electrophoresis.Analysis of water for safety assessment.
Practical: National and international microbial quality standards.Estimation of bacterial, fungal toxins from feedstuffs, feed and food.Detection of adulterants in poultry feedstuffs and feed. Analysis of water for safety assessment, Physicochemical properties and microbial qualities of water. Introduction to chromatographic techniques in food analysis – TLC, Demonstration of HPTLC, GC, GCMS, LCMSMS (Estimation of mycotoxins or pesticide residues).

3.PEG 321 Construction of Poultry House and its Equipment 3(2+1)
Theory: Principles and construction of Poultry Farm houses – Excavations- Elements of construction - Loads on building components - Footings and foundations -Soil bearing -Site drainage - Foundation footings -Footing trenches -Types of foundation -Foundation materials -Foundation construction - Concrete foundations -Protective elements for foundations -Walls -Types of building wall -Floors -Solid or grade floors -Suspended or above-grade floors -Floor finishes –Roofs-Types of roof -Roofing for pitched roofs -Rainwater drainage from roofs -Doors -General characteristics of doors -Types of door - Door frames -Simple locks for barn doors –Windows -Stairs and ladders -Electrical installations - Electricity supply -Earthing and bonding -Distribution circuits-Electrical motors -Lightning conductors-Lighting: Photometric quantities-Day lighting- Design of Artificial Lighting-Measurements of Illumination – Lux units, Watts, Foot Candle etc. Building Services - Water Supply - Drainage – Ventilation.Construction of Deep litter house, caged layer house, Elevated Cage houses, Deep litter cum slat houses, Environmentally Controlled houses- cross, tunnel ventilated houses and Alternate housing systems- aviary-enriched cages. - Construction of Equipment: Equipment Used In Poultry Houses-Various types and models-manual, semi-automatic and automatic version- Cages, feeders, drinkers, brooders, heating system, nest boxes, debeaker, transport crates, fogger, sprinklers, vaccinators and incinerators, automatic feeders, silos, egg collection system- manure belt - ventilators. Environmentally controlled house equipment-climate control system-heaters-feeding system-drinking system- tunnel ventilation system- inlets and fans- evaporative cooling system.
Practical:
Preparation of layout - Site Plan -Building drawing in accordance with development and control rules satisfying orientation and functional requirements for the following: Poultry Houses – Deep litter, Cage and Elevated/Raised Platform Cage Houses, Environmentally Controlled Poultry Houses-Alternate housing systems- aviary-enriched cages.
Equipment: Operation and specifications of poultry house equipment and Environmentally controlled house equipment- tunnel ventilation system and evaporative cooling system. Erection and installation. Maintenance and trouble shooting of equipment. Electricity supply.

4. PEG 322 Construction of Poultry Hatchery, Feed Mill and its equipment 3(2+1)
Theory: Principles, Planning and construction of Hatchery and feed mill-legal aspects – functional aspects- plant layout-selecting plant site.- Materials used in construction of feed mill and hatchery equipment- Black Iron Sheet- Galvanized Iron-sheet metal fabrication - Poultry Hatchery Equipment and operation: egg handling equipment, Incubation equipment; Setters, hatchers still air- forced draft - contact incubator- single and multi-stage- Walk-in incubators- Tunnel incubator vertical fan incubators.

Hatchery automation equipment: hatchery tray washers, waste removal system, transfer machines, In ova vaccination equipment, candlers, chick box washers, chick and egg shell separators, hatcher tray destackers. Vaccinating /sexing /grading systems-carousels, in-line belts, automatic vaccinators, chick counting and boxing systems, spray vaccinating systems. Hatchery ventilation equipment; air conditioning vs evaporative cooling, incubator and hatcher exhaust systems. Hatchery monitoring instruments- thermostat-dry and wet bulb thermometer – digital thermometer, digital hygrometer, digital multimeter, Anemometer –Tachometer, hydro meter, hand held digital infra red thermometer - Feed manufacturing process, equipment and operation - storage systems- material handling systems- bucket elevators -screw conveyors, belt elevators–grinding equipment- hammer mills -screen design- roller mills-disintegrators- Pulverizer- Extruders-feed mixers-paddle mixer- ribbon mixer-vertical mixer. Pelleting equipment: Pelleters-cold- conditioning-cooler-crumbler-sifter-boiler-pellet die-storage silos. Different types of grind- mix plants. Equipment used for oilseed processing, preparation of mineral mixture, fish meal processing, soya bean processing.

Practical: Preparation of layout of poultry hatchery and feed mill – Operation and specifications of feed mill and hatchery equipments. Storage of ingredients-Angle of repose – bulk density- hammer mills – tip speed. Calculation of Hatchery ventilation - Hatchery instrumentation – calibration. Power transmission systems – bearing, Belts -V Belts, Flat belts, gears and chains. Erection and installation of hatchery and feed mill equipment/machinery- Maintenance and trouble shooting of equipments. Electricity supply.

5.PEG 323 Construction of Poultry Processing, Egg processing Plant and its Equipment 3(2+1)

Theory: Principles, Planning and construction of Poultry, egg processing, rendering and Effluent treatment plant-legal aspects – functional aspects- plant layout-selecting plant site-distribution of zones at the site-hygienic design of plant. - Materials for construction of food equipment –characteristics of suitable construction material-types of material and application-stainless steel- aluminium- nickel and Monel –plastics - Poultry processing equipment and further processing equipment: line system of dressing poultry-stunning, scalding, defeathering, evisceration-sectioning and portioning equipment, and packaging. Mincer, bowl chopper, slicer, tumbler, sausage stuffer, cooking vat, smoke house –forming machine- poultry packing equipment. Equipment used in small scale poultry processing. Tools used in manual evisceration. Boiler, refrigeration unit and freezers - Egg processing equipment: egg packing machines- line system of egg processing -egg loaders - egg graders –egg washers- mass candlers- egg breakers -liquid product handling – Filtration-Mixing-Blending-Cooling-storage equipment. Pasteurizers-plate, tube and batch-freezers-spray dryers. Ultra filtration- reverse osmosis equipment-shell dryer-shell centrifuge.

Practical: Preparation of layout of poultry processing plants, egg powder plant, rendering and effluent treatment plant – Operation and specifications of poultry and egg processing equipment-rendering, refrigeration, boiler, freezer and effluent treatment plant equipment. Erection and installation. Maintenance and trouble shooting of equipment. Electricity supply. Visit to poultry and egg processing plants.

6. PBM 321 Fundamentals of Agribusiness management 2 (2+0)

Theory: Agribusiness: Meaning, Definition, Structure of Agribusiness, (Input, Farm, Product Sectors). Importance of Agribusiness in the Indian Economy, Agricultural Policy. Agribusiness Management, Distinctive features, Importance of Good Management, Definitions of Management. Management Functions, Planning, Meaning, Definition, Types of Plans (Purpose or Mission, Goals or Objectives, Strategies, Polices, Procedures, rules, programmes, Budget) characteristics of sound plan, Steps in planning, Organisation, Staffing, Directing, Motivation, Ordering, Leading, Supervision, Communication, control. Capital Management.

Financial Management of Agribusiness: Importance of Financial Statements, Balance sheet, Profit and Loss Statement, Analysis of Financial statements. poultry Industries: Importance and Need, Classification of Industries, Types of Agro-based Industries, Institutional arrangement, Procedure to set up agro-based industries, Constraints in establishing poultry industries - Marketing Management: Meaning, Definitions, Marketing Mix, 4Ps of Marketing. Mix, Market segmentation, Methods of

Market, Product life cycle. Pricing policy, Meaning, pricing method. Prices at various stages of Marketing. Project, definitions, project cycle, Identification, Formulation, Appraisal, Implementation, Monitoring and evaluation, Appraisal and Evaluation techniques, NPW, BCR, IRR, N/K ratio, sensitivity analysis, characteristics of agricultural projects: preparation of project reports for various activities in agriculture and allied sectors: poultry - Study of input markets: chicks, feed, vaccines and medicines. Study of output: meat and egg. Study of product markets, retail trade commodity trading, and value added products. Study of financing institutions cooperatives commercial banks, RRBs, Agribusiness Finance Limited, NABARD; Preparations of projects, Feasibility reports; Project appraisal techniques; Case study of poultry industry.

7. PBM 322 Entrepreneurship Development and Communication Skill 2 (1+1)

Theory: Entrepreneurship – Concept, characteristics, Approaches, Theories, Need for enterprises development. Entrepreneurship, Significance of entrepreneurship in economic development - qualities of entrepreneur, entrepreneurship development programs and role of various institutions in developing entrepreneurship, life cycles of new business, environmental factors affecting success of a new business, reasons for the failure and visible problems for business, Developing effective business plans, Procedural steps in setting up of an industry - Agri – entrepreneurship – Concept, characteristics, Nature and importance for sustainable Livelihoods. Traits of entrepreneurs – Risk taking, Leadership, Decision making, Planning, Organising, Coordinating and Marketing, Types of Entrepreneurs. Stages of establishing enterprise – Identification of sound enterprise, steps to be considered in setting up an enterprise, feasibility report, product selection, risk and market analysis, legal requirements. Project Management and Appraisal – Market, Technical, Financial, Social Appraisal of Projects - Micro enterprises – Profitable Agri enterprises in India – Agro Processing, KVIC industries. Micro financing – meaning, Sources of Finance, Banks, Small scale industries development organizations. Marketing for enterprises – Concept, planning for marketing, target marketing, Competition, market survey and strategies, Product sales and promotion. Success and Failure stories for enterprises – Issues relating to success and failure of enterprises – Personal, Production, Finance, Social, Marketing.

Communication Skills: Structural and functional grammar; meaning and process of communication, verbal and non-verbal communication; listening and note taking, writing skills, oral presentation skills; field diary and lab record; indexing, footnote and bibliographic procedures. Reading and comprehension of general and technical articles, précis writing, summarizing, abstracting; individual and group presentations, impromptu presentation, public speaking; Group discussion. Organizing seminars and conferences.

Practical: Listening and note taking, writing skills, oral presentation skills; field diary and lab record; indexing, footnote and bibliographic procedures. Reading and comprehension of general and technical articles, précis writing, summarizing, abstracting; individual and group presentations.

8.PSD 321Experiential learning 5 (0+5)

SEMESTER VII

Sl.No	Course No	Course Title	Credit Hours
1.	***PSE 411***	Breeder flock management	3 (2+1)
2.	***PSE 412***	**Poultry Flock Health and Bio security**	**3 (2+1)**
3.	***PTE 411***	Poultry by-products and Waste Management	2 (1+1)
4.	***PBM 411***	Project planning and implementation	3 (2+1)
5.	***PBM 412***	International Trade Food Laws and Regulations	2 (2+0)
6.	***PSD 411***	***Experiential learning***	***9 (0+9)***
7.	***PSD 412****	***Study Tour***	***2 (0+2)***
		Total	**24 (9+ 15)**

**Study tour programme during the semester break (VII and VIII)*

1. PSE 411 Breeder flock management 3 (2+1)

Theory: Size and structure of breeding industry- Commercial strains of broiler and layer breeders-production standards. Objectives of poultry breeding for meat and egg production. Pure breed vs. present day hybrid used for meat and egg production. Systems of breeding – Strain/line development – Inbred lines. Segments of breeding operation-Performance testing - Mating systems – random, positive assortative mating, Inbreeding and out breeding.Methods of mating – flock, pen, shift, pair and artificial insemination. Pedigree hatching.Important economic traits of broiler and layer and their measurement.

Selection –natural and artificial.Selection differential, selection pressure and response to selection.Selection methods – Individual, family, combined, sib, progeny, tandem, independent culling level and index. Recurrent selection and recurrent reciprocal selection. Genomic selection - Layout and location of breeder farm -housing and equipment- Selection of breeder flock - Management of breeder flocks of broilers and layers(Purelines, Grandparents and parents)- in cages, slat, and deep litter houses- Hatching egg collection, selection and care - Feeding of breeders – Restricted feeding- Sex separate feeding – Breeder male management –grading and culling- Lighting. Factors influencing fertility, hatchability and quality of chicks. Vaccination and medication schedule.

Practical: Selection of site - Lay out for breeder farm - routine managemental practices in breeder farms - weighing of breeders-grading and culling –Semen collection, preservation and evaluation– Artificial Insemination techniques- Vaccination and medication schedule- blood testing- Microbial load assessment of breeder farm.

2. PSE 412 Poultry flock health and Bio-Security 3(2+1)

Theory: Locational, structural and operational Biosecurity in Poultry Farms-Complete or terminal house cleaning -Partial/concurrent house cleaning -insect control - rodent control – Fly Control - chemical disinfectants-physical agents-managing waste-controlling the sanitary quality of the water and feed-controlling the health quality of the animals –chick quality-managing the atmosphere.

Common diseases of Poultry –Viral, bacterial, fungal, parasitic, nutritional, metabolic and managemental- Immunity – Immune response – Etiology- Mode of transmission- signs of disease – Measures to prevent disease outbreak–Measures of control of disease- Surveillance and disease monitoring– Vaccination schedule of broilers, layers, breeders, turkeys and ducks. Preventive medication schedule - quarantine- Litter, carcass and hatchery waste disposal. OIE protocol: hygiene and disease security procedures in poultry breeding farm and hatchery.OIE protocol: prevention, detection and control of salmonella in poultry

Vaccines – live attenuated - Inactivated vaccines. Virus –serotypes and pathotypes -vaccination strategy-establishing a vaccination programme

Practical: Water quality standards and sanitation, Fumigation, Vaccination, Medication and Disinfection procedures. Poultry house environment microbiology – Feed and water microbiology. Sacrifice of poultry for disease control-Methods of disposal of litter and carcass. methods of administering the vaccines –mass vaccination –individual vaccination –sampling blood sample-tissues/ organs-swabs for isolating bacteria, fungi or virus-organ smears for histological study- samples for parasitic examination- transporting samples-serology to monitor vaccines –salmonella testing- rapid whole-blood plate test.

3. PTE 411 Poultry by-products and Waste Management 2(1+1)

Theory: By-products, waste and their utility – Design and layout of rendering plant –Various components of slaughter house waste/by-products - poultry by-product meal, feather meal, egg shells meal, Spent hen meat. Solid Waste management - Rendering of poultry waste / Poultry by-products –- carcass disposal-economic utilization of poultry Composition of poultry manure – poultry manure- deep litter and cage layer manure processing methods. Hatchery waste meal, by products – Liquid Waste Management Effluent treatment plant bio gas and power generation from waste - bio-hazards of poultry waste.

Practical: Composting of poultry manure - Utilization of poultry manure - rendering of inedible poultry products and utilization– Preparation and analysis of poultry offal meal, hatchery waste meal and egg shell meal - Carcass disposal.

4. PBM 411 PROJECT PLANNING AND IMPLEMENTATION 3 (2+1)

Theory

UNIT I

An introduction to project management: An overview of project management. The differences between Product, Project and Program management, Industrial, R&D and social security projects.

UNIT II

Successful Initialization and Project Planning: Defining the project scope. Establishing the project scope and defining project deliverables. Defining and Sequencing of Project Deliverables. Project scheduling techniques, Market research and forecasting. GMP and HACCP.

UNIT III

Resource Planning: Determining resource requirements and acquiring those resources, Source of finance, Debt-equity ratio, Debt service coverage ratio, ROI, RONW, Process of soliciting and selecting vendors for material and services for the project. Cost Management. Establishing the project budget and analyzing budget variances, techno-economic feasibility analysis.

UNIT IV

Execution of the Project Plan and Evaluating Project Progress: Execution of the project plan and activities required to create the project team, monitor progress against the plan, and keep the project on track. Capacity utilization, Breakeven point.

UNIT V

Risk Identification and Analysis: Identify risky events, measure the element of risk, and develop responses to high-risk events. Establishing the Project Management Team Identifying project team members, and structuring a successful project team. Keeping the Project on Track The quality process, Project's quality standards and how performance to those standards will be measured. Managing Project Change Handling formal and informal change, how to identify and evaluate change, and incorporate change into the project plan.

Practical

Preparation of a model detailed project report for poultry units: commercial and breeder farms, hatchery, feed mills, meat and egg processing plants and its power point presentation, Case studies of various poultry products, projections planning for sales target achievements, Risk analysis for financial and technical feasibilities of the projects, Project appraisal methods as applied to selected projects**.**

5. PBM 412 International Trade Food Laws and Regulations 2 (2+0)

Theory:

International trade; Basics, classical theory, Theory of absolute advantage, theory of comparative advantage, modern theory, free trade – protection, methods of protection quotas, bounties, exchange control, devaluation, Commercial treaties, terms of trade, balance of payments, exim policy, foreign exchange, mechanics of foreign exchange. GATT, WTO. World Trade Agreements Related with poultry Business, Role of OIE, FAO, ISO Codex Alimentarius norms, HACCP Export Trends and Prospects of poultry Products In India. TRIPS, TRIMS quotas, anti-dumping duties, quantitative and qualitative restrictions, tariff and non-tariff measures, trade liberalization, subsidies, subsidies; green and red boxes, issues for negotiations in future in WTO; CDMs and carbon trade. World Consumption of poultry meat and egg; Patterns and Types of poultry meat and egg across the Globe. Ethnic food habits of different regions. Govt. institutions related to international food trade; APEDA, MOFPI, EIC etc. Management of export import organization, Registration, documentation, export import logistics, Cases Studies. FSSAI-Food laws and regulations pertaining to poultry meat and egg, Quality assurance, Total Quality Management; GMP/GHP; GLP, GAP; Sanitary and hygienic practices; HACCP; Quality manuals, documentation and audits; Indian & International quality systems and standards like ISO and Food Codex; Export import policy; export documentation; Laboratory quality procedures and assessment of laboratory performance; Applications in different poultry meat and egg processing industries; Food adulteration and food safety. IPR and Patent.

6. PSD 411 Experiential learning 14 (0+14)

7. PSD 412 Study Tour 2 (0+2)

SEMESTER VIII

Sl.No	Course No	Course Title	Credit Hours
1.	**PSD 421**	**Industrial / In Plant Training (Internship)**	**20 (0+20)**
2.	**PSD 422**	Seminar- I	1 (0+1)
3.	**PSD 423**	Seminar - II	1 (0+1)
4.	**PSD 424**	Research Project	3 (0+3)
		Total	**25 (0+ 25)**

Annexure II

TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERISITY

College of Poultry Production and Management, Hosur – 635 110

Time table for B.Tech.(PT) VII Semester 2018-19 Batch

Date of Commencement: 17.11.2021

Day/Hrs	9.15-10.15	10.15 – 11.15	11.15-12.15	12.15-1.15	1.15-2.15	2.15 – 3.15	3.15 – 4.15	4.15 – 5.15
Monday	PSD 411 (P)		PSD 411 (P)		LUNCH BREAK	PBM 411 (T)	PSD 411 (P)	
Tuesday	PSD 411 (P)		PSE 411 (P)			PSE 412 (T)	PSD 411 (P)	
Wednesday	PSD 411 (P)		PSE 412 (T)	PSE 411 (T)		PBM 412 (T)	PTE 411 (P)	
Thursday	PSD 411 (P)		PBM 412 (T)	PSE 411 (T)		PTE 411 (T)	PBM 411 (P)	
Friday	PSD 411 (P)		PSE 412 (P)			PBM 411 (T)	Ward counselling	Library
Saturday	PSD 411 (P)		NSS/Library			NSS/Library		

Course Details

S.No.	Course No.	Course Title	Credit hours	Course teachers
1	PSE 411	Breeder flock management	3 (2+1)	Dr. S. Prakash
2	PSE 412	Poultry Flock Health and Bio security	3 (2+1)	Dr. S. Prakash
3	PTE 411	Poultry by-products and Waste Management	2 (1+1)	Dr. K.Rajendra Kumar
4	PBM 411	Project planning and implementation	3 (2+1)	Dr.J. Ramesh
5	PBM 412	International Trade Food Laws and Regulations	2 (2+0)	Dr. S.Santhosh Kumar
6	PSD 411	Experiential learning	9 (0+9)	**Separately attached
7	PSD 412	Study Tour	2 (0+2)	Dr. K. Rajendra Kumar

Approved / ~~Not Approved~~

Assistant Professor,
Academic Co-ordinator, (2018-19 Batch)
Department of Poultry Technology
CPPM, Hosur – 635 110

Dean,
College of Poultry Production and management, Hosur-635110

TAMIL NADU VETERINARY AND ANIMALSCIENCESUNIVERSITY
College of Poultry Production and Management, Hosur
Time Table for B.Tech (PT) - III year V Semester - 2019-20 Batch
Date of Registration :17.11.2021 Date of Commencement: 18.11.2021 Date of Closure (Tentative): 17.02.2022

Days / Hrs	9.30 - 10.30	10.30 - 11.30	11.30 - 12.30	LUNCH	1.30 - 2.30	2.30 - 3.30	3.30 - 4.30	4.30 - 5.30
Monday	Library	PSE 311	PEG 311		PTE 311	PBM 311	PSE 311	NSS/Library
Tuesday	PTE 311(P)		PTE 312		PSE 312(P)		PEG 312(P)	
Wednesday	PSE 312	PEG 311(P)			PBM 311(P)		PTE 313(P)	
Thursday	PSE 311(P)		PTE 312		PTE 312(P)		PEG 312(P)	
Friday	PTE 313	PEG 311	PBM 311		PSE 312	Library	PTE 313	NSS/Library
Saturday	NSS/ Library				NSS/ Library			

LIST OF COURSE TEACHERS

Sl. No	Course No	Course Title	Credit Hours	Course Teachers
1.	PSE 311	Commercial Broiler Production	3 (2+1)	Dr.G.Raj Manohar, Ph.D., Associate Professor and Head, CPPM, Hosur
2.	PSE 312	Diversified Poultry and Ratite Management	3 (2+1)	Dr. S.T.Selvan,Ph.D., Dean, CPPM, Hosur
3.	PTE 311	Quality Control of Poultry Meat and Egg Products	2 (1+1)	Dr. P.Selvan,Ph.D., Assistant Professor, CPPM, Hosur
4.	PTE 312	Hatchery Technology	3 (2+1)	Dr. P.Shamsudeen, Ph.D., Professor and Head, CPPM, Hosur
5.	PTE 313	Poultry Feed Milling and Manufacturing Technology	3 (2+1)	Dr.C.Senthamil Pandian, Assistant Professor, CPPM, Hosur
6.	PEG 311	Instrumentation and Process Control	3 (2+1)	Er.N. Hema,M.E., CPPM, Hosur
7.	PEG 312	CAD and CAM for Poultry Housing and Equipment	2 (0+2)	Er.G.Velayudham,M.E.,Assistant Professor, CPPM, Hosur
8.	PBM 311	Poultry Farm Management and Financial Analysis	3 (2+1)	Dr.S.Bakyaraj,M.V.Sc., Assistant Professor ,CPPM, Hosur

17/11/21

Er. G. Velayudham,
Assistant Professor
Academic Co-ordinator, (2019-20 Batch)
Department of Poultry Engineering
CPPM, Hosur – 635 110.

17/11/2021

Dean
College of Poultry Production
and Management, Hosur 635 110.

TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY

College of Poultry Production and Management, Mathigiri, Hosur.

TIME TABLE for B. Tech. (Poultry Technology) **II Semester** of I Year for **2020 – 2021 Batch**

Date of Registration: **20.10.2021** Date of Commencement: **21.10.2021**

Days / Hrs	9.30 – 10.30	10.30 – 11.30	11.30 – 12.30	LUNCH 12.30 – 1.30 pm	1.30–2.30	2.30 – 3.30	3.30 – 4.30	4.30 – 5.30
Mon	PEG 122 (T)	PEG 124 (T)	PEG 123 (T		PEG 121 (T)	PTE 121 (T)	Library / NSS 121	
Tue	PSE 122 (T)	PSE 121 (T)	PEG 124 (T)		PEG 121 (T)	PSE 123 (T)	PEG 122 (P)	
Wed	PEG 123 (T)	PSE 122 (P)			PSE 123 (T)	PSE 121 (T)	PTE 121 (P))	
Thu	PTE 121 (T)	PSE 123 (P)			PSE 121 (P)		PEG 123 (P)	
Fri	PSE 123 (T)	PEG 124 (P)			PSE 122 (T)	PEG 121 (P)		Ward Counseling
Sat	-	Library / NSS 121			-	-	-	-

Sl. No.	Course No.	Course Title	Credit Hours	Course Teacher
1	PSE 121	Fundamentals of Microbiology	3(2+1)	Dr. Santhosh Kumar, S. Assistant Professor
2	PSE 122	Introduction to Poultry Management	3(2+1)	Dr. Bakyaraj, S., Assistant Professor
3	PSE 123	Poultry Housing and Environment	4 (3+1)	Dr. Ramesh, J., Professor
4	PTE 121	Environmental Studies & Disaster Management	3(2+1)	Er. Sangeetha, R., Lecture
5	PEG 121	IT Application in Poultry Industry	3(2+1)	Er. Hema, N., Lecturer
6	PEG 122	Engineering Mathematics – II	2(1+1)	Er. Hema, N., Lecturer
7	PEG 123	Materials and Structural Engineering	3(2+1)	Er. Sangeetha, R., Lecturer
8	PEG 124	Thermodynamics	3(2+1)	Er. Velayudham, G. Assistant Professor
9	NSS 121	National Service Scheme	1 (0+1)*	Dr. Senthamil Pandian, C., Assistant Professor
		Total Instructional Credits	25(16+9)	• Non Credit Course

20/10/2021

Dr. J. Ramesh, Ph.D.,
Acdemic Coordinator and Professor and Head,
Department of Poultry Business Management,
College of Poultry Production and Management,
Hosur

20/10/2021

Dean,
Department of Poultry Business Management,
College of Poultry Production and Management,
Hosur

Annexure III

தமிழ்நாடு तमिलनाडु TAMILNADU

CC 579606

T Parvathi

T. PARVATHI
L.V.S. TM. 10757/A/4
No. 81, MULLA STREET
CHENNAI - 600 079.

Register Tanuvas
chennai-51

19-3-2021

MEMORANDUM OF UNDERSTANDING (MOU)

BETWEEN

TAMILNADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY, Chennai,

BSA CRESCENT INSTITUTE OF SCIENCE & TECHNOLOGY, Chennai

(Deemed to be University u/s 3 of the UGC Act, 1956)

&

CRESCENT INNOVATION AND INCUBATION COUNCIL, Chennai

(A Section-8 company under Companies Act 2013)

This **Memorandum of Understanding** (hereinafter called as the 'MOU') is entered into on this the 27th March 2021 **BETWEEN Tamil Nadu Veterinary and Animal Sciences University (TANUVAS)** located at Madhavaram Milk Colony, Chennai, **the First Party** represented herein by its **Registrar** (hereinafter referred as **'First Party'**, the institution which expression, unless excluded by or repugnant to the subject or context shall include its successors – in-office, administrators and assigns).

AND

B.S. Abdur Rahman Crescent Institute of Science and Technology (BSACIST) (Deemed to be University u/s 3 of the UGC Act, 1956) located at GST Road, Seethakathi Estate, Chennai 600048, **the Second Party** represented herein by its Registrar (hereinafter referred as **'Second Party'**, the institution which expression, unless excluded by or repugnant to the subject or context shall include its successors – in-office, administrators and assigns).

AND

Crescent Innovation and Incubation Council (CIIC) (a Section-8 not-for profit company registered under Indian Companies Act 2013 and recognized Bionest Bio-Incubator by BIRAC, Department of Biotechnology, Govt of India, located at GST Road, Seethakathi Estate, Chennai 600048, the Second Party, and represented herein by its **CEO and Director** (hereinafter referred to as "**Third Party**", company which expression, unless excluded by or repugnant to the subject or context shall include its successors – in-office, administrators andassigns).

(First Party, Second Party and Third Party are hereinafter jointly referred to as 'Parties' and individually as 'Party').

WHEREAS, The Tamil Nadu Veterinary and Animal Sciences University (TANUVAS), Chennai is an autonomous Educational, Research and Development Institution established under the provisions of Tamil Nadu Act No. 42 of 1989 with its headquarters at Chennai. The Tamil Nadu Veterinary and Animal Sciences University hereinafter called the TANUVAS is a leading University, a centre for studies in many disciplines of veterinary and animal sciences and an institution of higher learning which has been mandated to provide high quality training and education in the fields of animal sciences. TANUVAS is an educational institution which has content and instructional expertise in a wide range of veterinary disciplines and subject matter.

TANUVAS has seven constituent colleges at Madras Veterinary College, Chennai; Veterinary College and Research Institutes at Namakkal, Orathanadu, Tirunelveli and Salem; College of Food and Dairy Technology, Koduveli, Chennai and College of Poultry Production and Management at Hosur.

The College of Food and Dairy Technology (CFDT), a constituent unit of Tamil Nadu Veterinary and Animal Sciences University (TANUVAS), Chennai incepted in the year 1991 is currently engaged in offering the undergraduate programmes in Food Technology and Dairy Technology; PG programmes in Food Technology, Dairy Technology and Dairy Chemistry and Ph.D. in Food Technology.

This college has been duly recognized by All India Council for Technical Education (AICTE), New Delhi for offering the degree programmes in B.Tech / M.Tech (Food Technology) and also accredited by Indian Council of Agricultural Research (ICAR), New Delhi for offering the Under graduate degrees.

The facilities such as Dairy Food Quality Control Laboratory, Dairy Starter Culture Collection Centre, Model Dairy Plant, Meat, Poultry and Fish Processing Laboratory, Fruit and Vegetable Processing Laboratory, Milk and Milk Products Processing Laboratory, Chocolate Processing Laboratory, Food Business Incubation Centre, ICAR - Experiential learning Centre and Food and Dairy Consultancy Service Cell are available at CFDT for teaching and research purposes.

Technology business incubation encompasses well equipped food processing plants for pilot and commercial scale production of Pasteurized milk, Ice cream, Fruit & Vegetable products, Shelf stable food products and Meat and Egg products.

WHEREAS, BSACIST is a renowned Quality Leadership Institution located at the greenest spot of Chennai near Tambaram. Through the long history of 37 years of excellence, the Institution has offered access to a wide range of academic opportunities. With 49 programmes, grouped under 12 different Schools, 29 Undergraduate programmes, 20 Postgraduate programmes, and Ph.D. (in all the departments), this institution is a rising stalwart in higher education with promising Quality, Security and Placement.

WHEREAS, CIIC an incubator in India established in 2019 as a Section-8 not-for profit company under the ambit of BSA Crescent Institute of Science and Technology and acts as a one stop shop-Technology Business Incubator (TBI) for start-ups in areas of Life Sciences, Industry 4.0, 5G, Fintech, Mobility and transportation. CIIC has incubated 71 start-ups from student, faculty, alumni and external start-ups and has setup 14 Centres of Excellence.

The objective of CIIC is primarily to promote partnership with new technology entrepreneurs and start-up companies. CIIC provides incubation services to different start-ups in the Knowledge and Technology based area and aims at creating a complete and comprehensive ecosystem to promote and nurture innovative enterprises. CIIC has profoundly implemented and follows the National Innovation Start-up Policy put forth by the Ministry of Education and has obtained the BAND A (6^{th}-25^{th}) rank in ARIIA (ATAL Ranking of Institutions on Innovation Achievements) in the category of "University & Deemed to be University" (Private/Self-financed) and has received 5-STAR ranking in Institutions Innovation Council (IIC).

A. Parties believe that collaboration and co-operation between themselves will promote more effective use of each of their resources, and provide each of them with enhanced opportunities.

B. The Parties intent to cooperate and focus their efforts on cooperation within area of Skill Based Training, Technology collaboration, start-ups mentoring and Education and Research including promote interaction and collaboration between faculty, staff and students of both the parties through visits and exchange programmes, carry out joint academic and research programmes, , on a reciprocal basis.

C. Both Parties, being legal entities in themselves desire to sign this MOU for advancing their mutual interest;

NOW THEREFORE, IN CONSIDERATION OF THE MUTUAL PROMISES SET FORTH IN THIS MOU, THE PARTIES HERETO AGREE AS FOLLOWS:

CLAUSE 1: CO-OPERATION

1.1 Both Parties are united by common interests and objectives, and they shall establish channels of communication and co-operation that will promote and advance their respective operations within the Institution and its related wings. The Parties shall keep each other informed of potential opportunities and shall share all information that may be relevant to secure additional opportunities for one another.

1.2 First Party and Second Party co-operation will facilitate effective utilization of facilities between the parties providing significant contributions to industries and other institutes in developing suitable teaching / training systems, keeping in mind the market demand.

1.3 The general terms of co-operation shall be governed by this MoU. The Parties shall cooperate with each other and shall, as promptly as is reasonably practical, enter into all relevant agreements, deeds and documents (the 'Definitive Documents') as may be required to give effect to the actions contemplated in terms of this MoU. The term of Definitive Documents shall be mutually decided between the Parties. Along with the Definitive Documents, this MoU shall represent the entire understanding as to the subject matter hereof and shall supersede any prior understanding between the Parties on the subject matter hereof.

CLAUSE 2: SCOPE OF THE MoU

2.1 **Faculty & student exchange programme:** The two parties will explore opportunities for interaction among members of faculty and student fraternity at the respective institutions for appropriate and identified areas of academic and research importance.

2.2 **Coordinated graduate degree programmes:** Joint PhD / Masters / Diploma program may be explored and formulated, possibly in association with other reputed academic, research or industrial organizations. A detailed document related to such programmes, will be required and approved by the competent authorities of both the institutions, before implementation.

2.3 **Joint Research Projects:** The two parties will explore opportunities of undertaking joint research projects and may seek research funding from external funding agencies. Each such research proposal shall require approval of the respective institutions. Director of Research, TANUVAS, Registrar, BSACIST and CEO & Director -CIIC at higher level have to jointly decide the research areas for collaboration.

2.4 **Joint academic activities and events:** The TANUVAS and CIIC may formulate joint academic activities such as short course, seminars, workshops or conferences based on mutual interests and available expertise in both the institutions. They may also share and carry out joint research in technology for distance and computer-based learning.

2.5 Support of Triple 'M' to CFDT entrepreneurs ie business and financial Mentoring (Mentor), identification the funds for startups (Money) and support in Go-To-Market Strategy (Marketplace) will be provided through Centre for Research in Precision Agriculture and Rural Technologies (CRPART), a Centre established at CIIC.

2.6 CFDT, TANUAS will support CIIC startups (rural, agritech, food tech etc.) in business and technical mentoring and networking. If there is any financial consideration, it will be case by case mutually considered.

2.7 There is no financial commitment on the part of both parties to take up any program mentioned in the MoU. If there is any financial consideration, it will be dealt separately.

CLAUSE 3: INTELLECTUAL PROPERTY

3.1 Nothing contained in this MOU shall, by express grant, implication, create in either Party any right, title, interest, or license in or to the intellectual property (including but not limited to know-how, inventions, patents, copy rights and designs) of the other Party.

CLAUSE 4: TENURE AND TERMINATION

4.1 This MoU will take effect from the date it is signed by representatives of the two institutions. It will remain valid for a period of three years and may be continued thereafter after suitable review and agreement by both the institutes.

4.2 Either institution may terminate the MoU by giving a written notice to the other, three months in advance. Once terminated, neither TANUVAS nor CIIC will be responsible for any losses, financial or otherwise, which the other institution may suffer. However, TANUVAS and CIIC will ensure that all activities in progress are allowed to complete successfully.

CLAUSE 5: RELATIONSHIP BETWEEN THE PARTIES

5.1 It is expressly agreed that **First Party** and Second **Party** are acting under this MoU as independent contractors, and the relationship established under this MoU shall not be construed as a partnership. Neither Party is authorized to use the other Party's name in any way, to make any representations or create any obligation or liability, expressed or implied, on behalf of the other Party, without the prior written consent of the other Party. Neither Party shall have, nor represent itself as having, any authority under the terms of this MoU to make agreements of any kind in the name of or binding upon the other Party, to pledge the other Party's credit, or to extend credit on behalf of the other Party.

Any divergence or difference derived from the interpretation or application of the MoU shall be resolved between the Parties by mutual negotiations in the first instance failing which the same shall be resolved by arbitration between the parties as per the Arbitration Act, 1996. The place of the arbitration shall be at District Head Quarters of the First Party. This undertaking is to be construed in accordance with Indian Law with exclusive jurisdiction in the Courts of **Chennai.**

AGREED:

For **TANUVAS**	**For BSACIST**	**For CIIC**
Registrar **Tamil Nadu Veterinary and Animal Sciences University** Madhavaram Milk Colony, Chennai – 600 051 Contact Details: +91-44-25551584 E-mails: registrar@tanuvas.org.in Web: https://tanuvas.ac.in	**Registrar** **BSA Crescent Institute of Science & Technology** GST Road, Seethakathi Estate, Chennai 600048 Contact Details: 04422751485-486 E-mails: registrar@crescent.education Web: https://crescent.education/	**CEO & Director** **Crescent Innovation and Incubation Council** GST Road, Seethakathi Estate, Chennai 600048 Contact Details: 04422751485-486 E-mails: ceociic@crescent.education Web: www.ciic.ventures
Witness 1: DIRECTOR OF RESEARCH Tamil Nadu Veterinary and Animal Sciences University Chennai-600 051.	Witness 1:	Witness 1: CRESCENT INNOVATION & INCUBATION COUNCIL CHENNAI 600 048
Witness 2: Dr. V. APPA RAO, MVSc.,Ph.D., Dean Faculty of Food ... ..., College of Food and Dairy ...inology, Koduveli, Alamathi-Post, Chennai-600 052	Witness 2:	Witness 2: CRESCENT INNOVATION & INCUBATION COUNCIL CHENNAI 600 048

Definitive Document

The following are the terms and agreement under MoU.

Article – I

- Both Institutes share facilities (laboratories, library and processing units) for cooperative research.
- Undertake funded / student research projects based on food and feed related problems in areas of common interest.

Article – II

- Benefits of research (improved technology, materials, machinery, process, design, techniques) arising out of cooperative effort may shallbe used by either or both parties with due recognition of each other's contribution.
- Results from the collaborative research may be used by both the parties with due recognition of each other's contribution.
- Research findings as a result of collaborative research will be published in public interest with joint authorship and both parties will be entirely responsible for conclusion and interpretation reported.

Article – III

The detailed terms and conditions that guide each activity identified in this MoU will be separately determined and agreed upon by both institutions.

First Party

Registrar
TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY
MADHAVARAM MILK COLONY, CHENNAI-600 051

Second Party

Third Party

M. PARVEZ ALAM CEO
Crescent
Innovation & Incubation Council
Vandalur, Chennai-600 048.

தமிழ்நாடு तमिलनाडु TAMILNADU

13/1/21 Registrar TANUVAS

C. Balasubramanian CC 332489

C.BALASUBRAMANIAN
S.V.L. No.3006/2/95
PERIAMET, CHENNAI - 600 003
Cell : 9840347510, 7871991530

MEMORANDUM OF UNDERSTANDING (MoU)

between

Tamil Nadu Veterinary and Animal Sciences University, Chennai

and

Mecton Organic Farms Pvt Ltd

The Memorandum of Understanding executed on this day 5th April 2021 between Tamil Nadu Veterinary and Animal Sciences University, Madhavaram Milk Colony, Chennai – 600 051 and Mecton Organic Farms Pvt Ltd.

Tamil Nadu Veterinary and Animal Sciences University, Madhavaram Milk Colony, Chennai– 600 051 represented by its Registrar, duly authorized to enter into and sign the Memorandum of Understanding on behalf of Tamil Nadu Veterinary and Animal Sciences University, Chennai– 600 051 (herein after called as TANUVAS), the One Part and

Mecton Organic Farms Pvt Ltd, a registered company with registration No U01100TN2020PTC135877 having its registered office at 280, Ring Road, Housing Sector, Madhavaram, Chennai 600 060 represented by its Managing Director, Mr. Syed Ibrahim Yacoob duly authorized to sign the Memorandum of Understanding on behalf of Mecton Organic Farms Pvt Ltd– 600 060, the other part.

Preamble

Whereas Tamil Nadu Veterinary and Animal Sciences University is a pioneer in Veterinary Science and an autonomous institution governed by its Board of Management which regulates the policies of the University in accordance with the provision, of act and statutes. The Government of Tamil Nadu established Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) on 20th September 1989 at Madhavaram Milk Colony, Chennai – 600 051, India through the Tamil Nadu Veterinary and Animal Sciences University Act, 1989 (Tamil Nadu Act 42 of 1989).

The Memorandum of Understanding (MoU) between Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) and Mecton Organic Farms Pvt Ltd sets forth the agreement of the parties with respect to mutually beneficial initiative to strengthen the chevon handling systems and facilitate knowledge partnership for establishment of chevon processing unit, hygienic processing and better marketing and for academic purposes.

The primary objective of this MoU is to

- Provide technical support to Mecton Organic Farms Pvt Ltd for establishment of infrastructure facilities for processing and value addition of chevon.
- Provide training to the chevon processors and exposure of students for hygienic chevon handling.
- Utilising facilities at Mecton Organic Farms Pvt Ltd for training of students and faculty members of Tamil Nadu Veterinary and Animal Sciences University.

Since the main aim of the MoU is to build a platform to facilitate training and knowledge sharing with academia for knowledge sharing.

Expected support from TANUVAS

1. Provide technical support for establishment of infrastructure facilities for slaughter of goats, processing and marketing of chevon with the consultation fee fixed by the University.
2. Provide help to prepare project report for submission to external funding agencies with the consultation fee fixed by the University.
3. Provide orientation / refresher training for chevon processors in Tamil Nadu on payment basis.

Expectations from Mecton Organic Farms Pvt Ltd

1. Demonstration and hands-on training for students, trainees and staff of TANUVAS.
2. Collection of samples and conduct of research by students and staff of Tamil Nadu Veterinary and Animal Sciences University.
3. Mecton Organic Farms Pvt Ltd in joint Collaboration with Tamil Nadu Veterinary and Animal Sciences University will support in conduct of seminars / Conferences / Workshop / Guest lectures during the MoU period.
4. Technologies developed by the department will be transferred on cost basis.
5. Consulting charges if any fixed by the University will be levied as applicable.

Duration

This Memorandum of Understanding shall be valid for two years from the date of signing of the same and the management can renew for a further period with mutual consent.

Termination

This Memorandum of Understanding may be terminated by either party by the provision of written notice of termination by not less than six months prior to the desired termination date.

The document is a statement of understanding and is not intended to create any binding legal and financial obligations on either party. In the event of any problems which arise while this reference is in effect, both TANUVAS and Mecton Organic Farms Pvt Ltd agree to refrain from unilateral action and to consult each other and negotiate mutually agreeable decisions.

In witness whereof the parties hereto have executed this MoU or caused it to be executed in their names and on their behalf by their duly authorized representatives on the date set forth.

for Tamil Nadu Veterinary And Animal Sciences University (TANUVAS)	**for Mecton Organic Farms Pvt Ltd**
Dr. P. Tensingh Gnanaraj Registrar Tamil Nadu Veterinary and Animal Sciences University, Madhavaram Milk Colony, Chennai - 600 051	**Mr. Syed Ibrahim Yacoob** Managing Director Mecton Organic Farms Pvt Limited 280, Ring Road, Housing Sector Madhavaram, Chennai 600 060
In the presence of witnesses: **Witness 1:** **Dr. Cecilia Joseph** Director of Research Tamil Nadu Veterinary and Animal Sciences University, Madhavaram Milk Colony, Chennai - 600 051	In the presence of witnesses: **Witness 1:** **Ms. V. Kavitha** Chief Operation Officer 280, Ring Road, Housing Sector Madhavaram, Chennai-600 060
Witness 2: **Dr. R. Narendra Babu** Professor and Head Department of Livestock Products Technology (Meat Science), Madras Veterinary College, Chennai - 600 007	**Witness 2:** **Mr. V. Venkatesh** Administrative Officer 280, Ring Road, Housing Sector Madhavaram, Chennai-600 0601

தமிழ்நாடு तमिलनाडु TAMILNADU

13/1/21 Registrar TANUVAS

CC 332491

C.BALASUBRAMANIAN
S.V.L. No.3006/P/2005
PERAMET, CHENNAI - 600 002.
Cell : 9840340510, 7871991990

MEMORANDUM OF UNDERSTANDING (MoU)

between

Tamil Nadu Veterinary and Animal Sciences University, Chennai

and

Thai Thirunaal Agro Foods Pvt Ltd

The Memorandum of Understanding executed on this day 5th April 2021 between Tamil Nadu Veterinary and Animal Sciences University, Madhavaram Milk Colony, Chennai – 600 051 and Thai Thirunaal Agro Foods Pvt Ltd .

Tamil Nadu Veterinary and Animal Sciences University, Madhavaram Milk Colony, Chennai– 600 051 represented by its Registrar, duly authorized to enter into and sign the Memorandum of Understanding on behalf of Tamil Nadu Veterinary and Animal Sciences University, Chennai– 600 051 (herein after called as TANUVAS), the One Part and

Thai Thirunaal Agro Foods Pvt Ltd, a registered company with registration No U01100TZ2020PTC034371 having its registered office at Door No. 5/108, Periyakutti Thottam, Vellanaipatti, Coimbatore – 641 048 represented by its Managing Director Mr. Shanmuga Sundara Raj duly authorized to sign the Memorandum of Understanding on behalf of Thai Thirunaal Agro Foods Pvt Ltd – 641 048, the other part.

Preamble

Whereas Tamil Nadu Veterinary and Animal Sciences University is a pioneer in Veterinary Science and an autonomous institution governed by its Board of Management which regulates the policies of the University in accordance with the provision, of act and statutes. The Government of Tamil Nadu established Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) on 20th September 1989 at Madhavaram Milk Colony, Chennai – 600 051, India through the Tamil Nadu Veterinary and Animal Sciences University Act, 1989 (Tamil Nadu Act 42 of 1989).

The Memorandum of Understanding (MoU) between Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) and Thai Thirunaal Agro Foods Pvt Ltd sets forth the agreement of the parties with respect to mutually beneficial initiative to strengthen the mutton handling systems and facilitate knowledge partnership for establishment of mutton processing unit, hygienic processing and better marketing and for academic purposes.

The primary objective of this MoU is to

- Provide technical support to Thai Thirunaal Agro Foods Pvt Ltd for establishment of infrastructure facilities for processing and value addition of mutton.
- Provide training to the mutton processors and exposure of students for hygienic mutton handling.
- Utilising facilities at Thai Thirunaal Agro Foods Pvt Ltd for training of students and faculty members of Tamil Nadu Veterinary and Animal Sciences University.

Since the main aim of the MoU is to build a platform to facilitate training and knowledge sharing with academia for knowledge sharing.

Expected support from TANUVAS

1. Provide technical support for establishment of infrastructure facilities for slaughter of sheep, processing and marketing of mutton with the consultation fee fixed by the University.
2. Provide help to prepare project report for submission to external funding agencies with the consultation fee fixed by the University.
3. Provide orientation / refresher training for mutton processors in Tamil Nadu on payment basis.

Expectations from Thai Thirunaal Agro Foods Pvt Ltd

1. Demonstration and hands-on training for students, trainees and staff of TANUVAS.
2. Collection of samples and conduct of research by students and staff of Tamil Nadu Veterinary and Animal Sciences University.
3. Thai Thirunaal Agro Foods Pvt Ltd in joint Collaboration with Tamil Nadu Veterinary and Animal Sciences University will support in conduct of Seminars / Conferences / Workshop / Guest lectures during the MoU period.
4. Technologies developed by the department will be transferred on cost basis.
5. Consulting charges if any fixed by the University will be levied as applicable.

Duration

This Memorandum of Understanding shall be valid for two years from the date of signing of the same and the management can renew for a further period with mutual consent.

Termination

This Memorandum of Understanding may be terminated by either party by the provision of written notice of termination by not less than six months prior to the desired termination date.

The document is a statement of understanding and is not intended to create any binding legal and financial obligations on either party. In the event of any problems which arise while this reference is in effect, both TANUVAS and Thai Thirunaal Agro Foods Pvt Ltd agree to refrain from unilateral action and to consult each other and negotiate mutually agreeable decisions.

In witness whereof the parties hereto have executed this MoU or caused it to be executed in their names and on their behalf by their duly authorized representatives on the date set forth.

for Tamil Nadu Veterinary And Animal Sciences University (TANUVAS)	for Thai Thirunaal Agro Foods Pvt Ltd
Dr. P. Tensingh Gnanaraj Registrar Tamil Nadu Veterinary and Animal Sciences University, Madhavaram Milk Colony, Chennai - 600 051	**Mr. Shanmuga Sundara Raj** Managing Director Thai Thirunaal Agro Foods Pvt Limited Door No. 5/108, Periyakutti Thottam, Vellanaipatti, Coimbatore – 641 048
In the presence of witnesses: **Witness 1:** **Dr. Cecilia Joseph** Director of Research Tamil Nadu Veterinary and Animal Sciences University, Madhavaram Milk Colony, Chennai - 600 051	In the presence of witnesses: **Witness 1:** **Mrs. R. Vinu** W/o. Mr. Shanmuga Sundara Raj Rukmani Garden, 2nd Street Pattanampudur Coimbatore 641 016
Witness 2: **Dr. R. Narendra Babu** Professor and Head Department of Livestock Products Technology (Meat Science), Madras Veterinary College, Chennai - 600 007	**Witness 2:** **Mr. L. Gopinath** No.119 a, Anna Salai 5th Cross Street, Thanikachalam Nagar Ponniammanmedu, Chennai- 600 110

Annexure IV

All India Council for Technical Education

(A Statutory body under Ministry of HRD, Govt. of India)

Nelson Mandela MargVasant Kunj, New Delhi-110067
PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 www.aicte-India.org

F.No. Southern/2017/1-3373970471 Date: 30-Apr-2017

To,
The Principal Secretary
(Higher Education) Govt. of Tamil Nadu,
N. K. M. Bld. 6th Floor Secretariat,
Chennai-600009

Sub: Letter of Approval for New Institute 2017-18

Sir/Madam,

In terms of the provisions under the All India Council for Technical Education (Grant of Approvals for Technical Institutions) Regulations 2016 notified by the Council vide notification number F.No.AB/AICTE/REG/2016 dated 30/11/2016 and other notifications, as applicable and published from time to time, I am directed to convey the approval to

Permanent Id	1-3373970471	Application Id	1-3373970471
Name of the Institute	COLLEGE OF POULTRY PRODCUTION AND MANAGEMENT	Institute Address	DENKANIKOTTAI ROAD, MATHIGIRI, HOSUR, NAGANDOPALLI, KRISHNAGIRI, Tamil Nadu, 635110
Name of the Society/Trust	TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY	Society/Trust Address	MADHAVARAM MILK COLONY, CHENNAI-51,CHENNAI,THIRUVALLUR,Tamil Nadu,600051
Institute Type	Government	Region	Southern

to conduct following courses with the intake indicated below for the academic year 2017-2018

	Application Id : 1-3373970471								
S. No.	Programme	Shift	Level	Course	Full/Part Time	Affiliating Body	Intake approved for 2017-18	PIO/FN/Gulf Quota	NRI
1	ENGINEERING AND TECHNOLOGY	1st Shift	UNDER GRADUATE	POULTRY TECHNOLOGY	FULL TIME	Tamil Nadu Veterinary and Animal Sciences University, Chennai	60	NA	NA

Note: The approval is valid for two years from the date of issue of this letter only for getting affiliation with respective University/ Board of Technical Education (BTE)/ Board of Technical Education & Training (BTET) (as applicable) and fulfilling State Govt. requirements for admission. If institution is unable to start in the academic session 2017-18 due to reason mentioned above, the institution will have to apply On-line on AICTE web portal in next academic session for continuation of approval.

The Society/Trust/Institution shall obtain necessary affiliation / permission from the concerned affiliating University/ Board of Technical Education (BTE)/ Board of Technical Education & Training (BTET)(as applicable) as per the prescribed schedule of the University/ Board of Technical Education (BTE)/ Board of Technical Education & Training (BTET)(as applicable) Admission authority etc. The Applicant Society/Trust/Institution shall send information about commencement of the above courses to AICTE. In case the Institution is not in a position to commence the above mentioned courses for whatever reason during the two years period from the date of issue of this letter, the approval becomes invalid and the applicant Society/Trust/Institution shall make fresh application to AICTE for grant of approval

All India Council for Technical Education

(A Statutory body under Ministry of HRD, Govt. of India)

Nelson Mandela Marg,Vasant Kunj, New Delhi-110070 Website: www.aicte-india.org

APPROVAL PROCESS 2018-19

Extension of Approval (EoA)

F.No. Southern/1-3513064147/2018/EOA

Date: 04-Apr-2018

To,

The Principal Secretary
(Higher Education) Govt. of Tamil Nadu,
N. K. M. Bld. 6th Floor Secretariat,
Chennai-600009

Sub: Extension of Approval for the Academic Year 2018-19

Ref: Application of the Institution for Extension of approval for the Academic Year 2018-19

Sir/Madam,

In terms of the provisions under the All India Council for Technical Education (Grant of Approvals for Technical Institutions) Regulations 2016 notified by the Council vide notification number F.No.AB/AICTE/REG/2016 dated 30/11/2016 and amended on December 5, 2017 and norms standards, procedures and conditions prescribed by the Council from time to time, I am directed to convey the approval to

Permanent Id	1-3373970471	**Application Id**	1-3513064147
Name of the Institute	COLLEGE OF POULTRY PRODCUTION AND MANAGEMENT	**Name of the Society/Trust**	TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY
Institute Address	DENKANIKOTTAI ROAD, MATHIGIRI, HOSUR, NAGANDOPALLI, KRISHNAGIRI, Tamil Nadu, 635110	**Society/Trust Address**	MADHAVARAM MILK COLONY, CHENNAI-51,CHENNAI,THIRUVALLUR,Tamil Nadu,600051
Institute Type	Government	**Region**	Southern

Opted for Change from Women to Co-Ed and vice versa	No	**Change from Women to Co-Ed and vice versa Approved or Not**	NA
Opted for Change of Name	No	**Change of Name Approved or Not**	NA
Opted for Change of Site	No	**Change of Site Approved or Not**	NA
Opted for Conversion from Degree to Diploma or vice versa	No	**Conversion for Degree to Diploma or vice versa Approved or Not**	NA
Opted for Organization Name Change	No	**Change of Organization Name Approved or Not**	NA

To conduct following Courses with the Intake indicated below for the Academic Year 2018-19

Program	Shift	Level	Course	FT/PT+	Affiliating Body (Univ/Body)	Intake Approved for 2018-19	NRI Approval Status	PIO / FN / Gulf quota/ OCI/ Approval Status	Foreign Collaboration /Twining Program Approval Status*
ENGINEERING AND TECHNOLOGY	1st	UNDER GRADUATE	POULTRY TECHNOLOGY	FT	Tamil Nadu Veterinary and Animal Sciences University, Chennai	60	NA	NA	NA

+FT –Full Time,PT-Part Time

All India Council for Technical Education

(A Statutory body under Ministry of HRD, Govt. of India)

Nelson Mandela Marg,Vasant Kunj, New Delhi-110070 Website: www.aicte-india.org

APPROVAL PROCESS 2019-20

Extension of Approval (EoA)

F.No. Southern/1-4261055158/2019/EOA

Date: 10-Apr-2019

To,

The Principal Secretary
(Higher Education) Govt. of Tamil Nadu,
N. K. M. Bld. 6th Floor Secretariat,
Chennai-600009

Sub: Extension of Approval for the Academic Year 2019-20

Ref: Application of the Institution for Extension of approval for the Academic Year 2019-20

Sir/Madam,

In terms of the provisions under the All India Council for Technical Education (Grant of Approvals for Technical Institutions) Regulations 2018 notified by the Council vide notification number F.No.AB/AICTE/REG/2018 dated 31/12/2018 and norms standards, procedures and conditions prescribed by the Council from time to time, I am directed to convey the approval to

Permanent Id	1-3373970471	**Application Id**	1-4261055158
Name of the Institute	COLLEGE OF POULTRY PRODCUTION AND MANAGEMENT	**Name of the Society/Trust**	TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY
Institute Address	DENKANIKOTTAI ROAD, MATHIGIRI, HOSUR, NAGANDOPALLI, KRISHNAGIRI, Tamil Nadu, 635110	**Society/Trust Address**	MADHAVARAM MILK COLONY, CHENNAI-51,CHENNAI,THIRUVALLUR,Tamil Nadu,600051
Institute Type	Government	**Region**	Southern

Opted for Change from Women to Co-Ed and vice versa	No	**Change from Women to Co-Ed and vice versa Approved or Not**	NA
Opted for Change of Name	No	**Change of Name Approved or Not**	NA
Opted for Change of Site/Location	No	**Change of Site/Location Approved or Not**	NA
Opted for Conversion from Degree to Diploma or vice versa	No	**Conversion for Degree to Diploma or vice versa Approved or Not**	NA
Opted for Organization Name Change	No	**Change of Organization Name Approved or Not**	NA
Opted for Merger of Institution	No	**Merger of Institution Approved or Not**	NA
Opted for Introduction of New Program/Level	No	**Introduction of Program/Level Approved or Not**	NA

To conduct following Courses with the Intake indicated below for the Academic Year 2019-20

Program	Shift	Level	Course	FT/PT+	Affiliating Body (Univ/Body)	Intake Approved for 2019-20	NRI Approval Status	PIO / FN / Gulf quota/ OCI/ Approval Status
Engineering And Technology	1st	Under Graduate	Poultry Technology	FT	Tamil Nadu Veterinary and Animal Sciences University, Chennai	60	NA	NA

+FT –Full Time,PT-Part Time

All India Council for Technical Education

(A Statutory body under Ministry of HRD, Govt. of India)

Nelson Mandela Marg,Vasant Kunj, New Delhi-110070 Website: www.aicte-india.org

APPROVAL PROCESS 2020-21

Extension of Approval (EoA)

F.No. Southern/1-7009049477/2020/EOA Date: 30-Apr-2020

To,

The Principal Secretary
(Higher Education) Govt. of Tamil Nadu,
N. K. M. Bld. 6th Floor Secretariat,
Chennai-600009

Sub: Extension of Approval for the Academic Year 2020-21

Ref: Application of the Institution for Extension of Approval for the Academic Year 2020-21

Sir/Madam,

In terms of the provisions under the All India Council for Technical Education (Grant of Approvals for Technical Institutions) Regulations 2020 notified by the Council vide notification number F.No. AB/AICTE/REG/2020 dated 4th February 2020 and norms standards, procedures and conditions prescribed by the Council from time to time, I am directed to convey the approval to

Permanent Id	1-3373970471	**Application Id**	1-7009049477
Name of the Institute	COLLEGE OF POULTRY PRODCUTION AND MANAGEMENT	**Name of the Society/Trust**	TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY
Institute Address	DENKANIKOTTAI ROAD, MATHIGIRI, HOSUR, NAGANDOPALLI, KRISHNAGIRI, Tamil Nadu, 635110	**Society/Trust Address**	MADHAVARAM MILK COLONY, CHENNAI-51,CHENNAI,THIRUVALLUR,Tamil Nadu,600051
Institute Type	Government	**Region**	Southern

To conduct following Courses with the Intake indicated below for the Academic Year 2020-21

Program	Level	Course	Affiliating Body (University /Body)	Intake Approved for 2019-20	Intake Approved for 2020-21	NRI Approval Status	PIO / FN / Gulf quota/ OCI/ Approval Status
ENGINEERING AND TECHNOLOGY	UNDER GRADUATE	POULTRY TECHNOLOGY	Tamil Nadu Veterinary and Animal Sciences University, Chennai	60	60	NA	No

It is mandatory to comply with all the essential requirements as given in APH 2020-21 (Appendix 6)

All India Council for Technical Education

(A Statutory body under Ministry of Education, Govt. of India)

Nelson Mandela Marg,Vasant Kunj, New Delhi-110070 Website: www.aicte-india.org

APPROVAL PROCESS 2021-22

Extension of Approval (EoA)

F.No. Southern/1-9320393631/2021/EOA Date: 25-Jun-2021

To,

The Principal Secretary
(Higher Education) Govt. of Tamil Nadu,
N. K. M. Bld. 6th Floor Secretariat,
Chennai-600009

Sub: Extension of Approval for the Academic Year 2021-22

Ref: Application of the Institution for Extension of Approval for the Academic Year 2021-22

Sir/Madam,

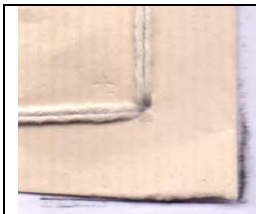
In terms of the provisions under the All India Council for Technical Education (Grant of Approvals for Technical Institutions) Regulations, 2021 Notified on 4th February, 2020 and amended on 24th February 2021 and norms standards, procedures and conditions prescribed by the Council from time to time, I am directed to convey the approval to:

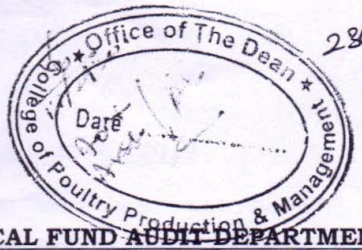
Permanent Id	1-3373970471	**Application Id**	1-9320393631
Name of the Institution /University	COLLEGE OF POULTRY PRODCUTION AND MANAGEMENT	**Name of the Society/Trust**	TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY
Institution /University Address	DENKANIKOTTAI ROAD, MATHIGIRI, HOSUR, NAGANDOPALLI, KRISHNAGIRI, Tamil Nadu, 635110	**Society/Trust Address**	MADHAVARAM MILK COLONY, CHENNAI-51,CHENNAI,THIRUVALLUR,Tamil Nadu,600051
Institution /University Type	Government	**Region**	Southern

To conduct following Programs / Courses with the Intake indicated below for the Academic Year 2021-22

Program	Level	Course	Affiliating Body (University /Body)	Intake Approved for 2020-21	Intake Approved for 2021-22	NRI Approval Status	FN / Gulf quota/ OCI/ Approval Status
ENGINEERING AND TECHNOLOGY	UNDER GRADUATE	POULTRY TECHNOLOGY	Tamil Nadu Veterinary and Animal Sciences University, Chennai	60	60	NA	NA
ENGINEERING AND TECHNOLOGY	UNDER GRADUATE	POULTRY TECHNOLOGY	Tamil Nadu Veterinary and Animal Sciences University, Chennai	60	60	NA	No
ENGINEERING AND TECHNOLOGY	UNDER GRADUATE	POULTRY TECHNOLOGY	Tamil Nadu Veterinary and Animal Sciences University, Chennai	60	60	NA	NA

Annexure V





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2019-20
Audit Note

LOCAL FUND AUDIT DEPARTMENT

From

Thiru.V.Muthukrishnan, B.Sc., B.Ed.
Deputy Director of Local Fund Audit (FAC),
TANUVAS Audit,
MVC Campus, Chennai – 7.

To

The Dean,
College of Poultry Production + and Management
Hosur – 627 358.

R.C. No. 1203 /A1/2019 dated:26.12.2019

Sir,

Sub: Audit – audit notes on the accounts of the CPPM, Hosur for the year 2018-19 – Audit notes – sending of – Regarding.

Ref: Annual Accounts for the year 2018-19.

****

The audit notes on the accounts of the College of Poultry Production and Management, Hosur for the year 2018-19 are sent herewith. The replies of the audit notes may kindly be sent to this office within one month from the date of its receipt.

The receipt of the audit notes may be acknowledged early.

Deputy Director(FAC)
Local Fund Audit,
TANUVAS, Chennai

Copy to: (1) The Finance Officer, TANUVAS, Chennai – 51.

LOCAL FUND AUDIT DEPARTMENT

From

Thiru.V.Muthukrishnan, B.Sc., B.Ed.,
Deputy Director(FAC),
TANUVAS Audit,
MVC Campus, Chennai – 7.

To

The Dean,
College of Poultry Production
and Management,
Hosur – 635 110.

R.C. No. 646/A1/2020, dated: 15.12.2020

Sir,

Sub: Audit – Audit Report on the accounts of College of Poultry Production and Management, Hosur for the year 2019- 20 – Audit Report sent – Regarding.

****

The Audit Report on the Accounts of the College of Poultry Production and Management, Hosur for the year 2019-20 are sent herewith. The replies of the Audit Report may kindly be sent to this office within one month from the date of its receipt.

The receipt of the audit notes may be acknowledged early.

19.12.20

Deputy Director(FAC),
Local Fund Audit,
TANUVAS, Chennai

Copy to: The Finance Officer, TANUVAS, Chennai – 51.

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19/1/22

LOCAL FUND AUDIT DEPARTMENT

From

Thiru. V. Muthukrishnan, B.Sc., B.Ed.,
Deputy Director
Local Fund Audit,
TANUVAS, MVC Campus,
Chennai – 600 007.

To

The Dean,
College of Poultry
Production
and Management
Hosur – 627 358.

R.C. No.689/A1/2021 dated:15.12.2021

Sir,

Sub: Audit – audit notes on the accounts of the CPPM, Hosur for the year 2020-21 – Audit notes – sending of – Regarding.

Ref: Annual Accounts for the year 2020-21.

****

The audit notes on the accounts of the College of Poultry Production and Management, Hosur for the year 2020 -21 are sent herewith. The replies of the audit notes may kindly be sent to this office within two months from the date of its receipt.

The receipt of the audit notes may be acknowledged early.

Deputy Director
Local Fund Audit,
TANUVAS, Chennai

Copy to: (1) The Finance Officer, TANUVAS, Chennai – 51.