

# N HEP



## Institutional Development Plan TANUVAS

***Period of Report – 01/04/2021 to 31/03/2022***

IDP Coordinating Unit

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26/04/2022

## **(1) Executive summary**

The Institutional Development Plan (IDP) functioning at Tamil Nadu Veterinary and Animal Sciences University was developed to focus on improving the curriculum with modern pedagogical tools to facilitate the students to learn at their convenience and to possess multiple skills. To achieve this, under IDP of TANUVAS, it was planned to develop open knowledge hubs, quality open contents, skill development centres, learning and assessment centre, entrepreneurship development cell, senior residency programmes, knowledge sharing by industry and alumni. Further, the quality of faculty will be improved through faculty development programmes in niche areas of education technology. In this regard, four objectives were proposed under IDP of TANUVAS. First objective was to focus on curriculum improvement through outcome-based learning, improved pedagogy and identification of day one skills. The second and third objectives was to focus on development of open knowledge hubs and skill development respectively. The final one was to focus on networking with alumni and global institutions to develop the institution in international arena. For every objective 3-5 well defined programmes were identified with monitorable targets. The functioning of IDP at TANUVAS ensures successful development of the institution.

During 2021-22, Two smart classrooms at Madras Veterinary College (MVC) and Veterinary College and Research Institute, Namakkal (VCRI) were further equipped with a Lecture capture system to ensure video and audio capture of lecture to be distributed among students. The Learning and Assessment Centre (LAC), at Madras Veterinary College was refurbished to accommodate a Virtual Lab to facilitate modern learning. Language labs (English, French, Japanese and German) were procured and installed in Learning and Assessment centre of MVC, Chennai and in other two colleges. Due to COVID-19 restrictions, all the developmental programmes for students and faculties were carried out through online mode. Four online clerkship programme mimicking international clinical externship programme was conducted on niche clinical topics for the benefit of 100 B.V.Sc & A.H students. In these programmes, a total of 52 lectures and clinical demonstrations were carried out by faculty from four Universities in US and one from Israel. A total of 60 guest lectures on nine thematic areas were delivered by experts from different areas. Two Remedial courses on Scientific English and Engineering Mathematics were carried out for 122 weak students. A career guidance programme was carried out for the benefit of 125 B.Tech students. Six e-initiatives were undertaken and were included as portals in the official website of IDP of TANUVAS for report generation, backup filing, bill generation, international training event management. For faculties, eight workshops were conducted by online to expand the knowledge levels on student-centred teaching. A total of 182 faculties were benefitted. One of the workshops was on Using AutoDesk fusion 360 for printing 3D images for academic activities. Four entrepreneurial development videos were developed making the total to 12.

Development of Virtual Anatomy has been completed and installed in the systems at Virtual Lab in LAC. A total of 7,908 students and 206 faculties have directly derived benefits under IDP in this financial year. Suitable environmental and social safeguard measures were taken up. International clinical externship and faculty development programmes as well as visiting of adjunct faculties could not be pursued due to COVID pandemic situation.

## Progress made during period

The progress made across each component of NAHEP during April 2021 to March 2022 is provided.

### TECHNICAL PROGRESS

The following committees were formed for better functioning of the scheme:

- a) Procurement Committee
- b) Bid evaluation committee
- c) Purchase committee
- d) Technical expert committee for IT and ITES
- e) Project monitoring committee (PMC)
- f) Civil work committee
- g) Virtual Anatomy monitoring committee
- h) Smart Classroom committee

### A. PROCUREMENT

S/No/	Activity Reference no/ / Description	Procurement category	Evaluation options	Process status
	<b>ICAR GRANT</b>			
1.	Modernisation of classroom to smart classroom at Madras Veterinary College - 3 no; CFDT-1 No/	Civil work	RFQ	Completed
2.	Modernisation and refurbishment of Learning assessment Centre , MVC	Civil work	RFQ	Completed
3.	Modernisation of classroom to smart classroom at VCRI Namakkal - 2 No/	Civil work	RFQ	Completed
4.	Modernization and refurbishing of soft skill labs - Roof, wall and floor paneling, partitioning and HVAC - VCRI-NKL; CFDT – 2Nos/	Civil work	RFQ	Completed
5.	Textbooks for undergraduate students in veterinary and animal sciences and food sciences	Goods	RFQ	Completed
6.	Bovine simulators - AI training model, injection and anatomy models	Goods	DC	Completed
7.	Canine surgical model	Goods	DC	Completed
8.	e books and e journals	Goods	DC	Completed
9.	Veterinary Simulators - Equine venipuncture, Bovine dystocia	Goods	DC	Completed

S/No/	Activity Reference no / / Description	Procurement category	Evaluation options	Process status
	simulator and Theriogenology unit, canine spay simulator, suture pads, canine limb simulator			
10.	Bovine Haptic Cow	Goods	DC	Completed
11.	High end Microscopes with large digital display -16 Nos/	Equipment	RFB	Approval pending
<b>STATE GRANT</b>				
12.	Lecture Capture Solution	Machinery	RFQ	Completed
13.	Computer based Interactive Language Lab	Equipment	RFQ	Completed
14.	Modular Laboratory Refurbishment of Virtual Laboratory at Learning and Assessment Centre	Civil Works	RFQ	Completed
15.	Textbooks for undergraduate students in veterinary and animal sciences and food sciences	Books and Journal	RFQ / DC	Completed
16.	Stainless steel physical examination table	Equipment	RFQ	Completed
17.	Office furniture - Roundafire – 2 Nos/, Exhibition display panel - 3 Nos/	Furniture	RFQ	Completed

## B. TRAININGS AND WOKSHOPS:

### STUDENT DEVELOPMENT ACTIVITIES

#### 1. *Online Guest Lectures*

Online guest lectures for undergraduate courses were conducted for undergraduate students (1-year to V-year BVSc & AH) using the infrastructure facility created under NAHEP. Their active participation during the online lecture was monitored by Assistant Professors of the Education Cell. Virtual attendance is being maintained properly. A total of 60 Guest lectures were delivered in nine thematic areas. Lecturers were from overseas and India and experts in their area.

No.	Title	Dates	Guest Lecturers
<b>T. 1</b>	<b>ANIMAL HEALTH</b>		
1.	Advances In Clinical Parasitology	26/04/2021	Dr.Manigandan Lejeune, Ph.D., Dip. ACVM (Parasitology) Cornell University, Ithaca, NY USA
2.	Next generation vaccines – Truths and myths	28/04/2021	Dr. Sheela Ramamoorthy, M.S., Ph.D., North Dakota State University, Fargo, USA
3.	Clinical pathology of small animal vector borne diseases	30/04/2021	Prof. Gad Baneth, DVM., Ph.D., Dipl.ECVCP Hebrew University, Rehovot, Israel
<b>T. 2</b>	<b>AWARENESS ON COVID 19</b>		
4.	Present COVID 19 Crisis	11/05/2021	Dr. Manimaran, MD., Pulmonologist, MIOT Hospitals, Chennai

No.	Title	Dates	Guest Lecturers
5.	Past Pandemics with special emphasis on Spanish Flu	12/05/2021	Dr. S. Sivasankari, M.D., Ph.D., Professor of Microbiology Meenakshi Medical College and Research Institute, Kanchipuram.
6.	Vaccines and treatment protocol for COVID 19	17/05/2021	Dr. S. Usha, M.D., Ph.D., Professor of Microbiology PSG Institute of Medical Science and Research, Coimbatore.
7.	Relieving psychological stress of COVID 19	19/05/2021	Dr. Vidyaa Hari, M.D.S., Dentist and Psychotherapist Smile Dental Clinic, Chennai
8.	How to help society during COVID 19 crisis	21/05/2021	Dr. Vidyaa Hari, M.D.S., Dentist and Psychotherapist Smile Dental Clinic, Chennai
9.	Present COVID 19 Crisis	11/06/2021	Dr. Manimaran, MD., Pulmonologist, MIOT Hospitals Manapakkam, Chennai
10.	Past Pandemics with special emphasis on Spanish Flu	14/06/2021	Dr. S. Sivasankari, M.D., Ph.D., Professor of Microbiology Meenakshi Medical College and Research Institute, Kanchipuram.
11.	Vaccines and treatment protocol for COVID 19	18/06/2021	Dr. S. Usha, M.D., Ph.D., Professor of Microbiology PSG Institute of Medical Science and Research, Coimbatore.
12.	Relieving psychological stress during COVID 19	21/06/2021	Dr. Vidyaa Hari, M.D.S., Dentist and Psychotherapist Smile Dental Clinic, Chennai
13.	How to help society during COVID 19 crisis	24/06/2021	Dr. Vidyaa Hari, M.D.S., Dentist and Psychotherapist Smile Dental Clinic, Chennai
14.	Mucormycosis (Black fungus) – an emerging threat of the pandemic	29/06/2021	Dr. Vasumathy Vedantham, M.S (Ophthalmology), FRCS., Medical Director – Vitreoretinal surgeon, Radhatri Nethralaya Eye Hospital T.Nagar, Chennai -17.
<b>T. 3</b>	<b>SKILL BASED LEARNING</b>		
15.	Journey of a Vet as an industrialist	26/06/2021	Dr. Muthu Selvan, B.V.Sc., Managing Director Provet Pharma Private Limited, Guindy, Chennai -32.
16.	Set yourself goals to become an entrepreneur	26/06/2021	Dr. K.R. Gunaseharan, M.V.Sc., Managing Director Optima Poultry Private Limited, Coimbatore.
<b>T. 4</b>	<b>STRESS MANAGEMENT &amp; NEUTRALIZATION</b>		
17.	How to relieve stress	08/07/2021	Mrs. Nandita Pandey Personal Branding Coach Prismatic consulting Chennai.
18.	Stress busters for a healthy life	15/07/2021	-do-

No.	Title	Dates	Guest Lecturers
19.	Heal your mind	23/07/2021	-do-
20.	Make the best out of you	30/07/2021	-do-
<b>T. 5</b>	<b>UNDERSTANDING THE PRESENT DAY WORLD - 1</b>		
21.	Conservation of Tiger in India	10/07/2021	Dr.N.S.Manoharan, M.V.Sc., Wild life Veterinary Officer, Tamil Nādu Forest Academy, Coimbatore
22.	Self - Understanding	10/07/2021	G.Olivannan Motivational and Inspirational Speaker
23.	Maximising the benefit of womanhood	14/07/2021	Ms.Radha Krish Motivational Speaker, Chennai
24.	Life skills as a forerunner in social safeguard	17/07/2021	Ms.Radha Krish Motivational Speaker, Chennai
25.	Empower women	17/07/2021	Mrs. Rajeswari Karthikeyan, M.A., M.L., Motivational Speaker
26.	Physical fitness – a must for every learner	21/07/2021	Mr.A.Abdul Wasim Judo and Fitness Trainer
27.	Climate Change and gender equality	21/07/2021	Ms. Sri Shalini, Ph.D., Women Scientist – DST Centre for Climate Change and Disaster Management Anna University, Chennai.
28.	Diet for fitness	24/07/2021	Mr.A.Abdul Wasim Judo and Fitness Trainer
29.	Music as a stress buster	24/07/2021	Mr.B.V.Ramanan Play back singer and musician
30.	Disaster management	28/07/2021	Ms. Sri Shalini, Ph.D., Women Scientist – DST Centre for Climate Change and Disaster Management Anna University, Chennai.
31.	Psychological assessment (Strength and weakness)	31/07/2021	Mrs. Nandita Pandey Personal Branding Coach Prismatic consulting
32.	Lifestyle diseases and prevention	31/07/2021	Dr.S.Vettrivel Consultant Diabetologist
<b>T. 6</b>	<b>SOFT SKILLS TO MAXIMIZE OUTCOME</b>		
33.	Communication skills	02/08/2021	Dr.Vidyaa Hari. B.D.S., M.S., M.Phil Psychotherapist, personality development trainer and motivational speaker Chennai -17
34.	Building up confidence	05/08/2021	-do-
35.	Time Management	09/08/2021	-do-
36.	Adversity quotient	12/08/2021	-do-
37.	Presentation skills	16/08/2021	-do-
38.	Lateral thinking	19/08/2021	-do-
39.	Empathy	23/08/2021	-do-

No.	Title	Dates	Guest Lecturers
40.	You are the Key	26/08/2021	-do-
<b>T. 7</b>	<b>PREPARATION FOR UPSC AND OTHER COMPETITIVE EXAMINATIONS</b>		
41.	UPSC exams – an introduction	06/09/2021	Thiru. V.R. Sriramadesikan, Chief Coordinator, Chinmaya Academy for Civil services Belly area, Annanagar Chennai -40.
42.	Current affairs & News Paper	09/09/2021	-do-
43.	Mental ability & reasoning	13/09/2021	-do-
44.	Indian Polity	16/09/2021	-do-
45.	International relations	20/09/2021	-do-
46.	General studies – Ethics & Integrity	23/09/2021	-do-
47.	Science and Technology	27/09/2021	-do-
48.	Interview Process	30/09/2021	-do-
<b>T. 8</b>	<b>AVENUES FOR VETERINARY GRADUATES</b>		
49.	Experience of a veterinarian in administration	07/10/2021	Dr. V.R. Baskar, M.V.Sc., Personal Assistant to Hon'ble Minister of Fisheries, Fisherman welfare and Animal Husbandry, Government of Tamil Nadu Chennai
50.	Experience of a field vet	08/10/2021	Dr.M.S.Saravanan,B.V.Sc., Assistant Director Animal Husbandry Department, Madurai.
51.	Experience of a small animal vet	11/10/2021	Dr.Nidarshana Rabha,B.V.Sc., & AH Resident Veterinarian The Blue Ridge Pet Speciality Health Care and Research Centre, Bangalore
52.	Experience of a dairy vet	13/10/2021	Dr.K. Baskarathupathy, B.V.Sc., Director – Lactalis India Tirumala Milk Products Private Limited Chennai-110.
53.	Experience of an equine vet	18/10/2021	Dr. T.Jeyentra Balaji, B.V.Sc & A.H Veterinary officer Madras Race Club Equine Hospital Chennai
54.	Experience of a meat technologist	21/10/2021	Dr.S.P. Fonglan, B.V.Sc., General Manager Frigorifico AP foods Pvt Ltd., AP
55.	Experience of Veterinary Civil Servant in Society	22/10/2021	Dr. N. Subbaiyan, M.V.Sc., IAS Director of Disaster Management, Government of Tamil Nadu Chennai



No.	Title	Dates	Guest Lecturers
56.	Experience of a Lab animal vet	25/10/2021	Dr.P.Nagarajan, M.V.Sc., Staff Scientist IV Experimental Animal Facility Institute of Immunology, New Delhi
57.	Experience of a Pharmaceutical Industry vet	27/10/2021	Dr.P.S.Shiva, M.V.Sc., General Manager – Technical Neospark Drugs and Chemicals Pvt Ltd., Hyderabad
58.	Experience of a swine vet	29/10/2021	Dr.A.Kannan, M.V.Sc.,Ph.D., Associate Professor Livestock Production Management College of Veterinary Science, Mannuthy
<b>T. 9</b>	<b>ENVIRONMENT</b>		
59.	Air, Soil, Water	21/03/2022	Prof. Sultan Mohammed Ismail., Ph.D Member- State Planning Commission, Govt. of Tamil Nadu
60.	Early warning and early forecast of weather	21/03/2022	Dr. S. Balachandran DDGM, Regional Meteorological Centre Chennai

## 2. Entrepreneurship Development Activities

Entrepreneurship development among students is one of the important activities of the IDP. During the year 2020-21 eight video lessons were developed to promote entrepreneurship among students. During the year under report four more such videos were developed and uploaded into the official YouTube channel of IDP of TANUVAS. There are now 12 video lessons available in the official YouTube channel. The details along with YouTube links are provided below.

No.	Name of the video lesson	YouTube Link	Date of uploading	No of viewership
1.	Pet bird management	<a href="https://youtu.be/L3BKEFPWvvg">https://youtu.be/L3BKEFPWvvg</a>	12/08/2021	327
2.	Poultry biosecurity	<a href="https://youtu.be/eEY70Ve-wXo">https://youtu.be/eEY70Ve-wXo</a>	14/09/2021	121
3.	Establishment of Livestock Emergency and critical care centre	<a href="https://youtu.be/wdGI4n0GwSI">https://youtu.be/wdGI4n0GwSI</a>	03/12/2021	204
4.	Equine health management	<a href="https://youtu.be/YLRcZ_K6WP0">https://youtu.be/YLRcZ_K6WP0</a>	31/12/2021	275
			<b>TOTAL</b>	<b>927</b>

Further an entrepreneurship sensitization was conducted by NAARM for the benefit of UG students. Veterinary entrepreneurs were invited to deliver lecture. A total of around 220 students attended. The details are as follows.

No.	Title of the Programme	Date	Organizer detail
1.	Entrepreneurship development in Agriculture and Allied Sector	19/06/2021	Dr.N.Sivaramane, CEO & Principal Scientist a-IDEA, ICAR – NAARM Hyderabad

### 3. Remedial Classes

Remedial classes are regularly conducted for the undergraduate students who have difficulties in pursuing the course. During the period under report two remedial classes were conducted benefitting 122 students. Of the 122 students, 54.10% were girls and remaining boys. Further 19.67% were scheduled caste students and remaining belong to general category. The details are as follows.

S.No.	Remedial Course	Duration	Beneficiaries	M	F	G	SC
1.	Scientific English Course (Compulsory course for all UG students)	25 hours	82	33	49	75	17
2.	Engineering Mathematics (for those students who are score less than 50% in first Internal)	25 hours	40	23	17	33	7
	<b>TOTAL</b>		122	56	66	108	24
	<b>PERCENTAGE</b>			45.90	54.10	88.52	19.67

### 4. Other Special Activities

The other special activities conducted are provided below. A total of 262 students were benefitted from these programmes

No.	Title	Dates	College	Beneficiaries	M	F	G	SC
1.	International Universal Health Coverage Day" as a part of celebration of Azadi ka Amrit Mahotsav celebrations	13/12/2021	CFDT Koduvalli	100	43	57	74	26
2.	International Day of Education 2022 as a part of celebration of Azadi ka Amrit Mahotsav celebrations	24/02/2022	-do-	100	49	51	78	22
3.	World Meteorological Day	21/03/2022	MVC	62	15	47	51	11
	<b>TOTAL</b>			262	107	155	203	59
	<b>PERCENTAGE</b>				40.84	59.16	77.48	22.52

### 5. Career Guidance Programme

Apart from the career guidance given through online lectures, a special programme was conducted at the College of Food and Dairy Technology, Koduvalli. A total of 762 student were benefitted and 62.42% were girls. The details are provided below.

No.	Title	Dates	Beneficiaries	M	F	G	SC
	<b>Career Guidance programme</b>						
1.	How to prepare Group Exams?	09/03/2022	81	32	49	70	11
2.	Entrepreneurship in Dairy sector	10/03/2022	81	32	49	70	11
3.	The requisite industrial skill	11/03/2022	116	40	76	84	32
4.	Challenges in Dairy Entrepreneurship as I saw	14/03/2022	118	42	76	88	30
5.	How to choose a right career?	15/03/2022	126	51	75	93	33
6.	TOEFL and GRE preparations	16/03/2022	114	38	76	83	31
7.	Age doesn't matter for Entrepreneurship	18/03/2022	125	51	74	92	33
		<b>TOTAL</b>	761	286	475	580	181
		<b>PERCENTAGE</b>		37.58	62.42	76.22	23.78

### 6. Learning and Assessment Centre

A fully functional Learning and Assessment Centre has been established with following sections and stations. LAC of TANUVAS has following major sections.

- a. Veterinary Clinical skill learning Stations
- b. Virtual Lab with 40 computers and two large screen displays to learn cattle anatomy VR/AR
- c. Language Labs (English, French, German and Spanish) with presentation skill learning

No.	Subject of study	Learning Stations
<b>A.</b>	<b>Veterinary Surgery &amp; Radiology</b>	
		1. Anaesthetic station
		2. Draping
		3. Suture
		4. Canine surgical
		5. Canine bandaging
		6. Canine spaying
		7. Canine orthopaedic

No.	Subject of study	Learning Stations
B.	<b>Veterinary Medicine</b>	8. Respiratory and heart sound simulators
		9. Thoracocentesis
		10. Canine vascular access
		11. Rat IV simulator
		12. Critical care cat
		13. Bovine injection simulator
		14. Equine IV simulator
		15. Canine CPR
C.	<b>Obstetrics and Gynaecology</b>	
		16. Haptic cow
		17. Dystocia simulator
		18. Bovine Theriogenology
D.	<b>Animal Handling</b>	
		19. Cattle, horse, dog, pig, goat and poultry with Arduino sensor to identify clinical parts of significance
E.	<b>Veterinary Anatomy</b>	
		20. Dog hip
		21. Dog ear
		22. Media section of dog head
		23. Foot of horse
		24. 3-D flip charts

The utility pattern of LAC during the reporting period is provided below. A total of 936 students utilized to learn clinical skills is provided below.

No.	Clinical skill stations	No. of users
1.	Canine surgical station	151
2.	Canine bandaging station	185

No.	Clinical skill stations	No. of users
3.	Artificial insemination station	68
4.	Canine surgical station	203
5.	Dystocia and Theriogenology station	192
6.	Thoracocentesis - Station	32
7.	Liver biopsy station	35
8.	Heart sound station	35
9.	Canine orthopaedic	35
	<b>TOTAL</b>	936

## FACULTY DEVELOPMENT ACTIVITIES

### 1. Workshops / Meetings

#### a. International Workshops

Faculty development workshops International for Master Trainers - This programme could not be conducted as faculty could not come from WSU, due to travel restriction imposed for pandemic Covid-19

#### b. National Workshops

The following eight workshops were conducted for the faculty of TANUVAS in association with some external institutions/agencies. A total of 206 faculty members were benefitted by these workshops. Of these 206 faculty members 45.63% were women and 29.13% were from scheduled caste. One workshop on Autodesk fusion 360 is for creating 3D images for teaching.

No.	Title	Dates	Conducted by	No. of faculty	M	F	G	SC
1.	Content Development and Management	19/04/21 to 23/04/21	NAARM	30	19	11	22	8
2.	Facilitative Teaching Technologies	17/05/21 to 21/05/21	NAARM	29	14	15	20	9
3.	IPR, Copy Right, Industrial Design and Plagiarism	24/08/2021 to 28/08/2021	NAARM	30	19	11	22	8
4.	Content Development and Management	14/09/2021 to 19/09/2021	NAARM	30	17	13	19	11

No.	Title	Dates	Conducted by	No. of faculty	M	F	G	SC
5.	Facilitative Teaching Technologies	26/10/2021 to 30/10/2021	NAARM	30	15	15	19	11
6.	Auto desk Fusion 360 for 3D printing	11/03/2022 To 19/03/2022	CAE Centre	5	2	3	3	2
7.	Orientation Programme for faculty	25/10/2021 To 29/10/21	DEE, TANUVAS	48	23	25	37	11
8.	Virtual Cattle Anatomy	23/03/2022	HoloSuit	4	3	1	4	0
			<b>TOTAL</b>	206	112	94	146	60
			<b>PERCENTAGE</b>		54.37	45.63	70.87	29.13

### C. TRAININGS AND WOKSHOPS:

#### 1. Students

##### *Online Clerkships*

In veterinary education in US, a clerkship, or rotation, refers to the practice of medicine by students during their final year(s) of study. Since we could not send students for internship to US due to Covid 19, clerkships were designed on niche areas. The programme comprises of lectures, practical demonstration, and discussion. During the year four such programmes were conducted. The lecturers included clinical and other faculty from the Washington State University, US, Cornell University, US, South Dakota State University, US and the Hebrew University Israel. Each Clerkship comprises of a minimum of 12 lectures (90-120 minutes) for a duration of three weeks. For each programme 20-30 students were selected to attend based on their OGPA. Attendance was made mandatory, and certificates were provided to students. In these programmes 52 lectures / demonstrations were delivered. A total of 100 students (51% boys and 49% girls) were benefitted.

No.	Title	Dates	Lecturer	Beneficiaries	M	F	G	SC
<b>A.</b>	<b>Equine Health</b>			<b>20</b>	<b>14</b>	<b>6</b>	<b>17</b>	<b>3</b>
1.	Equine lameness	12/07/2021	Dr. Kelly Fransworth Washington State University, USA					
2.	Equine Orthopaedic Developmental Disease	13/07/2021	-do-					
3.	Equine Fracture First Aid	14/07/2021	-do-					
4.	Equine Wound Management	15/07/2021	-do-					
5.	Fluid therapy for horses	19/07/2021	Dr. Jennifer Gold Washington State University USA					
6.	Equine Colic	20/07/2021	-do-					

No.	Title	Dates	Lecturer	Beneficiaries	M	F	G	SC
7.	Muscle disease in the horse	21/07/2021	-do-					
8.	Neonatal Medicine	22/07/2021	-do-					
9.	Getting mare in foal early: Management of mare for breeding success	23/07/2021	Dr Ram Kasimanickam Washington State University USA					
10.	Is he good enough? Stallion management for a successful breeding season	24/07/2021	-do-					
11.	Management of pregnant mare	25/07/2021	-do-					
12.	Interventions of equine dystocia: How different it is from cow?	26/07/2021	-do-					
13.	Anatomy of forelimb of equines	03/08/2021	Dr Marco Lopez Washington State University USA					
14.	Anatomy of hindlimb of equines	04/08/2021	-do-					
<b>B.</b>	<b>Veterinary Laboratory Diagnosis</b>			<b>30</b>	<b>13</b>	<b>17</b>	<b>24</b>	<b>6</b>
15.	Canine Parvovirus – pathophysiology, diagnosis and treatment	30/08/2021	Dr. Gad Baneth Director, Koret School of Veterinary Medicine, Hebrew University, Jerusalem Israel					
16.	Feline infectious peritonitis – an elusive disease	31/08/2021	-do-					
17.	Canine Distemper – Neurological and generalized disease	01/09/2021	-do-					
18.	FIV and FeLV – similarities and differences	02/09/2021	-do-					
19.	Helminths of Veterinary Significance – Diagnostic perspective	06/09/2021	Dr. Manigandan Lejeune , Director of Clinical Parasitology Cornell University Ithaca, USA					
20.	Protozoans of Veterinary Significance – Diagnostic perspective	07/09/2021	-do-					
21.	Arthropods of Veterinary Significance	08/09/2021	-do-					

No.	Title	Dates	Lecturer	Beneficiaries	M	F	G	SC
22.	Diagnostic techniques for routine parasite detection and identification	09/09/2021	-do-					
23.	Veterinary diagnostic pathology in relation to clinical microbiology	13/09/2021	Dr Tamer A Sharafeldin South Dakota State University Brookings, South Dakota, USA					
24.	Molecular diagnostic techniques for pathogen detection and typing	14/09/2021	-do-					
25.	Autogenous vaccine urgent need for livestock industry	15/09/2021	-do-					
26.	Recruiting diagnostic skills for business start up	16/09/2021	-do-					
<b>C.</b>	<b>Niche areas of small animal health</b>			<b>30</b>	<b>18</b>	<b>12</b>	<b>24</b>	<b>6</b>
27.	Introduction to diagnosis, staging and grading	12/10/2021	Dr. Rance Sellon Associate Professor- WSU, Pullman, USA					
28.	Therapy options overview	13/10/2021	Dr. Janean Fidel Associate Professor- WSU, Pullman, USA					
29.	Round cell tumors	14/10/2021	-do-					
30.	Sarcomas	15/10/2021	-do-					
31.	Neurologic exam / Neurolocalization	18/10/2021	Dr. Annie Chen-Allen Assistant Professor- WSU, Pullman, USA					
32.	Diffuse Lower Motor Neuron Diseases	19/10/2021	-do-					
33.	Spinal Cord Injury	20/10/2021	Dr. Yael Merbl Assistant Professor- WSU, Pullman, USA					
34.	Bladder management and drugs	21/10/2021	Dr. Vishal Murthy Assistant Professor- WSU, Pullman, USA					
35.	Triage of the Emergency Patient		Dr. Elizabeth Davidow, Assistant Professor- WSU, Pullman, USA					
36.	CPR		Dr. Sabrina Hoehne, Assistant Professor- WSU, Pullman, USA					
37.	Sepsis		-do-					
38.	Respiratory Emergencies		Dr. Elizabeth Davidow, Assistant Professor- WSU, Pullman, USA					



No.	Title	Dates	Lecturer	Beneficiaries	M	F	G	SC
39.	Timing of ovulation for successful breeding		Dr. Ramanathan Kasimanickam, WSU, Pullman, USA					
40.	Application of ultrasonography in canine reproduction		-do-					
41.	Prostatic diseases		Dr. Vanmathy Kasimanickam Diplomate ACVPM WSU, Pullman, USA					
42.	Canine reproductive cases		Dr. Ramanathan Kasimanickam, WSU, Pullman, USA					
<b>D.</b>	<b>Small Ruminant Health</b>			<b>20</b>	<b>6</b>	<b>14</b>	<b>16</b>	<b>4</b>
43.	Down, Weak and Obtruded small ruminants: Metabolic and Neurologic diseases	08/02/2022	Dr. Andy Allen DVM, PhD, DACVIM Washington State University, Pullman, USA					
44.	Respiratory Diseases	09/02/2022	-do-					
45.	Diarrhoea/Gastrointestinal diseases	10/02/2022	-do-					
46.	Urinary tract diseases	11/02/2022	-do-					
47.	Lameness in Small Ruminants	14/02/2022	-do-					
48.	Breeding management of rams/goats	16/02/2022	Dr. Ram Kasimanickam, BVSc, PhD, Washington State University, Pullman, USA					
49.	Breeding management of ewes	17/02/2022	-do-					
50.	Accelerated breeding programs	18/02/2022	-do-					
51.	Abortion diseases	21/02/2022	-do-					
52.	Advanced reproductive technologies	22/02/2022	-do-					
			<b>TOTAL</b>	100	51	49	81	19
			<b>PERCENTAGE</b>		51	49	81	19

## 2. Virtual Cattle Anatomy

IDP of TANUVAS has developed the Virtual, Augmented and Mixed reality aids in Cattle Anatomy consisting of ten modules of regional, systemic and clinical anatomy for the benefit of first year, prefinal and final year undergraduate students to enhance learning outcomes. The technology used is the proprietary product of HoloSuit Inc. It also comprises of Virtual Reality based Immersive, Interactive 3D Practical modules. A simulated environment (virtual laboratory) of Veterinary Anatomy

has been created at LAC created for this purpose. The student is able to walk through the Virtual Anatomy Laboratory wherein lab structures, museum can be shown superimposed on real life view and he/she gets immersed in virtual environment, able to interact with the help of sensors - touch, feel, see the 3D cattle and explore with profound detail the various anatomical structures, along with descriptions provided. Augmented Reality (AR) Computer/ Mobile based Self learning for students to be experienced through Android device fits with any size of the screen. This way it enables “any time”, “anywhere” learning and practice by the students and also enhances the memory. With a clear pop-up labelling and interactive 3D models, students can easily get the relative position of the animal, anatomical plane directions, different angles of each bone, muscles/organs, blood vessels and nerves. In addition, the augmented reality model enables students to get “Objects in hand “to disassemble, assemble, and manipulate with both hands, the 3D AR cattle anatomical structures. Student Assessment is done at end of each module to test the learning effectiveness of the student in the form of multiple choice questions or short answers, quiz, drawing, painting or labelling the parts, zig saw puzzles etc. and the evaluation is made by the system itself and test score saved and tracked by the admin.

## **2. Faculty**

Faculty selected less than 40 years of age – two out of four staff, could not travel overseas for the 3-months training even after obtaining Visa due to COVID.

Two faculty, in the age group of 40-50 years of age and One faculty in the 50-58 years of age groups were selected but could not travel overseas for the 2-months and 14 days training respectively, due to COVID.

## **D. SHORT VISIT**

Two faculty from MVC, Chennai are yet to leave for a short visit (14 days) to Royal Veterinary College, London

## **E. ADMINISTRATIVE WORK:**

### **1. Distribution of Responsibilities**

The distribution of work among Co PIs for the smooth conduct and monitoring of activities of IDP-TANUVAS, during the year 2021-2022 is as follows.

<b>No.</b>	<b>Name of the Co-PI</b>	<b>Responsibilities</b>
1.	Dr. B. Mohan	VCRI activities
2.	Dr. V. Apparao	CFDT activities
3.	Dr. B. Samuel Masilamoni Ronald	MVC activities, Procurement, Social Safeguards

No.	Name of the Co-PI	Responsibilities
4.	Dr. P. Kumaravel	Student development programmes
5.	Dr. M. Prabhu	Student development programmes
6.	Dr. S. Hemalatha	Overseas faculty and student training, Grievance Redressal
7.	Dr. M. Ananda Chitra	Finance, PMTS and M&E
8.	Dr. P. Selvaraj	Coordinator for VCRI-Namakal
9.	Dr. B. Murugan	Coordinator for CFDT and EAP
10.	Dr. A. Sangaran	Student development programmes
11.	Dr. S. Rajalakshmi	Student development programmes and Finance
12.	Dr. S. Meenakshisundaram	Student development programmes
13.	Dr. T. A. Kannan	Student development programmes
14.	Dr. V. Ramesh	Student development programmes

## 2. Participation in PIU activities

During the year under report, the IDP of TANUVAS participated in the administrative activities of PIU.

The details are provided below.

No/	Title of workshop	Date	Organized by
1.	Annual Technical Review	27-29/08/2021	PIU
2.	Mapping the folders on OneDrive for PAT	16/07/2021	Finance Unit, PIU
3.	Virtual Session on Green Building/ Campus certification	18/08/2021	Environmental Safeguard, PIU, NAHEP
4.	Preparation of Financial Statements and smooth conduct of audit for FY 2020-21	19/08/2021	Finance Unit, PIU, NAHEP
5.	Assessment of Human Resource requirement in Agri and allied sector for the next 20 years	21/01/2022	M&E, PIU, NAHEP
6.	Post Procurement Review (PPR) Phase-2: South Zone	04/03/2022	UAS, GKVK Campus, Bangalore

## 3. e-Initiatives undertaken

During the period under report, the following e-initiatives were carried out for the smooth functioning of the project. The initiatives are available as portals in official website of IDP of TANUVAS (<https://idpoftanuvas.com>)

No.	Initiative started	Purpose
1.	Report Submission	For submitting weekly reports to PIU
2.	Event Management	To create record of activities both student development and faculty development

No.	Initiative started	Purpose
3.	Feedback Management	To ensure timely submission of feedback both students and staff
4.	Bill Generation	To generate bills and maintain accounts of IDP online
5.	International Training	To apply for international training both students and staff/ Paper application stopped
6.	Recruitment Portal	To recruit contractual staff

#### 4. DPRs submitted to PIU

A call was announced to get projects under Waste to Wealth concept. IDP of TANUVAS has also submitted a concept note. The concept note was approved, and presentation was also made to the committee and final approval is pending. The details are as below.

No/	Sub Project Title	Date of submission	Budget outlay	Approval status
1.	<b>Waste to wealth</b> – Green energy generation from poultry litter using biogas technology	22/10/2021	Rs/ 100/00 Lakhs	Approval pending

#### 5. Project staffing

At present the project has a Computer Operator. The computer programmer who was working till Feb 2022 resigned on personal grounds. The other posts could not be filled up despite our efforts since the candidates are not willing to serve for a shorter duration.

#### 6. Important reports submitted during 2021-2022 PIU NAHEP

The following reports have been submitted to PIU, NAHEP. The details are as below.

Sl.No.	Details of reports submitted	Date of submission	Submitted to
1.	Weekly report	Every week on Friday	PIU, NAHEP
2.	Bank Reconciliation Statement	First week of every month	NAHEP Finance
3.	Annual report for the year 2021 - 22	29/06/2021	PIU, NAHEP
4.	Detailed presentation for Annual Review of IDP	01/06/2021	PIU, NAHEP
5.	Updated Procurement Plan for 2021-22	NA	
6.	Output-Outcome-Framework (OOF) for Q1 of 2021 - 22	30/06/2021	PIU, NAHEP
7.	Return of Revenue Receipt for the FY 2021 - 22	18/06/2021	PIU, NAHEP
8.	Audited Report of Project Financial Statements by the ICAR-NAHEP empaneled auditors (M/s A. John Moris & Co)	06/10/2021	NAHEP Finance

Sl.No.	Details of reports submitted	Date of submission	Submitted to
7.	Output-Outcome-Framework (OOF) for Q2 of 2021 - 22	01/10/2021	PIU, NAHEP
8.	Output-Outcome-Framework (OOF) for Q3 of 2021 - 22	03/01/2022	PIU, NAHEP
9.	Output-Outcome-Framework (OOF) for Q4 of 2021 - 22	01/04/2022	PIU, NAHEP
10.	IUFR and Annual SoE for FY 2021 - 22	13/04/2022	NAHEP Finance

## **(2). MAJOR INNOVATIONS / ACHIEVEMENTS DURING THE PERIOD 2021-22**

### **A. STUDENT RELATED**

- Around 60 online guest lectures were delivered in nine thematic areas pertaining to various aspects in Veterinary health, environment, COVID crisis, developing skills and career prospective
- Four videos have been added to the existing list of eight videos on Entrepreneurship development for the students.
- Remedial classes for the students facing difficulties in studies and career guidance were organized.
- Four online Clerkship programmes were organized for the benefit of meritorious final year students; with the help of international adjunct faculty.

### **B. FACULTY RELATED**

- Five workshops were conducted by ICAR-NAARM for the TANUVAS faculty development, benefiting 149 faculty members.
- One orientation programme for TANUVAS faculty (48 members) conducted by DEE, TANUVAS and two other workshops (9 faculty) conducted by external institutions contributed to the faculty development programmes.
- Overseas training for the faculty in the identified age groups have been awaiting the withdrawal of travel restrictions ensuing COVID pandemic.

### **C. FACILITIES RELATED**

- Modernisation of identified classrooms at MVC, Chennai (1 no.), VCRI, Namakkal (2 nos.) and CFDT, Koduvalli (1 no.) to Smart classrooms have transformed the learning place for the students.
- The Virtual augmented and mixed reality aids in Cattle Anatomy have been the ultimate development made by IDP of TANUVAS, in addition to the Learning and Assessment Centre established at MVC campus.
- E books and Journals from International publishers were purchased and made available to students and faculty of TANUVAS for facilitated learning utilizing the ICAR and State grants.

- Veterinary simulators and surgical model installed will enable students to learn the related aspects anytime.
- Installation of Lecture capture solution and computer-based interactive language lab will be the timely requirements amidst hybrid learning situations.

#### D. VISIBILITY RELATED

Visibility of IDP using social media links have been established for IDP of TANUVAS. The details are provided below.

No.	Social Media	Official Name / Handle	Impact
1.	Website	<a href="https://idpoftanuvas.com">https://idpoftanuvas.com</a>	8841 hits
2.	YouTube	Idpoftanuvas	Available Videos – 53 Subscribers – 789 Total views – 13,692
3.	Facebook	Idpoftanuvas	NA
4.	Twitter	Idpoftanuvas	NA
5.	Instagram	Idpoftanuvas	NA

#### E. ENVIRONMENT RELATED

Mitigation and compliance with environmental and social safeguard measures were regularly adopted and sensitisation programmes were conducted for students, which included celebration certain important days online guest lectures by noted personalities. Four guest lectures were delivered, and World Meteorological Day was celebrated. The following codes / rules are followed in all the activities of IDP. The details are as follows.

No.	Legal Compliances	Mitigation Measures Undertaken
1.	National Building code of India (2005)	Measures regarding fire safety Approach to physically challenged Barricading the area and prevention of mingling of students and workers, Separate toilet for workers were provided.
2.	Energy conservation Act (2001)	Fixing of LED bulbs and Three-star air conditioners were installed.
3.	Noise Pollution Act (2000)	During construction, contractor was advised to minimize the noise pollution. The generators used were all noise free generators.
4.	E-waste rule (2011)	Applied to all electrical and electronic equipment

No.	Legal Compliances	Mitigation Measures Undertaken
5.	Regulation of Employment and Conditions of Service Act (1996)	No child labour was engaged by the contractors during the work

### (3). Information on Performance Indicators (April 2021- March 2022)

#### A. OUTPUT-OUTCOME MONITORING

Sl.No.	Particulars <sup>1</sup>	April'21 to March'22		
		Plan	Achievement	Progress made during period (Elaboration)
1.	Number of new facilitative units established to enable academic and research infrastructure (IIC-Industry Institution Interaction Cell / Start up cell / incubation cell / experiential learning unit / placement cell etc.)	-	-	Not applicable as all facilities have been created as mentioned in the DPR.
2.	Number of pilot courses added / upgraded on communication skills, entrepreneurial skills, information processing, creative and innovative thinking, leadership skills, industry oriented courses etc.	2	2	Scientific English for all first year students of B.V.Sc&AH and B.Tech Engineering Mathematics for I year B.Tech students
3.	Additional revenue generated through institutional activities with industries in INR lakhs	-	To be arrived	
4.	Revenue generated through public usage of infrastructure for academic activities in INR lakhs	-	-	Facilities are now used at college level only. They are yet to be opened to public due to Covid 19.
5.	Number of MoUs signed with industry for knowledge exchange programs/ internships / short term training programs etc.	-	In pipeline	Students have been sent for industrial training to various industries for a duration of 12 days. Signing of MoU with industries (12 Nos.) is under progress
6.	Number of faculty exchange programmes (both national and international) initiated by AU	4	-	Could not be conducted due to Covid 19
7.	Number of student exchange programmes (both national and international) initiated by AU	37	-	Could not be conducted due to Covid 19

#### B. INPUT AND ACTIVITY MONITORING

<sup>1</sup> Add the numbers for component specific awarded AUs and fill the required fields accordingly. If there was no plan against any specific indicator during this period, it needs to be filled zero.

Input / Activity indicator	Sub- head / category	Expenditure / input in INR lakhs		Justification <sup>2</sup>
		Planned	Utilization	
<b>Goods and equipment</b>	Equipment, Plant & Machinery	-	-	-
	Office equipment	-	-	-
	Laboratory equipment	156.27	0.00	All equipment except high end microscope with large digital display has been completed. The following have been added using State Grant 1. Language Lab 2. Lecture Capture System
	Furniture & fixtures	-	-	-
	Computers and Peripherals	9.75	0.00	All activity completed
	Books and Journals	16.13	0.00	All activity completed
<b>Civil works</b>	Minor repair and renovation work	50.65	2.10	All activity completed
<b>Human capacity building<sup>3</sup></b>	National level training	-	-	
	International level training	188.88	6.66	Participating Universities have not given approval for overseas HRD programme for faculty
	Short visit/ seminars	19.61	0.00	-do-
	Meetings and workshops	10.56	7.84	A total of seven workshops have been conducted – Five by ICAR - NAARM and two by other agencies
<b>Consultancy</b>	National level consultancies	55.00	-	Proposal submitted for revalidation
<b>Recurrent cost / Miscellaneous</b>	Travel	9.97	0.11	
	Contractual services	148.02	10.78	Data Entry Operator - 1 no. Computer Programmer - 1 no. – till Feb 2022
	Operational costs	777.46	94.25	<b>Student development activities</b> 1. Online clerkship – 4 2. Online Guest Lectures – 60 3. Career guidance programme – 1 4. Remedial classes – 2 5. Entrepreneurship development videos – 4 6. Entrepreneurship sensitization programme by NAARM – 1

<sup>2</sup> Mention the physical numbers and specify the activities / purposes against each input category

<sup>3</sup> Plz share the training details



Input / Activity indicator	Sub- head / category	Expenditure / input in INR lakhs		Justification <sup>2</sup>
		Planned	Utilization	
				7. Special day celebrations - 2
	Institutional charges	3.04	1.52	Auditor charges were paid
<b>Total</b>		1442.31	122.69	

### C. CHALLENGES FACED

1. Cancellation of: International trainings and difficulty in bringing adjunct faculty from US and UK
2. Inability to go for overseas training: Short visit – 2; >50 years of age – 1; <40 years of age – 2 nos.
3. Difficulty in conducting online programmes by international faculty due to time zone difference

### D. PLAN AHEAD (KEY ACTIVITIES) FOR NEXT REPORTING PERIOD

No.	Head of Expenditure	Plan for Expenditure in 2022-23	Time Frame for completion
<b>A</b>	<b>Goods and Equipment</b>		
1.	Equipment, Plant & Machinery		
2.	Office Equipment		
3.	Laboratory Equipment	<ul style="list-style-type: none"> <li>• Procurement of equipment completed as per STEP except for Microscope, which is pending at University Procurement</li> <li>• It will be ensured that procurement of microscope is completed before June 30,2022 (Rs. 160.00 Lakhs)</li> <li>• The balance amount of Rs. 12.00 Lakhs will be utilized to procure additional simulator for Learning and Assessment Centre</li> </ul>	31/07/22
4.	Furniture & Fixtures		
5.	Computers & Peripherals	<ul style="list-style-type: none"> <li>• Procurement has been completed</li> <li>• The balance will be used for purchase of a 3D scanner with accessories for 3D printer will be procured during 2022-23 (Approximate Cost – Rs. 9.00 Lakhs)</li> </ul>	31/07/22
6.	Books & Journals	<ul style="list-style-type: none"> <li>• Procurement of ebooks and Textbooks completed as per STEP. The savings is due to 48% concession given by book sellers for paper print textbooks</li> <li>• Balance will be used for procurement of ebooks</li> </ul>	31/07/22
<b>B.</b>	<b>Civil Works</b>		
1.	Minor repair & renovation work	<ul style="list-style-type: none"> <li>• Renovation of six smart classrooms, Learning and Assessment Centre and three skill labs completed as per STEP</li> </ul>	30/09/22

No.	Head of Expenditure	Plan for Expenditure in 2022-23	Time Frame for completion
		<ul style="list-style-type: none"> <li>The savings amount will be utilized refurbish two more smart classrooms at Madras Veterinary College and one at College of Food and Dairy Technology</li> </ul>	
<b>C</b>	<b>Human Capacity Building</b>		
1.	National Level Training		
2.	International Level Training	<ul style="list-style-type: none"> <li>Till date two faculty have completed two months training and two more have completed four months training</li> <li>Already selection of two faculty for four months have been completed in 2019-20. They have obtained visa but could not go due to Covid 19. (2 X Rs. 15 Lakhs = Rs. 30 Lakhs)</li> <li>Five more faculty have also been selected for two months overseas training. They are waiting for clearance from Washington State University (5 X Rs. 10 Lakhs = Rs. 50 Lakhs)</li> <li>Selection of seven more faculty for four months will be initiated during 2022-23 (7 X Rs. 15 Lakhs = Rs. 105 Lakhs)</li> </ul>	31/03/23
3.	Short Visits / Seminars	<ul style="list-style-type: none"> <li>Till date two faculty have completed short visits to overseas</li> <li>Already two faculty have been selected for short visits (2 X Rs. 4.00 = Rs. 8.00 Lakhs)</li> <li>Two more faculty will be selected for 2022-23 (2 X Rs. 4.00 = Rs. 8.00 Lakhs)</li> </ul>	31/12/22
4.	Meetings and Workshop	<ul style="list-style-type: none"> <li>So far eight workshops have been conducted for the faculty by NAARM</li> <li>Two more workshops will be conducted during 2022-23 (2 X Rs. 2.00 Lakhs)</li> </ul>	30/06/22
<b>D.</b>	<b>Consultancy</b>		
1.	National Level Consultancy	<ul style="list-style-type: none"> <li>Proposal has already been sent to ICAR to reallocate the funds under Operational cost</li> </ul>	
<b>E.</b>	<b>Recurrent Cost</b>		
1.	Travel expenses	<ul style="list-style-type: none"> <li>Will be utilized subject easing of restrictions due to Covid 19</li> </ul>	31/03/23
2.	Contractual Services	<ul style="list-style-type: none"> <li>Unable to fill posts like System Analyst, Instrumentation Engineer, Animation Expert and Video Operator due to refusal of qualified people to work in time bound project.</li> <li>SRF posts (3 Nos.) will be filled up.</li> <li>Data entry operator is already in position.</li> <li>The posts of System Analyst, Computer programmer, Instrumentation Engineer, Animation Expert and Video Operator will not be filled up.</li> </ul>	30/06/22
3.	Operational Expenditure	<ul style="list-style-type: none"> <li>Industrial Training to 55 students @ Rs. 20,000 per student</li> <li>Online Clerkship six @ Rs. 2.00 Lakhs per programme</li> </ul>	31/12/22 31/12/22 31/12/22

No.	Head of Expenditure	Plan for Expenditure in 2022-23	Time Frame for completion
		<ul style="list-style-type: none"> <li>• Skill development workshops for two hundred students</li> <li>• Remedial courses four courses @ Rs. 75,000 per programme</li> <li>• Online Guest Lectures 90 @ Rs. 7,500/- per programme</li> <li>• Overseas training for 50 students for a duration of 60 days @ Rs. 7.00 Lakhs per student</li> <li>• Workshop on Niche areas by international faculty six number @ Rs. 12.00 Lakhs per programme</li> <li>• Insurance (2023-24), AMC charges and accessories for simulators at Learning and Assessment Centre</li> </ul>	<p style="text-align: center;">31/12/22</p> <p style="text-align: center;">31/12/22</p> <p style="text-align: center;">31/03/23</p> <p style="text-align: center;">31/03/23</p> <p style="text-align: center;">30/09/22</p>
F.	Institutional Charges	Will be utilized before 31/3/23	31/03/23



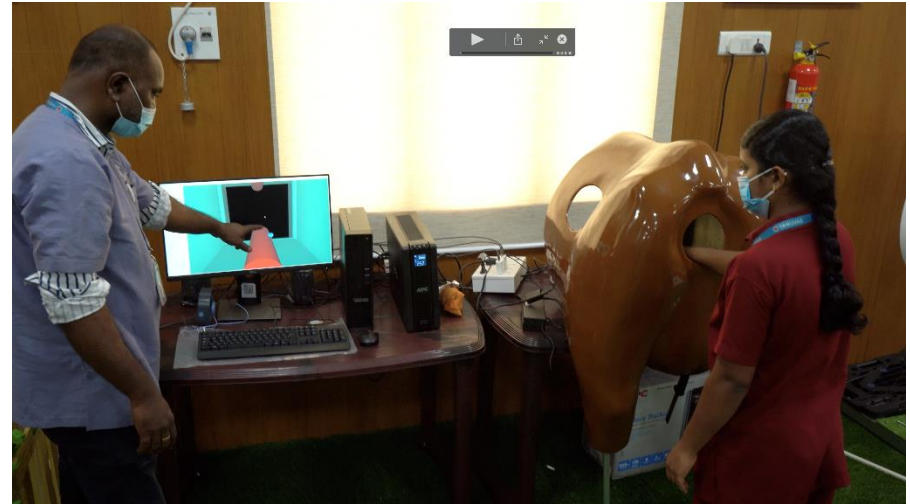
**Clinical Skill learning session @LAC**



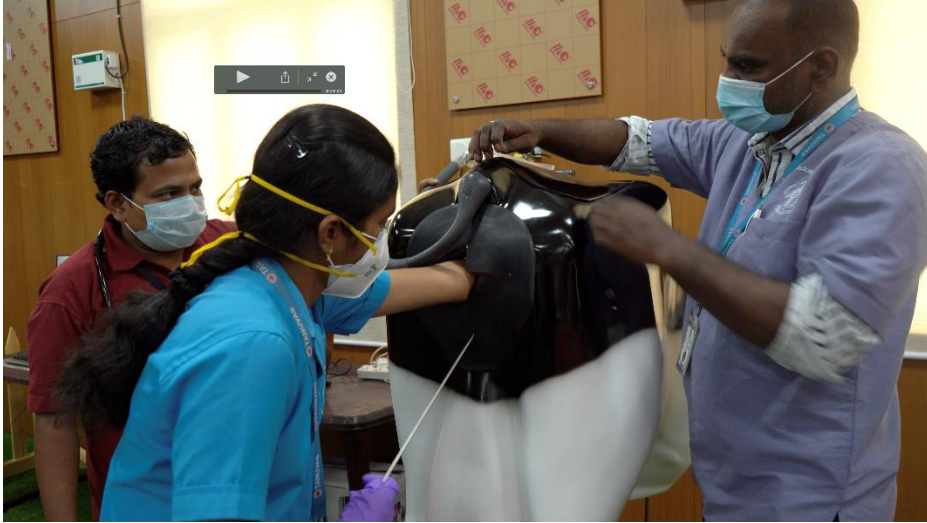
**Respiratory distress learning simulator**



**Calf delivery skill learning @ LAC**



**Haptic cow – learning about ovary @ LAC**



**Artificial Insemination in simulator @LAC**



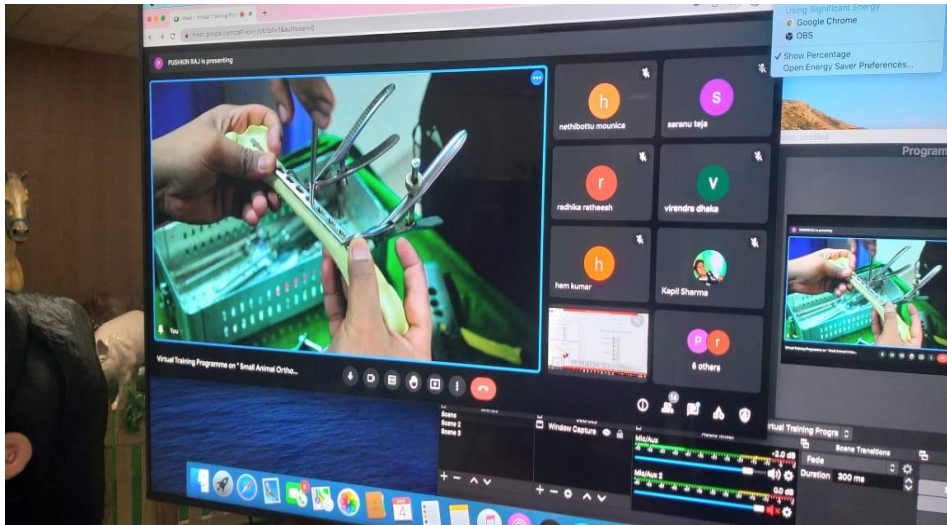
**Bandaging skill learning @ LAC**



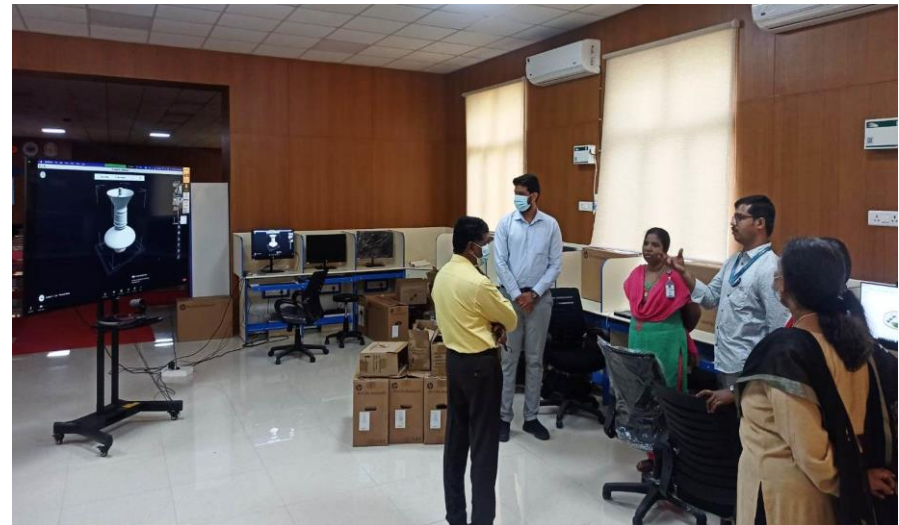
**Eye observation skill learning @ LAC**



**3D printing of heart @ LAC**



**Virtual Training Session of fracture management @LAC**



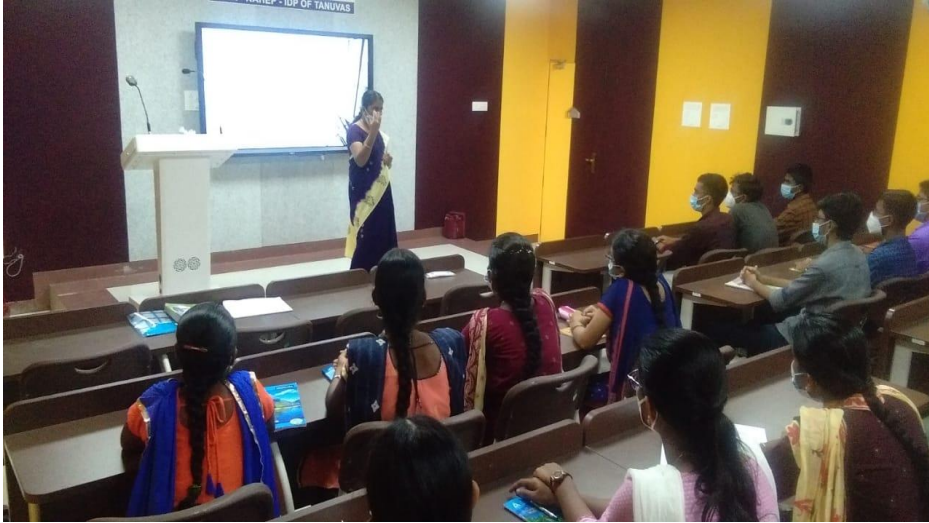
**Faculty training on 3D model development @ LAC**



**VR/AR Virtual Cattle Anatomy – training the faculty**



**3D model of abdomen – Cattle Anatomy @ LAC**



**Remedial Class on English @ VCRI in Smart Classroom**



**An interactive session on Language lab @ LAC**



**Virtual Lab @ LAC**



**Smart Classroom with Lecture capture system**