

Kamdhenu University

REGULATIONS FOR RECOGNITION OF POST GRADUATE COLLEGE OF DAIRY, VETERINARY AND FISHERY SCIENCES TO KAMDHENU UNIVERSITY



KAMDHENU UNIVERSITY
Karmayogi Bhavan, Gandhinagar - 382010

**REGULATIONS FOR RECOGNITION OF INSTITUTES FOR
POST GRADUATE PROGRAMME OF KAMDHENU UNIVERSITY, 2016**

1. Short Title, Extent and Commencement:

- (i) These Regulations shall be called "**Regulations for Recognition of Affiliated Institutes/Colleges for Post Graduate Programme of Kamdhenu University, 2016**".
- (ii) These shall extend to all institutions which are affiliated to Kamdhenu University for Bachelor Degree Programme in Dairy, Veterinary and Fisheries Sciences, shall be given **Recognition for Post Graduate Programme** (Master's and Doctoral Programme) leading to Master (M.Tech, M.V.Sc, M.F.Sc) and Ph.D Degree of Kamdhenu University, 2016 as per ICAR with this University located anywhere within the jurisdiction of the University. i.e., the whole of the state of Gujarat.
- (iii) The Institute/ College having proven labs for more than five years and are accredited by the competent agencies or colleges having five years of affiliation of UG programme under Kamdhenu University shall be given recognition for the Post Graduate Programme.
- (iv) These Regulations will be effective from the date of notification and shall also apply to the institution under the process of recognition and those institution accorded recognition provisionally to Kamdhenu University.

2. Definitions - In these Regulations, unless the context otherwise requires:

- a) The words and expressions shall be the same as defined in the Kamdhenu University Act, 2009.
- b) "Institute" or "Institution" means an institution or organisation registered under the appropriate laws of State i.e. Societies Registration Act, 1860, Bombay Public Trust Act, 1950 etc. or a Company incorporated under the Companies Act, 2013 (Act No. 18 of 2013) as amended from time to time or the State/Central Government institutions and/or a College which has been accorded provisional affiliation/recognition to impart education leading to graduation/post-graduation degree programme.
- c) "Affiliation" means affiliation accorded to a College, whether private or public, by whatever name called, (provisional or permanent, as the case may be) with the University with respect to specific academic programmes;

- d) "PG College" means for the purpose of these Regulations, an institution affiliated to the University for Degree Programme and recognised for providing Master and Ph. D Degree in Dairy, Veterinary and Fisheries Sciences.
- e) "Principal" means head of a Recognised/Affiliated PG College or Institution of Dairy, Veterinary and Fisheries Sciences.
- f) "PG Teacher" means for the purpose of these Regulations, a person, known by any rank, appointed/hired by the Affiliated Institution recognised for conducting PG programme for the purpose of imparting instruction;
- g) "Dean PG Studies" means for the purpose of these Regulations, Director of Research and Dean PG Studies of Kamdhenu University.
- h) "MSHAE" means Minimum Standards of Higher Agricultural Education for Dairy, Veterinary and Fisheries Education (Annexure-II: A, B and C) in terms of infrastructure, laboratories/ field facilities, faculty, manpower and other support so as to firm the guidelines for establishing colleges of Dairy, Veterinary and Fisheries in State Agricultural Universities/State Veterinary Universities/Deemed Universities/Indian Council of Agricultural Research/Central Agricultural Universities.

3. Applicability:

These regulations shall apply to all those institutes as defined in Regulation no. 2(b).

4. General Regulations and Procedure for Affiliation:

- (i) The institute desirous to start a PG College of Dairy, Veterinary and Fisheries Science shall apply to the Registrar in the prescribed Application Form (Annexure-I), which shall be made available at a charge of Rs. 25,000/ (Twenty Five thousand only) in the form of Demand Draft drawn in favour of the Kamdhenu University before 31st March of the year preceding the year from which affiliation is intended to take effect. Late applications shall not be considered.
- (ii) The applicant shall have proven financial capabilities of annual turnover of minimum Rs. Two crore as evident from last three year's Income Tax Returns.
- (iii) The applicant shall have its own buildings and land with undisputed ownership and possession of the buildings and/or land proposed for starting a PG College.

- (iv) The applicants shall have corpus funds of minimum Rs. One crore and shall have minimum 35 acres of contiguous land or as prescribed by the Indian Council of Agricultural Research (ICAR) under its clear title exclusively for the PG College. Documentary evidences and affidavits shall be produced in this regards at the time of application. The affiliation shall not be granted for rented facilities.
- (v) The Institute shall have infrastructure and other facility for the purpose of teaching and practical are as per the Annexure-II: A (Dairy), B (Veterinary) and C (Fisheries) Sciences. The UG resources shall be utilised for the PG programme also.
- (vi) The application received by the Registrar shall be scrutinised by the Scrutiny Committee consisting of following members.

1. Director of Research and Dean PG Studies - Chairman
2. Respective Dean of Faculty (Dairy/Veterinary/Fisheries) - Member
3. Two experts to be nominated by Vice Chancellor
4. Registrar- Secretary

The above said committee shall strictly scrutinise the application in the light of above said clauses of these Regulations and recommend for further necessary actions.

- (vii) Having found satisfactory report of the scrutiny committee, the Registrar on the recommendation of the Scrutiny Committee, shall inform the institute to pay non refundable processing fees of Rs. 1,50,000/- (Rupees One Lac Fifty Thousand only) in the form of Demand Draft drawn in favour of Kamdhenu University.
- (viii) On receipt of the processing fees, the University shall constitute an inspection committee consisting of following members which shall visit the PG institution and will present its inspection report to the University.
1. Director of Research and Dean PG Studies - Chairman
 2. Dean of Respective Faculty - Member
 3. Two experts to be nominated by Vice Chancellor
 4. Executive Engineer of the University or his representative not below the rank of Deputy Engineer
 5. Deputy Registrar - Secretary
- (ix) The inspection committee appointed shall visit the PG institute and inspect all the documents, premises, financial capabilities, available infrastructures, academic and

technical capabilities and other facilities of the institution. The institution shall, besides producing evidences of adequate financial capabilities as provided in the sub rule (iv) shall furnish a bank guarantee of an amount equivalent to six months' salary of teaching and non-teaching staff or a minimum of Rs. 1 Crore only, whichever is higher, in favour of the University within one months of the commencement of the academic session.

- (x) The inspection committee shall submit its report to the Registrar within two months from the date of receipt of non refundable fees along with the requirements mentioned in sub rule (ix). The report shall be placed in the Academic Council in the next meeting for necessary recommendation to the Board of Management of the University.
- (xi) The Board of Management shall accord provisional recognition for one year or reject the application with reasons in writing which shall be conveyed to the applicant by the Registrar. On approval of the provisional recognition by the Board and the Government of Gujarat, the Institute shall have to remit a non-refundable one time recognition/affiliation fees of Rs. 10 lacs (Rupees ten lacs only) in the form of Demand Draft to the University before the beginning of common admission process by the University, failing which the institute will not be permitted to start the academic programme for that year.
- (xii) The renewal of affiliation in subsequent years shall be accorded by the Board of Management on recommendation of the Academic Council and inspection committee as prescribed in sub rule (ix) on receipt of application for renewal from the institute. The inspection committee for renewal of recognition/affiliation shall visit the institution before 30th April of that year on receipt of non refundable inspection fee of Rs. 50,000/- (Rupees Fifty thousand only) by 31st March every year. The fees for visit of inspection committee shall have to be remitted for each such visit of inspection committee. The amount of fees may be revised by University without notice. This will also apply to the institutions under provisional recognition/affiliation until they are permanently recognised/affiliated.
- (xiii) Any institution whose application for recognition/affiliation has been rejected, may apply afresh as per the procedure laid down here in these Regulations.

5. Admission, Fee Structure and Examinations:

- (i) The admission procedure for post graduate degree programmes shall be as provided in the Regulations for the Award of Master and Ph. D. degree.
- (ii) The Institute shall compulsorily participate in centralized admission system and in no case admit students directly on its own.
- (iii) The intake capacity for of an institute affiliated course shall be initially 12 students which may be increased up to maximum of 20 students per year on recommendations of the inspection committee and on approval by the Academic Council.
- (iv) The institution may issue advertisements for promotional purpose but in no case shall issue any advertisement for admission pertaining to concerned academic year.
- (v) The Institute may charge fees to the students as prescribed by the University from time to time.
- (vi) The entire process of conduct of final/end term examinations, evaluation and related issues for the Master and Ph.D. Degree course shall be under the direct control and supervision of the Kamdhenu University.

6. Award of the PG Degree:

After successful completion of the course, the PG degree certificates (provisional or otherwise) shall be issued to the students by the University only.

7. Faculty and Support Staff:

The strength and qualifications of the teaching as well as supporting staff and the conditions governing their tenure of office shall be such as provided in MSHAE for PG education (Master's and Doctorate programs) and same has been placed in the (Annexure-II: A,B and C).

8. Recruitment of Staff:

- (i) The teaching and other technical staff shall be recruited as per the recruitment regulations prescribed by the University;
- (ii) For recruitment of the Principal of the Institution, selection committee which shall include a representative of the University nominated by the Vice-Chancellor;

- (iii) In case of recruitment of a member of the teaching staff of the Institution, a representative of the University nominated by the Vice-Chancellor and the Principal of that Institution shall be members.

- 9. The institute may provide residential accommodation to the Principal and other members of the teaching staff in or near the Institution or the place provided for the residence of students.
- 10. University shall not be responsible for any kind of delay in recognition/affiliation.
- 11. The provisionally recognised/affiliated institute which completes five years shall apply for permanent recognition/affiliation to the University.

12. Regulations for Permanent recognition /Affiliation:

a. Eligibility Criteria for granting Permanent recognition/ affiliation:

- (i) The Institution shall have completed at least five years of satisfactory performance after getting first provisional recognition/affiliation and attained the academic and administrative standards as prescribed by the University from time to time.
- (ii) The Institution must have completed all necessary infrastructure prescribed under the regulations as stipulated from time to time.
- (iii) All the teaching and non-teaching staff is appointed on regular/permanent basis on scale of pay as per ICAR/Government.
- (iv) The recognised/affiliated Institution shall furnish such reports, returns and other information as the Board, after consulting the Academic Council, may require enabling it to judge the efficiency of the College or the institution.

b. Procedure for Granting Permanent Recognition/Affiliation

- (i) Institution which wishes to get permanent recognition/affiliation shall apply to the University any time after completing five years of first provisional affiliation in the prescribed proforma.
- (ii) The procedure for according permanent recognition/affiliation, the proforma for application and inspection fees shall be the same as for granting provisional recognition/affiliation given in the regulations.
- (iii) If the University decides not to recommend for granting permanent recognition / affiliation to the Institution for reasons, to be recorded in writing, of its failure to meet the conditions / requirements for getting such recognition / affiliation, the Institution may apply again as and when it fulfils the conditions / requirements subsequently, but not earlier than six months from the date of rejection of its earlier application.

13. The University shall accord provisional recognition/affiliation to a PG College/ Institution until it fulfils the requirements of permanent recognition/affiliation as mentioned under the rule 12.
14. The institute which is accorded provisional recognition/affiliation is authorized to mention the status in the form of “Provisionally Recognised/Affiliated to Kamdhenu University” on their signboards, letterheads, properties and other such documents.
15. Till a PG College/Institute is permanently Recognised/affiliated to the University as provided in these regulations, the PG College/Institute shall not be authorized to declare its status anywhere as “Recognised/Affiliated to Kamdhenu University”.
16. The recognition/affiliation granted under these regulations is non-transferable.
17. Every recognised/affiliated recognized institution shall comply with the provisions of the Kamdhenu University Act, 2009 (specifically Section 46 to 52 Ch. VIII), and its Statutes, Regulations and Minimum Standards and Norms (Annexure-II), as amended time to time. If any recognised/affiliated recognized institution contravenes then,
 - (i) The rights conferred on such college or institution by the affiliation or recognition shall stand withdrawn from the date of such contravention and such PG college or institution shall cease to be a recognised/affiliated PG College or recognised institution.
 - (ii) The rights conferred on an institution by recognition may be withdrawn or suspended for any period if the institution fails/has failed to observe any of the conditions of its recognition or the institution has conducted in a manner which is prejudicial to the interest of education.
18. The decision of the University for granting or not granting provisional or permanent recognition/affiliation to any institution shall be final.
19. The intellectual property rights (IPR) generated by the research work of the students of college/institute recognised for PG course by the Kamdhenu University shall be governed by the IPR policy of Kamdhenu University.

Minimum Standards and Norms for Recognition/Affiliation of PG College of Dairy, Veterinary and Fisheries Science to Kamdhenu University are as per Minimum Standards for Higher Agricultural Education (MSHAE) ICAR, New Delhi (Annexure-II: A, B and C).

The Education Division, Indian Council of Agricultural Research, New Delhi Constituted Broad Subject Matter Area (BSMA) Committee vide Office order No. F. No. 13 (1)/2007- EQR dated January 14, 2008 to revise the Post-Graduate Curricula & Syllabi on Dairy Science & Technology, Veterinary and Fisheries Science. The broad guidelines recommended in the "New and Restructured Post-Graduate Curricula & Syllabi for the above PG Faculties shall be followed by the affiliating PG College to Kamdhenu University.

The BSMA committee Recommended Post-Graduate Curricula & Syllabi for the following PG courses and the subject discipline are as under:

1. Dairy Science & Technology

(www.icar.org.in/files/edu/Revised-PG...Curricula-and-Syllabi/Dairy%2030.4.2009.pdf)

- Dairy Technology
- Dairy Microbiology
- Dairy Chemistry
- Dairy Engineering

2. Veterinary Clinical Subjects

(www.icar.org.in/files/...PG...Curricula-and-Syllabi/Vety.%20Clinical%2030.4.2009.pdf)

- Animal Reproduction, Gynecology & Obstetrics
- Veterinary Clinical Medicine, Ethics & Jurisprudence
- Veterinary Epidemiology & Preventive Medicine
- Veterinary Surgery & Radiology

3. Basic Veterinary Subjects

(www.icar.org.in/files/...PG...Curricula-and-Syllabi/Vety%20Basic%2030.4.2009.pdf)

- Veterinary Anatomy & Histology
- Veterinary & Animal Husbandry Extension
- Veterinary Biochemistry
- Veterinary Physiology

4. Veterinary Para-clinical Subjects

(www.icar.org.in/...PG...Curricula-and-Syllabi/Vety.%20Para%20clinical%2030.4.2009.pdf)

- Veterinary Microbiology
- Veterinary Parasitology
- Veterinary Pathology
- Veterinary Pharmacology and Toxicology
- Veterinary Public Health

5. Fisheries Science

(www.icar.org.in/files/edu/..PG..Curricula-and-Syllabi/Fisheries%2030.4.2009.pdf)

- Inland Aquaculture, Mariculture, Fresh Water Aquaculture, Post-Harvest Technology/Fish Processing Technology /Aquatic Fish Biology/Fish Microbiology/Fish Hydrography/Fish Extension, Fish Biotechnology. Fish Physiology and Biochemistry, Fisheries Engineering and Technology other related subject discipline.

Annexure - I

Application Form for Recognition of Post Graduate College to Kamdhenu University, Gandhinagar

1. Details of Application Fee (attach Demand Draft)			
(a)	Application fees	Rs. 25,000/- (Twenty Five Thousand only)	
(b)	Application Date		
(c)	D.D./Cheque No		Date
(d)	Name of Bank		
	Please issue Demand Draft in favour of "Kamdhenu University other fund account, Gandhinagar" payable at State Bank of India, Civil Supply Branch, Gandhinagar		
2. Details of Institution (attach relevant attested documents)			
(a)	Name of Institute (Society/Trust/ Institution/ Company/Cooperative)		
(b)	Memorandum of Association and Bye Laws (please attach copy)		
(c)	Details of Registration	Registered Under:	
		Registration No:	
		Date of Registration:	
		Registration Certificate (attach copy): Yes / No	
(d)	Postal Address of Institute (Society/Trust/ Institution/Company/Coope rative)		
(e)	Details of Managing Director/Managing Trustee		

	Name			
	Address			
	Email		Contact No	
(f)	Details of Board of Directors/Trustees (use separate sheet if needed)			
	Sr. No	Name	Contact Details	
	1			
	2			
	3			
	4			
	5			
(g)	Details of Other Activities i.e. Educational / Training Programmes being Run by the Institution. (please attach separate sheet, if required)			
	1			
	2			
	3			
	4			
	5			
3. Details of Financial Resources (attach documentary evidences, affidavits and other relevant proofs of each)				
(a)	Annual Turnover			
	Present Sources of Income			
	Future Sources of Income			

(b)	PAN No.			
(c)	TAN No.			
(d)	Details of last three years Income and Tax paid (Attach IT Returns)			
	Sr. No.	Year	Total Taxable income	Tax paid
	1			
	2			
	3			
(e)	Corpus Fund			
	1	FDR/Bank Deposits	Rs.	
	2	Other Deposits	Rs.	
	3	Other Instruments of Investment	Rs.	
	4	Liquid Fund (attached copy of Bank Passbook)	Rs.	
	5	Statement of Accounts		
4. Proposed PG Programme and Course for which Affiliation is sought: <input type="checkbox"/> Master Degree :.....;.....;..... <input type="checkbox"/> PhD Degree :.....;.....;.....				
5. Full Postal Address of the Proposed College to be Located with Pin code				

	Pin		Contact No.			
6. Land and Buildings (attach copy of ownership rights of land and Title clear certificate of property and plan of buildings)						
A.	a.	Name of Property				
	b.	Survey Number				
	c.	Total Area	Hector:	Acre:	Sq.m:	
	d.	Status of Ownership				
B.	Buildings of Proposed College (please attach Building use permission)					
	Main College Building					
	Principal chamber No. <input type="text"/> Size <input type="text"/> Sqm		Conference/Meeting hall No. <input type="text"/> Size <input type="text"/> Sqm		Administrative office No. <input type="text"/> Size <input type="text"/> Sqm	
	Teaching staff room No. <input type="text"/> Size <input type="text"/> Sqm		Non-teaching staff room No. <input type="text"/> Size <input type="text"/> Sqm		Store room No. <input type="text"/> Size <input type="text"/> Sqm	
	Lecture halls/Class rooms No. <input type="text"/> Size <input type="text"/> Sqm		Multipurpose hall No. <input type="text"/> Size <input type="text"/> Sqm		Library No. <input type="text"/> Size <input type="text"/> Sqm	
	Laboratories No. <input type="text"/> Size <input type="text"/> Sqm		Computer room No. <input type="text"/> Size <input type="text"/> Sqm			
	Amenities					
	Toilets No. <input type="text"/> Size <input type="text"/> Sqm		Rest room No. <input type="text"/> Size <input type="text"/> Sqm		Water room No. <input type="text"/> Size <input type="text"/> Sqm	
	C.	Hostels				
	a.	Category	No of	No of Students	Total	Address

			rooms	per room	capacity			
		Boys						
		Girls						
	b.	Hostel furniture	attach list					
		Location	<input type="checkbox"/> within campus <input type="checkbox"/> outside campus					
		Ownership	<input type="checkbox"/> owned <input type="checkbox"/> rented <input type="checkbox"/> leased					
D.	Students amenities							
	a.	Sport complex						
		i.	Play ground area_____ sq.m					
		ii.	Outdoor sports facility:_____,_____,_____, _____,_____,_____					
		iii.	Indoor sports facility:_____,_____,_____, _____,_____,_____					
		iv.	Sports equipments: attach list					
	b.	Student bus: <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, Owned <input type="checkbox"/> or Rented <input type="checkbox"/>						
7. Management of the College								
A.	Details about the Principal and teaching staff if appointed (Attach documentary proofs of qualifications and experience for each staff. Use extra sheet for detail information)							
	Sr.	Name	Designations	Qualifications	Experience			Pay scale
					Y	M	D	

B.	Non-Teaching staff (Use extra sheet if needed)							
	Sr.	Name	Designations	Qualification	Experience			Pay scale
					Y	M	D	

List of documents enclosed:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

DECLARATION

On behalf of the _____ (name of society / trust/ organization), I _____ Son/daughter of _____ r/o _____ do hereby declare that the particulars furnished above in the application for grant of recognition/affiliation of _____ (name of the PG College) to Kamdhenu University, are correct to the best of my knowledge and belief, and if any of the particulars furnished are found to be false or misleading I am liable to penalty and/or legal action by the Kamdhenu University. I also further declare that I shall abide by the conditions, rules and regulations of the University as amended from time to time for granting affiliation to establish and run this PG College of _____ and maintain the academic standards as per the directives of the University.

Place.....

Date:

.....
Signature of the applicant
(Authorised Signatory with official seal)

Place.....

Date:

.....
Managing Director/Chairman/Trustee
(Authorised Signatory with official seal)

Note:

- The application, incomplete in any respect, will not be considered.
- The application not accompanied by the declaration and the undertaking as per format given on the following pages will not be considered.
- All correspondence shall be addressed to the Registrar, Kamdhenu University, Block-1, B-1 wing, 4th floor, Karmayogi Bhavan, Sector-10-A, Gandhinagar-382010, Gujarat.

UNDERTAKING

(To be submitted along with the application form on a non-judicial stamp paper of Rs. 1000/- duly attested by first class executive magistrate)

I _____ S/O _____ resident
of _____ on behalf of (Institution
name) registered office at _____ solemnly
declare that:

1. I have applied for affiliation of institute (named below) for award of the **Post Graduate College for Masters/Doctorate Degree Programme :.....** to the Kamdhenu University, Gandhinagar on the prescribed form along with prescribed fee.
2. Detailed infrastructure facilities etc. are given in Annexure-II entitled on its page- **Minimum Standards and Norms for Recognition/Affiliation of PG College to Kamdhenu University** consisting of total.....pages, duly filled in on behalf of me.
3. On behalf of the Applicant Body, of which I am authorized representative, I have full knowledge of the norms of the Kamdhenu University, Gandhinagar.
4. On behalf of the Applicant Body, of which I am authorized representative, I am fully aware that the degree programme, to which the Applicant Body, of which I am authorized representative, has applied, is governed by the norms of the Kamdhenu University, Gandhinagar.
5. On behalf of the Applicant Body, of which I am authorized representative, I declare that it shall be binding on the Applicant Body to fully, in letter and spirit, to follow the norms of affiliation to the Kamdhenu University, Gandhinagar, as laid down at present as well as in future.
6. On behalf of the Applicant Body, of which I am authorized representative, I declare that it shall be binding on the Applicant Body to fully, in letter and spirit, to abide by the guidelines/advises/directives etc. provided by the Kamdhenu University including their authorities.
7. On behalf of the Applicant Body, I also assure that the directions in regard to Academic Programmes including examinations would be followed *in toto* as per the rules and regulations of Kamdhenu University amended from time to time.

8. On behalf of the Applicant Body, I will abide by all the Rules and Regulations of affiliation and instructions given by the University from time to time.
9. Details of management committee members along with verified address (by revenue officer) and their photographs are provided in Annexure-III (attach additional sheet).
10. I hereby declare that the said PG College / Institute (which has applied for affiliation) shall abide all the rules and regulations, orders, instruction *etc.* issued by the University and also framed by in the future, failing which the University reserves the right to withdraw the affiliation.
11. The above information in Para 1 to 10 is correct to the best of my knowledge and nothing, herein, has been concealed.

Annexure enclosed with it:

(a)	Annexure-I	Prescribed Application Form duly filled and signed.	YES/NO
(b)	Annexure-II	Detailed information's (infrastructure, laboratories/ field facilities, faculty, manpower and other support) as required in the Application Form and as per the MSHAE standards and norms for the PG college.	YES/NO
(c)	Annexure-III	The details of management committee members along with verified address (by revenue office) and their photographs.	YES/NO

Place.....

.....

Date:

Signature of the applicant
(Authorised Signatory with official seal)

Witness 1:

Witness 2:

Name:

Name:

Father's name:

Father's name:

Full Address:

Full Address:

Annexure-II (A)

Minimum Standards for Establishing a College/Institute of Dairy Technology in State Agricultural Universities/ICAR Institutes/Deemed Universities

1. Divisions/Section: Five Divisions and One Section

Sr. No.	Departments
1.	Dairy Technology
2.	Dairy Engineering
3.	Dairy Chemistry
4.	Dairy Microbiology
5.	Dairy Trade and Dairy Business Management
6.	Pilot Dairy Unit cum Business Process Development Centre

2. Undergraduate and Postgraduate Degrees Nomenclature

Level of Program	Nomenclature
Undergraduate	B.Tech (Dairy Technology)
Postgraduate Degrees	M.Tech (Dairy Technology)
	M.Tech (Dairy Engineering)
	M.Tech/M.Sc.(Dairy Chemistry)
	M.Tech/M.Sc.(Dairy Microbiology)
Doctoral Degrees	Ph.D (Dairy Technology)
	Ph.D (Dairy Engineering)
	Ph.D (Dairy Chemistry)
	Ph.D (Dairy Microbiology)

3. Eligibility Criteria

B.Tech. (Dairy Technology)	The eligibility for admission is 10+2 or its equivalent examination with Physics, Chemistry, Mathematics and English from a Board/ University recognized by the Institute. Only those candidates who have obtained at least 50% marks or equivalent G.P.A. in the aggregate of Physics, Chemistry and Mathematics are eligible for admission to B.Tech. (Dairy Technology).
M.Tech. (Dairy Technology)	B.Sc. Dairying/B.Sc. Dairying (DT)/B.Tech. (DT) B.Sc. Food Tech./B.Tech. Food Tech. (4 years degree) B.Sc. (Microbial & Food Tech.) - 4 years degree
M.Tech. (Dairy Engineering)	B.E./B.Sc.(Engg.) B. Tech./(Agricultural/AMIE, Chemical, Electrical/Mechanical B.Sc. Dairying/B.Tech. (DT) B.Tech. (Food Engineering & Technology/Food Process Engineering/ Food Technology- with 4 year degree

M.Tech./M.Sc. (Dairy Chemistry)	B.Sc. Dairying/ B.Sc. Dairying (DT)/B.Tech. (DT) B.Tech/B.Sc. Food Tech./ Food Sci.and Technology B.V.Sc. & A.H. / B.Sc. (Ag.) B.Sc. Honours(Chemistry) B.Sc. Microbiology/ Biotechnology/ Biochemistry B.Sc. with Chemistry and any two of the following: Botany, Zoology, Genetics, Microbiology, Mathematics, Physics and Dairy Science, Biotechnology, Industrial Microbiology, Food Science & Quality Control, Biochemsitry
M.Tech./M.Sc. (Dairy Microbiology)	B.Sc. Dairying/ B.Sc. Dairying (DT) B.Tech. (DT) B.V.Sc./B.V.Sc. & A.H./ B.Sc. (Ag.) B.Sc. Microbiology/Industrial Microbiology/Medical Microbiology. Microbial & Food Technology/Food Tech./Food Science (from SAUs only) B.Sc. (Hons.) Microbiology/ Biotechnology B.Sc. with Zoology and any two of the following: Chemistry, Genetics, Microbiology, Biochemistry
Ph.D. (Dairy Microbiology)	<ul style="list-style-type: none"> • M.Sc./M.Tech. Dairying (Dairy Bacteriology/ Dairy Microbiology) • M.Sc. (Microbiology/Microbial Technology/ Applied Microbiology and Biotechnology/ Medical Microbiology/Industrial Microbiology/Microbial& Food Technology//Biotechnology) • M.Sc. (Ag). Microbiology • M.V.Sc. (Bacteriology/Microbiology) • M.Sc. Hons. (Microbiology)
Ph.D. (Dairy Chemistry)	<ul style="list-style-type: none"> • M.Sc. Dairying/M. Tech. Dairying (Dairy Chemistry / Quality Control/Dairy Technology) • M.Sc. Agric. (Dairy Sci./Animal Husbandry & Dairying) • M.Sc. Chemistry/Applied Chemistry • M.Sc./M.Tech (Food Science/Food Technology/Food Science & Technology). • M.Sc. Animal Biotechnology • M.V.Sc. (APT/LPT) • M.V.Sc. Biochemistry/Biotechnology
Ph.D. (Dairy Technology)	<ul style="list-style-type: none"> • M.Sc. Dairying/M.Tech. Dairying (Dairy Tech./ Dairy Engg./ Dairy Chemistry/ Dairy Microbiology) with B.Tech./ B.Sc. (Dairy Technology) • M.Sc./ M.V.Sc. (Dairy Science/ Dairy Technology) • M.Sc. Agri. (Dairy Science) with at least 5 years experience in teaching dairy technology) • M.Sc. (Food Sci.)/M.Sc. (Food Tech.) with UG Degree in Dairy Tech./Food Tech./ Food Sci. • M.Sc. (Dairy Sci.)/M.Sc. Agric. (AH&D) with specialization in Dairy Sci. with at least 5 years experience in teaching Dairy Technology or working in a dairy plant.
Ph.D. (Dairy Engineering)	<ul style="list-style-type: none"> • M.Tech. Dairying (Dairy Engineering) • M.Tech. (Agril./Agril. Process, Chemical, Dairy,Dairy & Food,

	Electrical, Mechanical, Post Harvest Engg.) • M.Sc./M.Tech. Biotechnology with Bachelor's Degree in Engineering
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4. Medium of Instruction: English

5. In order to get quality students for B.Tech (DT) course, it is necessary to have common criterion for admission of students. It is suggested to admit the students using AIEEE merit list.

6. Minimum Intake

Degree	Discipline	Minimum Intake/Year
B.Tech	Dairy Technology	40
M.Tech	Dairy Technology	5
M.Tech	Dairy Engineering	5
M.Tech/M.Sc.	Dairy Chemistry	5
M.Tech/M.Sc.	Dairy Microbiology	5
Ph.D	Dairy Technology	5
Ph.D	Dairy Engineering	5
Ph.D	Dairy Chemistry	5
Ph.D	Dairy Microbiology	5

7. Land Requirements

- ☐ Main building and hostels: 4 ha
- ☐ Field area: 10 ha
- ☐ Play grounds: From common facility of the institute
- ☐ **Total: 14 ha**

8. Manpower Requirements of Dean's Office

Designation	No. of position
Dean	1
A. Establishment	
PA to Dean	1
Administrative Officer	1
Assistant Comptroller/Assistant Accounts Officer	1
Superintendent	1
Steno/Computer operator	4
Assistant	1
Operator (Audio Visual)	1
Attendants/Messengers	4
Clerk (LDC)	4
Electrician	1

Store Keeper	1
Driver	4
B. Dairy Plant and Business Incubation Centre, Laboratories,	
Manager, Pilot plant/ Business Incubation Centre	01
Laboratory Technician for the college	06
Plant Supervisors/Technical Assistants (Dairy Processing-10, Refrigeration-2, Electrical-2)	14
Plant Operators (Processing-6, Boiler-2Refrigeration-2,)	10
Mechanical Draftsman	1
Jr. Mechanic/wireman	1
Fitter	1
Steno/PA	01
Assistant	01
Computer operator	02
LDC	01
Attendants	02
C. Library	
Assistant Librarian	1
Library Assistants	1
Clerks	1
Shelf Assistants	1
D. Students Welfare	To be provided by the University as Central Facility
E. Hostel Staff for Two Hostels	
Warden	1+1
Hostel Superintendents	2
Clerks	2
Attendants	8
Security, Sanitation and Landscaping	To be outsourced

Faculty Requirements for the Departments

Division/Section	Faculty			Total
	Professor	Associate Professor	Assistant Professor	
Dairy Technology	1	2	6	9
Dairy Engineering	1	2	6	9
Dairy Chemistry	1	2	3	6
Dairy	1	2	3	6

Microbiology				
Dairy Business Management	1	2	2*	5
Total	5	10	20	35

*One each in Dairy Economics and Dairy extension; Supporting subjects will be taught by other faculty in the university

9. Administrative and Supporting Staff for Divisions/Section

Sr. No.	Division/ Section	Steno/PA/ Computer Operator (9,300-34,800 +GP 4,200)	Assistant (5200-20200 +GP 2800)	Attendant/ Messenger (5200-20200 +GP 2800)	Clerk (9,300-34,800 +GP 4,200)	Laboratory Assistant/ Attendant (5200-20200 +GP 2800)
1	Dairy Technology	2	1	2	1	2
2	Dairy Engineering	2	1	2	1	2
3	Dairy Chemistry	2	1	2	1	2
4	Dairy Microbiology	2	1	2	1	2
5	Dairy Business Management	2	1	2	1	2
Total		10	5	10	5	10

10. Faculty Expertise

Division/Section	Faculty Expertise	
	Core	Associated
Dairy Technology	Dairy Processing Food Technology	Cheese and Fermented Dairy Products Traditional Dairy Products Packaging Sensory Science Rheology
Dairy Engineering	Dairy Engineering	Food Process Engineering Thermodynamics Civil Engineering Mechanical Engineering
Dairy Chemistry	Dairy Chemistry	Analytical Techniques
Dairy Microbiology	Dairy Microbiology	Microbial Techniques
Dairy Business Management	Dairy Economics Dairy extension	Business Management

11. Central/Division/Section Laboratories (as per requirements of the teaching and research work of the college)

Division/Section	Laboratory
Dairy Technology	Product Development Laboratory Product Characterization and Rheology Packaging Laboratory Sensory Evaluation Laboratory Central Instruments Laboratory Food Technology Laboratory
Dairy Engineering	Bioprocess Engineering Laboratory Fluid Mechanics Laboratory Heat Transfer Laboratory Refrigeration and Air Conditioning Food Engineering Laboratory Thermodynamics Laboratory Electrical Laboratory Instrumentation and Control Laboratory Dairy Engineering Workshop
Dairy Chemistry	Dairy Food Analysis Laboratory
Dairy Microbiology	Dairy Food Quality and Safety Laboratory
Dairy Business Management	Computer Laboratory Audio-Visual Laboratory Language Laboratory

12. Floor Space Requirements

Central Facilities

S. No.	Details	Number of Rooms	Dimensions
1.	Dean office	1	20' x 24'
2.	PA room	1	20' x 12'
3.	Committee room with video conferencing facility	1	20' x 48'
4.	Administrative officer room	1	20' x 12
5.	Admin. staff rooms	3	20'x36' each
6.	Examination hall	1	20' x 12'
7.	Evaluation room	1	20' x 36'
8.	Faculty room	1	20' x 12' each
9.	Placement cell	1	20' x 48'
10.	Smart Lecture rooms	5	Seating capacity - 50
11.	Auditorium (Optional)	1	Seating capacity-300
12.	Library/Book bank	1	30'x72'
13.	Examination hall (optional)	1	Seating capacity - 300

14.	Multipurpose room	1	20'x36'
15.	Laboratories	4	30' x 48' each
16.	Hostels	2	Boys and Girls
17.	Generator Shed	1	20' x 36'
18.	Toxic chemical storage and waste unit	1	20' x 24'
19.	Canteen	1	20' x 12' (kitchen) & 20 x 36' (sitting)
20.	Toilets	-	2sets for each floor
21.	Parking space	As per requirement	Office and Hostels
22.	Vehicles: Office car Staff car/Jeep Bus Pick-up van	1 3 1 1	-

Division/Section

Sr. No.	Details	No. of rooms	Dimensions
1.	Office of the Head of Division (05)	05 One for each division	20' x 24' each
2.	Administrative staff	05 (one for every Division)	20' x 36' each
3.	Faculty room	26	20' x 24' (05 rooms) 20' x 12' (21 rooms)
4.	Room for research scholar	04 (one for every Division)	20' x 24' each
5.	Committee room cum library	05 (one for every Division)	20' x 36' each
6.	Smart lecture cum seminar room	05 (one for every Division)	Seating capacity - 50 each
Laboratories (no. of laboratories as per requirement and include UG and PG teaching laboratories)			
7.	Dairy Technology	05	20' x 60' (one) 20' x 36' (four)
8.	Dairy Engineering	09	20' x 60' (two) 20' x 36' (seven)
9.	Dairy Chemistry	04	20' x 60' (one) 20' x 36' (three)
10.	Dairy Microbiology	03	20' x 60' (one) 20' x 36' (two)
11.	Dairy Business Management	04	20' x 60' (two) 20' x 36' (two)

Dairy Plant and Business Incubation Centre

Details	Dimensions
Raw Milk receiving Dock, Milk storage tank room, Milk Processing Hall, Cheese Room, Milk Condensing & Drying Plant room, Cheese Drying & Curing room, Milk Cold Store, Ice Cream Hardening Room, Dispatch Dock, Milk Bottling / Pouch Filling Room, Food processing section (Vegetable/cereal/meat processing) Boiler House, Refrigeration & Ice Bank, System room, Store room – Products, Store room – chemicals & accessories, Sales Counter, Office of the Head of the Department, Offices for the Teaching Staff - Assistant professor, Associate Professor, Offices for the Technical Staff – Boiler Attendant, Refrigeration Attendant, Fitter, Office for the Ministerial Staff & Driver, Wash rooms– Staff & Students (both for Male & Female)	200' x 72'

13. Equipment required

UG/PG Laboratories

Sr. No.	Name	Number
1.	UV-Vis Spectrophotometer	02
2.	Analytical balances	04
3.	Electronic balances	04
4.	Muffle furnace	02
5.	Automatic titrator	01
6.	Soxhlet instrument	01
7.	Gerber centrifuge	02
8.	pH meter	04
9.	Autoclave	02
10.	Laminar flow/Biosafety cabinet	02
11.	BOD Incubator	02
12.	Simple microscope	01
13.	Simple oil immersion microscope	01
14.	Hot air oven	04
15.	Hot water batch	04
16.	Serological bath	02
17.	Centrifuge	01
18.	Low temperature centrifuge	01
19.	Pipette washer	02
20.	Rotary shaker	01
21.	Gas supply and burners	01
22.	Standard assembly for titrimetric analysis with indicator solutions & buffer tablets; Magnetic stirrer; Cyclomix (vortex mixer)	All items: 02 each

Central Instrument Facility:

Sr. No.	Name	Number
1.	High pressure Liquid Chromatography	01
2.	Atomic absorption spectrophotometer	01
3.	Hunter LAB Colorimeter	01
4.	Instron Texture Analyzer	01
5.	IR Moisture analyser	01
6.	Water activity meter	01
7.	Flame photometer	01
8.	Rheomat	01
9.	Viscoamylograph	01
10.	Bench-top Microfluidizer	01
11.	Rotary evaporator	01
12.	Differential Scanning Calorimeter	01
13.	Refrigerator	01
14.	Deep freezer	01
15.	Kjeltec	01
16.	Fibretec unit	01
17.	Rancimat	01
18.	Millipore water purifier	01
19.	Low temperature bath	01

Packaging Laboratory:

Sr. No.	Name	Number
1.	Weighing balance (Accuracy 0.001 g)	02
2.	Micrometre	04
3.	Mullen Bursting strength tester	01
4.	Mechanical drop tester	01
5.	Compression strength tester	01
6.	Smoothness or porosity tester	01
7.	Cobb tester	01
8.	Elmendorf tear tester	01
9.	Water absorption tester	01
10.	Head space analyser	01
11.	Universal testing machine	01

<i>Barrier testing instruments</i>		
12.	Oxygen	01
13.	Carbon dioxide	01
14.	water vapour transmission tester	01

Pilot Plant cum Business Incubation Centre for Dairy and Food Processing

Sr. No.	Name	Number
1.	Milk reception section	01
2.	Liquid milk processing unit	01
3.	Cream processing , butter and ghee Section	01
4.	Powder reconstitution & milk poly pack section	01
5.	Paneer section	01
6.	Curd/Lassi/Chhach Section	01
7.	Ice cream section	01

The total production line to be developed for the Dairy Unit (10,000 LPD) is illustrated in the table below

Sl.No.	Product to be manufactured	Quantity of Milk
1.	`Liquid milk (Different qualities) of milk such as full cream, Standardized milk, Toned milk, double toned, milk as per the requirement by PDP	2,500 litres
2.	Paneer/Cheese/Shrikhand/Chhana (Production and Channa based sweets packaging)	1000 litres
3.	Curd/Lassi/Chhach/Yoghurt	1000 litres
4.	Ice-cream (1000 litres mix)	1000 litres mix
5.	By-Products:casein, caseinates, whey products, etc.	500 litres (only for practical purpose)
6.	Heat desiccated products (Khoa, Khoa based sweets like Gulabjamun, Peda, Phirni, Rabri, Kurchan, Kheer, etc.)	500 litres (For practical purpose & also for marketing as per demand)
7.	Fat rich products Butter, Ghee, etc.	Regular production from cream obtained from market milk industry

Major Common Pilot Plant Equipment:

Sr. No.	ITEM	Numbers	Capacity
1	Milk Weighing Scale	1	0-100 kg
2	Bulk Cooling Tank	1	1000 L

3	Can Washer	1	5 cans/hr
4	HTST Plate Heat Exchanger	1	500 L/hr
5	Batch Pasteurizer	1	500 L
6	Homogenizer	1	500 L/hr
7	Milk Storage Tank	2	1000 L each
8	Milk Bottling Plant	1	10 bottles/min
9	Butter Churn	1	100 kg
10	Ghee Boiling Vat	1	100 kg
11	Ice cream Freezer - Batch	1	20 kg/batch
12	Cheese Vat	3	200 L each
13	Cheese Cutting Frame	3	1 X 3 ft size
14	Cheese Press	1	6 block
15	Milk Condensing Unit	1	40 kg water evaporation/hr
16	Spray Drying Unit	1	5-10 kg water evaporation/hr
17	Refrigeration Plant	1	10 Ton
19	Portable Weighing Scale	2	5 kg
19	Curd Mill	1	-
20	Cheese Hoop	6	20 kg size
21	Milk Cans	50	40 kg each
22	Auto Clave	1	-
23	Ice Water Plant	1	5 Ton
24	Cheese Block Cutter	1	-
25	Sieve for Shrikhand	2	-
26	Planetary Mixer	1	10 kg
27	Hand Bottle Filler	1	-
28	Can Scrubber Tank	1	-
29	Pouch Filling Machine	1	100 pouch/hr
30	Cream Separator	1	500 L/hr
31	Butter Trolley	1	50 kg
32	Wet Casein Grinder	1	5 kg/
33	Casein Shredder	1	5 kg
34	Casein Dryer	1	5 kg/batch
35	Bottle Sterilizer	1	40 bottles/batch
36	Khoa Kettle	1	10 kg/batch
37	Colloidal Mill	1	1 kg/min
38	Crown Capping Machine	1	Manual
39	Sugar Grinder	1	5 kg
40	Tin Seamer	1	Manual
41	UF Cum RO Unit	1	50 kg/hr
42	Crates For Milk Bottles	100	10 kg each
43	Deep Freezer	4	-
44	Gerber Centrifuge	2	24 tubes
45	BOD Incubator	2	-
46	Hot Air Oven	2	-

47	Hot Plate	1	-
48	Magnetic Stirrer	1	-
49	Colony Counter	1	-
50	Weight Box	1 set	100 g
51	Paraffin Bath	1	50 kg
52	Vacuum Packaging Machine	1	5 kg/batch
53	Milk Analyser	1	-
54	Ice Cream Freezer - Continuous Type	1	50 L/hr
55	Cooling Unit For Cheese Curing Room	1	2 tonnes
56	Candy Making Machine	1	50 candy/batch
57	Candy Moulds	10	24 x 100 ml
58	Vacuum Tray Dryer	1	-
59	Extruder	1	-
60	Ice Cream Cup Filling Machine	1	100 cups/hr
61	UHT Milk Sterilization Unit with Aseptic Packaging	1	100 L/hr
62	Tray sealing machine	01	-
63	Colloid Mill	01	-
64	Hammer mill	01	-
65	Planetary mixer	01	-
66	Pin mill	01	-
67	Homogenizer	01	-
68	Steam Jacketed Kettle	03	-
69	Refrigeration System For Ice Cream Hardening Room	1	2 tonnes
70	Processed Cheese Kettle	1	5 kg
71	Steam Boiler	2	500-1000 kg steam/hr
72	Diesel power generator	01	125 KWA
73	Effluent Treatment Plant	1	-

Equipment for Fruit and Vegetable Processing:

Sr. No.	Name	Number
1.	Fruit pulper	01
2.	Screw juice extractor	01
3.	Bottle filling machine	01
4.	Mechanical peeler	01
5.	Peeling knives	Complete set
6.	Slicing knives	Complete set
7.	Mechanical slicer	01
8.	Basket press	01
9.	Plunger press	01
10.	Autoclave	01
11.	Can sealer	01

Equipment for Processing of Cereals, Pulses and Oilseeds:

Sr. No.	Name	Number
1.	Dehuller	01
2.	Screw expeller	01
3.	Paddy sheller	01
4.	Corn degermer	01
5.	Popping unit	01
6.	Flaking roller	01
7.	Mini flour mill	01
8.	Pasta making machine	01
9.	Deep fat fryer	01

Equipment for Bakery and Confectionary Products:

Sr. No.	Name	Number
1.	Moulding unit	01
2.	Baking oven	01
3.	Sugar grinder	01
4.	Biscuit baking unit	01
5.	Proofing unit	01
6.	Slicing unit	01
7.	Chocolate moulder	01

Equipment for Meat and Fish processing (Optional):

Sr. No.	Name	Number
8.	Bowl chopper	01
9.	Meat mincer	01
10.	Sausage filler	01
11.	Ice flaking machine	01
12.	Chopping table	01
13.	Combo microwave	01
14.	Tumblers	01
15.	Molds for hams	01
16.	Heating kettle	01

Equipment for Dairy Engineering Division:

Sr. No.	Name	Number
1.	Orifice and Mouthpiece apparatus	02
2.	Pipe friction apparatus	01
3.	Minor head loss apparatus	01
4.	Flow through channel apparatus	01
5.	Computerized centrifugal pump test rig	01
6.	Rotameter	02
7.	Water flow meters	02

8.	Reynolds apparatus	01
9.	Bernoulli's apparatus	01
10.	Various types of pipe fittings and valves	02 set
11.	Self priming pump	02
12.	Monoblock pump set	02
13.	Submersible pump	01
14.	Powder conductivity meter	01
15.	Computerized counter and parallel flow apparatus	01
16.	Plate Heat Exchanger	01
17.	Steam Jacketed kettle	01
18.	Stefan Boltzmann Apparatus	01
19.	Jacketed vats	02
20.	Heat Transfer through composite wall	01
21.	Heat Transfer through Natural Convention	01
22.	Critical Heat Flux Apparatus	01
23.	Heat Transfer through lagged pipe	01
24.	Digital temperature indicators with probes	05 set
25.	Multi Channel temperature indicator	02
26.	Solar water heating system	01
27.	Computerized refrigeration tutor	01
28.	Computerized air conditioning tutor	01
29.	Water cooler	01
30.	Window AC	02
31.	Split AC	02
32.	Refrigerator	01
33.	Models of sealed and open type compressor	01 set
34.	Refrigeration plant controls such as thermostat, pressure switches, solenoid valves, expansion valves	01 set
35.	Dessert cooler	02
36.	Dehumidifier	01
37.	Food Processor	01
38.	Texture Analyzer	01
39.	Laboratory scale freeze dryer	01
40.	Try dryer	01
41.	Texturometer	01
42.	Juice extractors	01

43.	Extruders	01
44.	Sulfuring chamber	01
45.	Blanching equipment	01
46.	Clinching equipments	01
47.	Jacketed kettle	01
48.	Bomb calorimeter	01
49.	Flue gas analyzer	01
50.	Bucket calorimeter	01
51.	Baby boiler	01
52.	Models of boiler mountings and accessories.	01 set
53.	IC Engine test rig	01
54.	Steam flow meter	02
55.	Water flow meter	02
56.	Models of two stroke and four stroke engine	01 each
57.	Different types of steam traps	02 set
58.	Pipes and pipe fittings	As per the requirements
59.	Oil and gas burners	01 each
60.	Water softening plant	01
61.	Boiler feed water pump	01
62.	Digital clip-on-meters	02
63.	Digital Energy analyzer	01
64.	Power measuring instruments such as volt meter, ampere meter, energy meter, meger	05 set
65.	Inverter	01
66.	Induction Motors with starters	02
67.	Variable Frequency Drive	02
68.	Single phase Transformer, 2 kVA	02
69.	Digital three phase Energy meter	02
70.	Different types of starters such as direct on line starter, star delta starter, Auto-transformer starter etc.	02 set
71.	Experimental set up for experiment in parallel & series connection, stair case wiring, tube light wiring, motor connection, speed measurement, demonstration of winding etc with necessary power, voltage, and current measuring devices.	02 set each
72.	Hand tachometer	02
73.	Non contact type tachometer	02
74.	Soft starter	02

75.	Air anemometer	01
76.	Magnetic flow meter	02
77.	Digital pocket type thermometers with different types of probes	05
78.	Multi channel data logger	01
79.	Various tutors/transducers such as Strain gauge, pressure, LVDT, Inductive, Photo cell, piezometer, etc.	01 set
80.	Water Level controller	01
81.	Pneumatic controller	01
82.	PID controller temperature controller system	01
83.	Digital Tachometer	01
84.	Lux meter	01
85.	Solar lighting system	02
86.	Lathe Machine	01
87.	CNC lathe	01
88.	Grinding machine	01
89.	Power saw	01
90.	Drilling machine	01
91.	Pipe bending machine	01
92.	Electric welding machine	01
93.	Portable welding machine	01
94.	Gas welding set	01
95.	Shear cutting machine	01
96.	Threading machine	01
97.	Universal wood working machine	01
98.	Bench vice	20
99.	Portable grinding machine	02
100.	Shaping machine	01

Dairy Trade and Business Management Division:

Sr. No.	Name	Number
1.	Desk top computers with LAN facility and Internet connection	20
2.	Photocopier	03
3.	Laser Printer	06
4.	Colour Laser Printer	01

5.	Softwares: SPSS/Metlab/Design expert	01 each with multiuse license
6.	Indian patent database	01

Annexure-II (B)

Minimum Standards of Higher Agricultural Education (MSHAE) (Discipline- Veterinary and Animal Sciences)

After having carefully dwelled over the issues of working out the Minimum Standards of Higher education in the field of Veterinary Sciences, wherein the Govt. of India has created a statutory authority-the VCI to prescribe minimum standards of veterinary education (MSVE) Regulations, under IVC Act, 1984, the committee while giving cognizance to the statutory provisions, made the following recommendations.

Recommendations

A. BVSc & AH degree course

1. The Veterinary Council of India (VCI) –a statutory body of the Central Government is empowered to lay down the Minimum Standards of Veterinary Education –BVSc & AH degree course, Regulations as per the Section 22 of the Indian Veterinary Council Act, 1984(IVC Act). Under the power vested to it, the VCI had laid down MSVE, Regulations, 1993 which were revised in 2008. These regulations are mandatory to be adopted by all veterinary colleges awarding BVSc & AH degree course in the States and UT where the Act has been extended. Since the Central Government through the VCI is empowered to recognize veterinary qualification granted by veterinary institution on the basis of laid down standards, the committee feels that no action is called for in this direction. However, since the VCI/ Central Government has to consult ICAR for bringing any amendment to be made effective to the MSVE, Regulations under section 22 of the Act, the ICAR may send proposals for updating MSVE, Regulations to make it more relevant to the present day context.

B. PG Education (MVSc and PhD)

The committee has thus dealt with the formulation of Minimum Standard of PG education in the field of Veterinary and Animal Sciences while keeping MSVE, Regulations 2008 of the VCI in view.

B. 1 It should be considered pre-requisite for the college/university/ institute offering or proposing to start PG programs-MVSc and or PhD (other than exclusive PG institutes) to have in place requisite facilities to impart UG education as per the prescribed standards of VCI. Further, any department/ institution offering PG programs must fulfill the following basic qualifying conditions to be designated as PG department/ institute.

- **Manpower:** Manpower needs must be meticulously calculated. After having satisfied with the teaching needs of UG education on the basis of work load of existing teachers and giving margin for additional load for UG program, rest of the manpower could be utilized for PG education provided one meets the requirement as PG teacher. Additional recruitments should be made to make

the department eligible to be declared as PG department. **PG department** must have at least 3 PG recognized faculty (preferably professor or equivalent and/or associate cadre or equivalent) declared as PG teacher to either teach only PG courses or also have the approval as major advisor for masters/ doctoral program by the University. Further, two of the three PG teachers must be approved major advisor as per university norms. Guideline for approval of PG teacher and guide (major advisor) should be clearly spelt out by the University keeping in view the qualification and experience of the faculty.

- Every department must have a technician/ lab assistant and 2 lab attendant/ helper.
- There should be separate PG cum research labs with fairly good facilities for teaching and research. It should contain advanced equipment as per the need of the discipline. Department wise list of some equipment are provided in Appendix. It should be ensured to restrict overlap of activities between UG and PG Labs.
- There should be a separate seminar hall with modern teaching aids.
- There should be separate allocation of funds for PG education and thesis research to the department/ college.

B. 2 Centralized Facilities

Further, the following centralized facilities must be in place at the college/ institute. Most of the central facilities listed below are enlisted in the MSVE, regulations, 2008 but institutions offering PG programs are required to strengthen these facilities to facilitate effective PG education and research.

- There should be availability of experimental animal house as per CPCSEA Regulations.
- Instructional Livestock Farm Complex (ILFC) should be equipped to fulfil the needs of PG departments to provide animals and other pre-requisite facilities to conduct thesis research.
- There should be availability of Central Instrumentation facilities adequately equipped to cater to the education and research needs. It is suggested to place sophisticated equipment in cubicle in air cool environment with un-interrupted power supply to provide a proper working culture. A qualified technician would be preferred to take care of such sophisticated equipment. Desirable list of equipment and other facilities is provided in the appendix.
- The Central Library should be adequately equipped with latest books, scientific journals (both of National and International journals of repute). E-library and reprographic facility must be in place. A qualified librarian/ assistant librarian should be available to offer non-credit course in Library Science.
- Availability of Computer Science laboratory with Wi-Fi and internet facilities
- Availability of a common study room for PG students
- Availability of PG hostels (both for boys and girls) preferably single seated.
- Round the clock wi-fi facilities in the hostel must be ensured.
- The Teaching Veterinary Clinical Complex (TVCC) must be fully established with adequacy of indoor and outdoor cases. There should be provisions for

critical care unit, central diagnostic facilities, post mortem complex, animal disposal arrangement, ambulatory services and animal transportation facilities etc. These facilities should be considered mandatory pre-requisites for any of the PG programs in Veterinary Science subjects/ disciplines.

B. 3 Academic Regulations/ Norms

Nomenclature of PG degrees (master's and doctorate), eligibility conditions for admissions, reservation policy, duration of degree course, course contents, course credit load and credit distribution, pass percentage, qualifying grade, examination pattern, thesis evaluation etc. should be as per the ICAR/ University norms. However, the committee recommends the Education division to revisit the following provisions.

- Updating/ modifying the course contents of each discipline by making it more relevant to the national/ regional needs under the umbrella of changing world order. Latest mandate of OIE on veterinary education and animal welfare must be adequately addressed in revised curriculum. Further, needs of user agencies (industries, NGO's entrepreneurs etc.) should not be lost sight during this exercise.
- Room may be kept for adequate flexibility in the curricula to accommodate regional priorities and the strength of the department/ institute. It should be left to the universities to expand the course contents on the basis of its strength in terms of expertise, infrastructure and its responsibilities to fulfil the specific needs. It would be the responsibility of the university to adhere to the laid down objective of the course/ discipline/ degree as per ICAR guidelines.
- Academic regulations may also be modified as and when need arises.
- The committee is the strong view that there is a need to introduce Comprehensive external examination (written and oral) on completion of course work both at MVSc and Ph.D level.

The following shall be the nomenclature of PG degree programmes

1. Animal Biotechnology (ABT)
2. Animal Genetics and Breeding (AGB)
3. Animal Husbandry Economics (AEC)
4. Animal Nutrition (ANN)
5. Animal Reproduction, Gynaecology and Obstetrics (VOG)
6. Bio-Statistics (BST)
7. Livestock Production and Management (LPM)
8. Livestock Products Technology (LPT)
9. Poultry Science (PSC)
10. Veterinary Pathology (VPP)
11. Veterinary Anatomy and Histology (VAN)
12. Veterinary and Animal Husbandry Extension (AHE)
13. Veterinary Biochemistry (VBC)
14. Veterinary Clinical Medicine (VCM)
15. Veterinary Preventive Medicine (VEP)

16. Veterinary Microbiology (VMC)
17. Veterinary Parasitology (VPA)
18. Veterinary Pharmacology & Toxicology (VPT)
19. Veterinary Physiology (VPY)
20. Veterinary Epidemiology & Public Health (VPH)
21. Veterinary Surgery and Radiology (VSR)
22. Wild Life Sciences (WLS)

NB: The University may introduce any other programme as per need.

B. 4 Student Intake Capacity.

The student intake capacity will depend on availability of faculty and facilities. The conditions to govern Intake are;

- An approved PG guide can maximally guide 3 MVSc or 2 PhD and 1 MVSc or 2 MVSc and 1 PhD students at any point of time.
- University/ college can utilize the services of qualified scientists from sister scientific organizations (ICAR, CSIR, Line departments etc.) for teaching PG courses or guiding thesis research provided University have approved them on PG faculty and have developed MOU with the sister organization in this context.
- Sufficient contingent grants are available with the department/ college to impart PG teaching, training and research.
- Desired experimental animals and other requisite materials are made available to the student.

B. 5 Departments

There should be at least 15 UG departments besides, TVCC and ILFC as per the VCI norms. All those departments which have been declared PG departments on fulfilment of laid down conditions by the University can be considered to offer PG program. University can create more departments (UG and or PG) as per the university need. However, the university must appraise accreditation section of Education Division (ICAR) on creation of new department or initiation of new PG program. Such departments will qualify for development grant of ICAR only when it accords its approval.

- A department can offer PG course in more than one discipline. However, it has to ensure availability of qualified faculty in that particular discipline.
- Integrated PG courses between departments may be formulated. Modalities and responsibilities of concerned departments should be clearly spelt out.

B. 6 Some guideline for Exclusive PG institutes

Mandate of PG teaching cum research institute should encompass on holistic teaching in all disciplines under veterinary, animal sciences and allied sector at PG level, conducting advanced basic and applied research, extension education and innovative transfer of technological practices etc. All departments/ divisions must exist at the institute covering wide spectrum of Veterinary and

Animal Sciences activities. Each department must be provided with a minimum of 4 PG faculty members including Professor/Associate Professor/Assistant Professor. The faculty should exclusively be approved PG teachers and preferably be specialists from different disciplines of the departments. Other conditions with respect to administrative, financial & technical staff, and infrastructure, as detailed for PG education in the veterinary colleges, should be applicable for PG institutes.

B. 7 Other relevant recommendations for imparting quality education are:

- **Financial assistance to Post graduates.** It must be ensured that all post graduate students should be given adequate fellowship, stipend, and scholarship. The feasibility to extend or award NTS to PG students may be explored. Additional investment in form of financial assistance to post graduates will not only attract meritorious students to pursue higher education but will bridge the gap of human resource deficient in this sector especially at teaching and scientific organizations.
- A provision may be made to recruit meritorious graduates to **teaching/research associates** or as residents for clinical subjects as in vogue in medical profession. They should be allowed to pursue higher education as in-service candidates.
- In order to **reduce in- breeding** there should be a definite policy to discourage teachers/ scientists who have all the three degrees from the same institute at the time of recruitment in the universities/institutes.
- Liberal grants for construction of PG and **International hostels** to the University/ Colleges should be made available.
- The universities may explore the feasibilities of creating **new departments/ divisions** in emerging disciplines such as bio-technology, bio-statics, livestock economics and marketing etc. and structuring Post graduate education in new and emerging disciplines.
- **Linkages** with other universities and scientific institutions in India or abroad are the need of the hour, deserving encouragement.
- The committee suggests that there should be flexibility to the colleges/universities in relocating the faculty within the different disciplines looking into the need.
- The TVCC needs to be further strengthened in terms of human resource to cater to the Veterinary health coverage as per the regional requirements.
- The extension activities need to be further strengthened in terms of human resource.

Infrastructure
(Laboratories, equipment and other desirable facilities)

Minimum Equipment requirement for every PG degree programme

Besides having facilities in terms of laboratories, equipment, livestock, laboratory animal and other pre-requisites as provided in MSVE, Regulations 2008, it has been considered necessary to have separate PG teaching cum research laboratory/facilities in each department. Lay out of the lab and its dimensions should commensurate to PG teaching and research needs. There should be ample space available to properly house equipment having assured basic amenities and adequate working space for the students. Adequate experimental animal laboratory/facilities must be in place where ever these are needed.

The table provides department wise list of equipment that are generally needed to cater to the PG teaching and research needs. However, the availability of requisite facilities including equipment, animals etc. are required to be assured at the time of allocating research problems to a student.

No.	PG Degree	PG Lab(s)	Equipment	Other facilities
1.	Animal Biotechnology	Molecular biology Lab	1. Thermocycler 2. Real time PCR 3. Gel Documentation unit 4. Biosafety cabinets 5. Fermenters 6. Research microscope with accessories 7. Freezers 8. Electrophoresis units 9. DNA sequencer (Optional) 10. Flow cytometer (Optional)	Modern laboratory Preferably air conditioned. Cubicle-set up suggested.

2.	Animal Genetics and Breeding	Molecular genetics lab Cytogenetics	<ol style="list-style-type: none"> 1. Biosafety cabinet 2. Real Time Thermocycler 3. Thermocyclers 4. Gel documentation unit 5. Centrifuges 6. Spectrophotometer 7. Electrophoresis unit 8. Freezers 9. Compound microscope with camera attachment 10. Millipore distillation plant 11. High end computers for data analysis 	
3.	Animal Husbandry Economics	One	<ol style="list-style-type: none"> 1. High end computers for data analysis 	
4.	Animal Nutrition	One	<ol style="list-style-type: none"> 1. Atomic absorption spectrophotometer (Optional) 2. Gas chromatography (Optional) 3. Kjeldahl apparatus 4. Deep freezers 5. Fibretech 6. Soxtech 7. HPLC (Optional) 8. UV-vis-spectrophotometer 9. Bomb calorimeter 10. Metabolic cages for cattle, sheep, pig and 	Feed Processing Unit <ol style="list-style-type: none"> 1. Pellet mill 2. Feed block making machine
5.	Animal Reproduction, Veterinary Obstetrics and gynaecology	One	<ol style="list-style-type: none"> 1. Differential phase contrast microscope 2. Stereo zoom microscope 3. Ultra sound Doppler – color 4. Centrifuges (different speed) 5. Micro manipulator (Optional) 6. CO₂ incubator (Optional) 	Operation theatre – 2 Nos
6.	Bio-Statistics	One	<ol style="list-style-type: none"> 1. High end computers for data analysis 	-

7.	Livestock Production Management	One	<ol style="list-style-type: none"> 1. High speed centrifuge (Optional) 2. UV spectrophotometer 3. Anaerobic fermenter 4. HPLC (Optional) 5. Lyophilizer (Optional) 6. Freezer 	<p>Research Farm (Shared with Poultry Science Dept.)</p> <ol style="list-style-type: none"> 1. Commercial layer house 2. Commercial broiler house 3. Laboratory animal facilities 4. Facilities for farm like silos, hay stack, water tank etc.
8.	Livestock Products Technology	<p>Product Processing Lab</p> <p>Milk quality control lab</p> <p>Wool lab</p>	<ol style="list-style-type: none"> 1. Carcass splitter 2. Microscope 3. Electrophoresis system 4. ELISA Reader 5. Processing equipment like extruder, pellet maker, canner etc. 	<ol style="list-style-type: none"> 1. Refrigeration room 2. Freezer room 3. Slaughter hall 4. Milk Plant (Optional)
9.	Poultry Science		<ol style="list-style-type: none"> 1. Fibretech 2. Soxtech 3. Metabolic cages 	<ol style="list-style-type: none"> 1. Farm facilities to be shared with LPM department. 2. Slaughter facilities to be shared with LPT
10.	Veterinary Anatomy and Histology	<p>Gross anatomy lab</p> <p>Histology lab</p>	<ol style="list-style-type: none"> 1. Microtome 2. High end research microscope 3. Cryostat 4. Dissection table with shadow less light 5. Body cutting machine 	<ol style="list-style-type: none"> 1. Cold room
11.	Veterinary and Animal Husbandry Extension	Audio visual labs	<ol style="list-style-type: none"> 1. Multimedia projector with laptop 2. Panel board 3. Flanner graph board 	

			<ul style="list-style-type: none"> 5. Digital camera (Video and stills) 6. Tabs for data collection 	
12.	Veterinary Biochemistry	One	<ul style="list-style-type: none"> 1. Double beam spectrophotometer 2. Thermal cycler 3. Real time PCR (Optional) 4. High Speed cooling centrifuge (Optional) 5. Gel documentation system 6. Electrophoresis system 7. 2D Electrophoresis system (Optional) 8. Nanodrop and biochemical analyzer (Optional) 9. Chromatography unit with fraction collector (Optional) 	
13.	Veterinary Clinical Medicine	One	<ul style="list-style-type: none"> 1. Vital signs monitor 2. Endoscope 3. Oxygen therapy unit 4. Ventilator 5. ECG apparatus 6. ECHO – Color Doppler 7. MRI Unit (Optional) 8. CT scan (Optional) 	
14.	Veterinary Microbiology	Research Lab Biosafety Lab	<ul style="list-style-type: none"> 1. Thermocycler 2. Real time PCR 3. ELISA reader 4. Nano drop 5. Ultra centrifuge 6. Confocal microscope (Optional) 7. Freezers 8. Research microscope with attachments 9. BSL facilities 2 and 3 10. CO₂ incubator 	1. Centralized tissue culture facility
15.	Veterinary Parasitology	Clinical Parasitology Immunology	<ul style="list-style-type: none"> 1. Research Binocular Microscope with attachments 	

		and molecular biology lab	2. Centrifuges 3. Ultra Centrifuge (Optional) 4. CO ₂ Incubator (Optional) 5. Shaking Incubator 6. Laminar Flow 7. Freezers 8. Gradient Thermal Cycler 9. Electrophoresis system 10. ELISA Reader (Optional) 11. UV/VIS Spectrophotometer (Optional)	
16.	Veterinary Pathology	Histopathology lab Molecular Pathology Clinical Pathology	1. Automatic slide processing unit and stainer (Optional) 2. Automatic Microtome 3. Cryostat 4. Staining Unit/Auto stainer 5. Freezers 6. High end research microscopes 7. Thermocycler 8. Real time PCR machine (Optional) 9. Centrifuges 10. Gel documentation unit (Optional) 11. Electrophoresis unit 12. Auto analyser 13. Haematology autoanalyzer	1. Cold room
17.	Veterinary Pharmacology and Toxicology	One	1. Spectrophotometer 2. Autoanalyzer 3. Student physiograph with organ bath 4. Thin layer chromatography 5. HPLC (Optional) 6. Plethysmometer	

18.	Veterinary Physiology	PG Research Lab Lab animal research cubicle	<ol style="list-style-type: none"> 1. Biochemical autoanalyzer 2. Haemtology autoanalyzer 3. Spectrophotometer 4. Electronic balance 5. pH meter 6. Rat cages 7. Rabbit cages 8. Microscope with TV attachment 9. ECG instrument 	
19.	Veterinary Preventive Medicine	One	<ol style="list-style-type: none"> 1. ELISA Reader and Washer 2. Thermocycler 3. Geldoc system 4. High speed centrifuge with accessories 5. High end microscope with dark field and fluorescent attachment 6. BSL 2 and 3 Laminar air flow 	
20.	Veterinary Epidemiology and Public Health	One	<ol style="list-style-type: none"> 1. ELISA Reader and Washer 2. Thermocycler 3. Geldoc system 4. High speed centrifuge with accessories 5. High end microscope with dark field and fluorescent attachment 6. BSL 2 and 3 Laminar air flow 7. High end computer 	
21.	Veterinary Surgery and Radiology	One	<ol style="list-style-type: none"> 1. Small animal anaesthetic apparatus with ventilator 2. Large animal anaesthetic apparatus with ventilator 3. X Ray machine 4. Ultrasound and other imaging instruments 	

			5. Orthopaedic, ophthalmic and dental instruments 6. Operation tables	
22.	Wild Life Sciences	One	1. Binocular microscope 2. Centrifuges 3. Transponder applicator and reader 4. Restraint cages for different animals	

Central Instrumentation Facilities (CIF)

Use of equipment that can be extended to different disciplines/ departments should be clubbed under Central Instrumentation Facilities (CIF). Benefit of such facilities should be allowed to percolate across the departments. Some of the pre-requisite facilities in CIF include;

1. Microscopic unit

It must have all types of microscopes including phase contrast, dark field, inverted, UV, stereo-zoom, fluorescent etc. It is desirable to have a transmission electron microscope in the college/ University. Micro- photographic attachment and projection facilities are needed.

2. Histo-pathology Unit

Should have complete histo-pathological tissue processing facilities including cryostat microtome, tissue flotation bath and other tissue process and staining units

3. Analytical Equipments

Colorimeters, Spectro-photometers visual and UV, densitometer Atomic absorption spectrophotometer, Gas chromatograph, flame photometer, HPLC, auto-analyzers, PCR, electrophoresis units, ELISA reader etc.

4. Centrifuges

All types of centrifuges including refrigerated, ultra/ high speed/ cooling.

5. Freezing units

Deep freeze, ultra centrifuges and freeze dryer

6. Weighing balances

Mono-pan, electronic, digital

7. Incubators

All types including BOD, CO₂, Shaking incubator

8. Centralized distillation and de-ionizer facilities

9. **Miscellaneous** group of equipment includes, pH meter, laminar flow, water baths, autoclave, hot air oven, polygraph

10. Ice making machines

11. Water baths – Digital and Shaking water bath

12. **PCR facility** – This facility may have two or three gradient PCR, one real time PCR, two or three electrophoresis units and gel doc system

- Any equipment or facility enlisted in the department and its use is extendable to other department than such facility becomes a part of CIF
- Till departments equip themselves with equipment mentioned for them, the same equipment if mentioned here may be considered as that for the department for accreditation purpose.

Annexure-II (C)

Minimum Standards for Establishing College of Fisheries in Agricultural Universities

1. Departments

1.	Department of Aquaculture (AQ)
2.	Department of Fisheries Resource Management (FRM)
3.	Department of Fish Harvest and Post-harvest Technology (PHT)
4.	Department of Aquatic Environment Management (AEM)
5.	Department of Fish Genetics and Biotechnology (FGB)
6.	Department of Fish Health Management (FHM)
7.	Department of Fish Nutrition and Feed Technology (FNFT)
8.	Department of Fisheries Extension & Humanities (FEH)

2. Degree Programmes

A. Undergraduate : Bachelor of Fisheries Science

B. Postgraduate Programmes (M.F.Sc. and Ph.D.)

Sl. No.	Disciplines
1	Aquaculture
2	Fisheries Resource Management
3	Fish Processing Technology
4	Aquatic Environment Management
5	Fish Genetics and Breeding
6	Fish Biotechnology
7	Fish Physiology and Biochemistry
8	Fish Health Management
9	Fish Nutrition and Feed Technology
10	Fisheries Extension
11	Fisheries Economics

3. Eligibility Criteria

Bachelor of Fisheries Science	Higher Secondary/10+2/Intermediate Subjects: PCMB/PCB/Inter (Agriculture) (P, C, M and B are Physics, Chemistry, Mathematics and Biology, respectively)
Masters in Fisheries Science	B.F.Sc. (10+2+4 system)
Ph.D. in Fisheries Science	B.F.Sc.(4 years) +M.F.Sc. (2 years)

4. Medium of Instruction: English

5. Intake Capacity

A. Bachelor of Fisheries Science (B.F.Sc.) : 40

B. Masters in Fisheries Science (M.F.Sc.)

Discipline	Suggested Intake/Year
Aquaculture	8
Fisheries Resource Management	4
Fish Processing Technology	4
Aquatic Environment Management	3
Fish Genetics and Breeding	3
Fish Biotechnology	3
Fish Health Management	3
Fish Nutrition and Feed Technology	3
Fish Physiology and Biochemistry	3
Fisheries Extension	3
Fisheries Economics	3

C. Doctoral Programmes (Ph.D.)

Aquaculture	4
Fisheries Resource Management	3
Fish Processing Technology	3
Fish Genetics & Breeding	2
Fish Biotechnology	2
Aquatic Environment Management	2
Fish Health Management	2
Fish Nutrition and Feed Technology	2
Fish Physiology and Biochemistry	2
Fisheries Extension	1
Fisheries Economics	1

6. Land Requirements

Main building and hostels:	4 ha
Instructional Farm Area:	20 ha
Play grounds& other amenities:	2 ha
Total:	26 ha

Geographical location:

For Maritime States the most ideal location is near the coast line having access to open sea, estuaries, fishing harbours and fish processing plants with a good water source.

For Inland States, the location needs to be close to water bodies / Farm facilities.

For Hilly Regions, the land requirement may be less as per availability

7. Manpower Requirements of Dean's Office

Manpower	Number
Dean	1
A. Establishment	
PA to Dean	1
Administrative Officer	1
Superintendent	3
Steno	1
Assistant	3
Operator (Audio Visual)	1
Attendants/Messengers	4
Clerk (LDC)	4
Electrician	1
Plumber	1
Store Keeper	1
Security, Sanitation, transport and Landscaping	To be outsourced
B. Central Instrumentation Facilities	
Computer Assistant	1
Laboratory Technicians	2
Laboratory Assistant	1
Laboratory Attendant	3
C. Library Staff	
Assistant Librarian	1
Library Assistant	1
Clerk	1
Library attendant	2

D. Instructional Fish Farm & Hatchery	
Farm Manager	1
Field Assistant	1
Laboratory Assistant	1
Field Attendant	2
Field Staff / Fishermen	20
Security	To be outsourced
E. Students Welfare	
Assistant Director (Students' Welfare)	1
Medical Officer	1
Assistant Professor (Physical Education for Boys and Girls)	1+1
E. Hostel (Boys and Girls)	
Wardens	1+1
Assistant Wardens	1+1
Clerk (LDC)	2
Attendants	4
Security, Sanitation, Boarding and Landscaping	To be outsourced

8. Faculty Requirements for Departments*

Department	Faculty			Total
	Professor	Associate Professor	Assistant Professor	
Aquaculture	1	2	3	6
Fisheries Resource Management	1	2	3	6
Fish Harvest and Post-harvest Technology	1	3	5	9
Aquatic Environment Management	1	1	3	5
Fish Genetics and Biotechnology	1	1	2	4
Fish Health Management	1	1	2	4
Fish Nutrition and Feed Technology	1	1	2	4
Fisheries Extension & Humanities	1	1	2	4
Total	8	12	22	42

*Additional faculty requirement for the Departments offering PG Degrees: 1 Professor, 2 Associate Professors and 2 Assistant Professors

9. Administrative and Supporting Staff for Departments

Department	Assistant	Attendant/ Messenger	Clerk	Laboratory Assistant/ Attendant
Aquaculture	1	2	1	4
Fisheries Resource Management	1	2	1	2
Fish Harvest and Post- harvest Technology	1	1	1	4
Aquatic Environment Management	1	1	1	2
Fish Genetics and Biotechnology	1	1	1	2
Fish Health Management	1	1	1	2
Fish Nutrition and Feed Technology	1	1	1	2
Fisheries Extension & Humanities	1	1	1	2
Total	8	10	8	20

10. Faculty Expertise

Department	Faculty Expertise
Aquaculture	<ul style="list-style-type: none"> - Inland Aquaculture - Freshwater Aquaculture - Brackish water Aquaculture - Mariculture - Ornamental fish culture - Cage Culture - Culture of Fish Food organisms - Aquaponics - Finfish & shellfish breeding and seed production - Brood stock and hatchery management - Aquaculture Engineering - Fish Farm Management
Fisheries Resource Management	<ul style="list-style-type: none"> - Anatomy & Biology of Fishes - Population Dynamics - Stock Assessment - Taxonomy of Fishes - Marine, Inland & Brackishwater Fisheries - Fishery Regulations and Laws - Conservation & Biodiversity
Fish Harvest and Post-harvest Technology	<ul style="list-style-type: none"> - Fishing gear & craft technology - Equipment Engineering & plant maintenance - Refrigeration Engineering - Marine Engines - Navigation & Seamanship - Fishing Technology - Freezing Technology - Thermal processing - Fish Processing, Product Development and waste utilization - Quality Control - Packaging Technology
Aquatic Environment Management	<ul style="list-style-type: none"> - Analytical Water & Soil Chemistry - Limnology - Meteorology - Physical, Chemical and Biological Oceanography - Geography - Aquatic Pollution - Aquatic Environment & Biodiversity - Planktonology

Fish Genetics and Biotechnology	<ul style="list-style-type: none"> -Genetics and Breeding -Molecular Biology -Genetic Engineering - Biochemistry - Physiology
Fish Health Management	<ul style="list-style-type: none"> -Fish Microbiology -Immunology -Parasitology -Pathology -Fish Disease diagnostics and management
Fish Nutrition and Feed Technology	<ul style="list-style-type: none"> - Fish Nutrition - Feed Technology - Feed formulation and Processing, -Nutritional Biochemistry
Fisheries Extension & Humanities	<ul style="list-style-type: none"> - Fisheries Administration - Project Formulation & Finance - Extension Programme Planning - Co-operative & Marketing management - Computer Science - Fisheries Statistics - Fisheries Economics - Rural Sociology & Extension education - Communication Skills - Business Organisation & Personnel Management

11. Department-wise Laboratories*

Department	Laboratory
Aquaculture	<ul style="list-style-type: none"> - Finfish & shellfish breeding - Ornamental fish breeding & culture
Fisheries Resource Management	<ul style="list-style-type: none"> - Fish Anatomy and Biology - Museum - GIS and Remote sensing
Fish Harvest and Post-harvest Technology	<ul style="list-style-type: none"> - Fishing gears and craft (with net mending facility) - Navigation tools - Fisheries Engineering - Biochemistry - Quality control - Microbiology - Fish Processing and packaging

Aquatic Environment Management	<ul style="list-style-type: none"> - Physical Oceanography - Toxicology and Bioassay - Water and Sediment Quality Analysis
Fish Genetics and Biotechnology	<ul style="list-style-type: none"> - Genetics - Biochemistry - Physiology - Biotechnology
Fish Health Management	<ul style="list-style-type: none"> - Microbiology - Immunology - Parasitology - Pathology - Disease Diagnosis
Fish Nutrition and Feed Technology	<ul style="list-style-type: none"> - Nutrition - Feed Analysis - Feed mill
Fisheries Extension & Humanities	<ul style="list-style-type: none"> - Extension - Economics - Statistics - Computer Laboratory

*Each Department should have minimum of one UG, one PG and one research laboratories

12. Floor Space Requirement

A. Central Facilities

S. No.	Details	Number of Rooms	Dimensions
1.	Dean office	1	20' x 24'
2.	PA room	1	20' x 12'
3.	Committee room with video conferencing facility	1	20' x 48'
4.	Administrative officer room	1	20' x 12'
5.	Admin. Staff rooms	3	20' x 36' each
6.	Examination cell	1	20' x 12'
7.	Evaluation room	1	20' x 36'
8.	Faculty room	1	20' x 12' each
9.	Placement cell	1	20' x 48'
10.	Smart Lecture rooms	8	Seating capacity –50
11.	Auditorium (optional)	1	Seating capacity – 300
12.	Library/Book bank	1	30' x 72'
13.	Examination hall (optional)	1	Seating capacity – 300
14.	Multipurpose room	1	20' x 36'
15.	Laboratories	2 5	30' x 48' each / as per requirement
16.	Hostels	2	UG and PG Boys, UG and PG Girls
17.	Generator shed	1	20' x 36'
19.	Toxic chemical waste storage/disposal Unit	1	20' x 24'
20.	Canteen	1	20' x 12' (kitchen) & 20 x 36' (sitting)
21.	Toilets	-	2 sets for each floor
22.	Parking space	As per requirement	For college and hostels
23.	Vehicles: Office car Staff car/Jeep Bus Pick-up van		1 3 1 1

B. Departments

S. No.	Department	Number of rooms	Dimensions
1.	Head of the Department	8 (one for every Department)	20' x 24' each
2.	Administrative Staff	8 (one for every Department)	20' x 36' each
3.	Faculty room	21 (as per faculty strength)	20' x 24' (3 rooms) 20' x 12' (18 rooms)
4.	Rooms for Research Scholars	8(one for every Department)	20' x 24' each
5.	Committee room cum library	8 (one for every Department)	20' x 36' each
6.	Smart Lecture cum seminar room	8 (one for every Department)	Seating capacity – 50 each

13. Equipments Requirement**A. Central Instrumentation Facility**

S. No.	Name of the Equipment	Number
1	Cold room -20 °C	1
2	-80 ⁰ °C freezer	1
3	Chill room 4 °C	1
4	High Speed Centrifuge	1
5	HPLC,	1
6	GCMS	1
7	Gel doc system	1
8	Real time PCR	1
9	Research Vessel	1
10	Ultra Centrifuge	1
11	Programmable Freezer (Cryopreservation)	
12	Water Purification Unit	As per requirement
13	Ice flaker	1
14	Freeze Dryer	1
15	Atomic Absorption Spectrophotometer (AAS)	1
16	Automatic Tissue Processor	1
17	Microtome	1
18	Inverted Microscope	1
19	Generator	1

B. Instructional Farm Facilities

1	Nursery ponds	20
2	Rearing Ponds	8
3	Stocking ponds	4
4	Brood stock ponds	4
5	Chinese Circular hatchery	1
6	Wetlab facilities	As per requirement
7	Re-circulatory Systems	1

Departmental Laboratories

Sr. No.	Name of the Equipment	Total number
1.	-20 °C Freezer	7
2.	-80 °C Freezer	3
3.	Autoclaves	7
4.	Biosafety Cabinet	3
5.	Centrifuge	7
6.	Refrigerated Centrifuge	7
7.	Cryo-cans	6
8.	Analytical balance	7
9.	Stirrer	7
10.	Spectrophotometer	7
11.	Research Microscope	70
12.	Micropipette set	7
13.	Thermocycler	7
14.	Waterbath (Digital)	7
15.	Salino meter (Refracto meter)	6
16.	Dissolved oxygen analyzer	2
17.	Hot air oven	7
18.	Kjeltec for protein estimation	1
19.	Soxhlet for fat estimation	1
20.	Muffle furnace	2
21.	Microtome	1
22.	Fish deboning machine	1
23.	Fish drying & smoking kiln	1
24.	Vacuum packing machine	1
25.	Modified atmosphere	1

26.	Packaging	
27.	pH meter	7
28.	Computers	7
29.	Incubator	7
30.	Digital colony counter	3
31.	Binocular Microscope	140
32.	Bomb Calorimeter	1
33.	Automatic Water Analyzer	2