ICAR ACCREDITATION 2020

6.4. SELF STUDY REPORT

on

COLLEGE OF FOOD AND DAIRY TECHNOLOGY
KODUVALLI

TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY
CHENNAI – 600 051

6.4 SELF STUDY REPORT

COLLEGE OF FOOD AND DAIRY TECHNOLOGY
KODUVELI, ALAMATHI-POST,
CHENNAI – 600 052

INDEX

6.4 SELF STUDY REPORT
FOR
UNDERGRADUATE PROGRAMME
(B.Tech – Food Technology)

6.4. Self-Study Report for the Programme: B.Tech (Food Technology)

6.4.1. Brief History of the Degree Programme

College of Food and Dairy Technology (CFDT) is a constituent unit of Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) which offers degree programmes in B.Tech (Food Technology) since 2006, approved by All India Council for Technical Education (AICTE) and accredited to Indian Council of Agricultural Research (ICAR) with the adoption of National syllabus framed by Department of Agricultural Research and Education (DARE), Government of India.

To cater to the rising demand in skilled manpower requirement in food processing sector, a degree programme in B.Tech (Food Technology) with an intake capacity of 20 seats per year has been incepted during the year 2006 at this Institute of Food and Dairy Technology which attained a state of full-fledged educational organization under the ambit of Tamil Nadu Veterinary and Animal Sciences University for the ultimate output of professional graduates specialized in food processing, quality control, novel nutritious product development, food trade and business management. The Institute of Food and Dairy Technology has been renamed as College of Food and Dairy Technology (CFDT) during the year 2012.

Courses offered at CFDT

Degree	Specialization	Duration	Annual intake
B.Tech	Food Technology	4 Years	40
B.Tech	Dairy Technology	4 Years	20
M.Tech	Food Technology	2 Years	10
M.Tech*	Dairy Technology	2 Years	03
M.Tech*	Dairy Chemistry	2 Years	03
Ph.D	Food Technology	3 Years	05

* M.Tech in Dairy Technology and Dairy Chemistry are being offered from the academic year 2019-20

Proposed course for ICAR accreditation

Degree	Specialization
B.Tech	Food Technology

6.4.2. Faculty Strength

College wise faculty strength

S.No.	Designation	Sanctioned	Filled	Vacant
1	Dean	1	1	0
2	Professor	2	1	1
3	Associate Professor	9	8	1
4	Assistant Professor	16	14	2
5	Assistant Librarian	1	1	0
	Total	29	25	4

Department wise faculty strength of college is given in the following table

B.Tech - Food Technology Programme

Department of Food Processing Technology

S.No.	Designation	Sanctioned	Filled	Vacant	Faculty recommended by ICAR
1	Professor	1	-	1	1
2	Associate Professor	2	2*	0	2
3	Assistant Professor	4	4	0	4
	Total	7	6	1	7

*One Professor shown against the post of Associate Professor

Department of Food Process Engineering

S.No.	Designation	Sanctioned	Filled	Vacant	Faculty recommended by ICAR
1	Professor	1	1	0	1
2	Associate Professor	2	1*	1	2
3	Assistant Professor	4	3	1	9
	Total	7	5	2	12

*Assistant Professor shown against the post of Associate Professor

Department of Food Safety and Quality Assurance

S.No.	Designation	Sanctioned	Filled	Vacant	Faculty recommended by ICAR
1	Professor	0	0	0	1
1	Associate Professor	2	2*	0	2
2	Assistant Professor	3	2	1	7
	Total	5	4	1	10

*One Professor shown against the post of Associate Professor

Department of Food Business Management

S.No.	Designation	Sanctioned	Filled	Vacant	Faculty recommended by ICAR
1	Professor	0	0	0	1
2	Associate Professor	1	1*	0	2
3	Assistant Professor	1	1	0	7
	Total	2	2	0	10

*Professor shown against the post of Associate Professor

Department of Food Plant Operations

S.No.	Designation	Sanctioned	Filled	Vacant	Faculty recommended by ICAR
1	Professor	0	0	0	1
2	Associate Professor	0	0	0	2
3	Assistant Professor	1	1	0	4
	Total	1	1	0	7

Library Staff

S.No.	Designation	Sanctioned	Filled	Vacant
1	Assistant Librarian	1	1*	0
	Total	1	1	0

*Deputy Librarian shown against the post of Assistant Librarian

6.4.3. Technical and Supporting staff

Name of the College	Teaching staff			Technical and supporting staff			Administrative staff		
College of Food and Dairy Technology	Sanctioned	Filled	Vacant	Sanctioned	Filled	Vacant	Sanctioned	Filled	Vacant
	29	24	5	22	12	10*	12	6	6*

*Vacant posts for technical and supporting /administrative staff filled in by outsourcing

6.4.4. Classrooms and Laboratories

I. Infrastructure available for teaching

S. No	Name of the Infrastructure	Numbers available	Area (in Sq.m)
1.	Total number of class rooms	10	524.59
2.	Class rooms with ICT facility	9	494.5
3.	Students'laboratory	10	1932.21
4.	Research laboratories	1	110.57
5.	Seminar Hall	1	47.79
6.	Smart class room	1	63.28
7.	Any other facility		
	Auditorium	1	179.52
	Examination Hall	1	548.00

II. Laboratories

Department of Food Processing Technology

S. No	Name of the Laboratory	Name of the instrument / equipment
1.	Food Technology Laboratory	UV-Visible Spectrophotometer, Flame Photometer, Calorimeter, Homogeniser, Muffle furnace, Vacuumpacking machine, Centrifuges, Thin Layer Chromatography, Poly Acryl amide Gel Electrophoresis, Soxhlet for fat estimation, Micro-Kjeldhal, Vacuum evaporator, pH meter, Magnetic Stirrer, Triple distilled water unit, Portable digital pH meters, Refractometers, Physical and analytical balances.
2.	Bakery, Confectionary Laboratory	Chocolate sizing machine, Chocolate cutting machine, Confectionery roller, Lolly pop machine, Microwave oven, OTGs, Planetary mixer, Deck oven
3.	Fish Processing Laboratory	Air Blast Freezer, Retort pouch processing machine, Semiautomatic can double seaming machine, Manual meat mincer, Modern fish processing tables (SS), Pasta making machine, Deep freezer, Smoking Kiln, Tray Dryer, Balance.
4.	Meat and Poultry Processing Laboratory	Meat mincer, Sausage stuffer, Bowl chopper, Meat Slicer, Electric Fryer, Scalding tank, Electric tandoor, Egg breaking instrument, Spirometer, Candling box.

Department of Food Process Engineering

S. No	Name of the Laboratory	Name of the instrument / equipment
1.	Thermal Engineering & Refrigeration Laboratory	Shell & Tube heat exchanger, Plate type heat exchanger, Thermal conductivity of metal rod, Heat transfer in forced convection, Heat pipe apparatus, Refrigeration cycle demonstrator, Vapour absorption refrigeration system demonstrator.
2.	Electrical Engineering Laboratory	Induction motors, Transformers, Starters, Loading Rheostats, Measuring instruments.
3.	Instrumentation and Process Control Laboratory	Programmable logic controllers, Temperature measuring devices, U-tube manometer, Orifice, Venturimeter, Pitot tube, Anemometer.
4.	Engineering Properties Testing Laboratory	Porosity apparatus, Coefficient of friction apparatus, Impact tester, Angle of repose apparatus, Plunger machine, Bursting strength tester, Cobb sizing tester
5.	Cereal, Pulses and Spices Processing Laboratory	Spice Cleaning, Spice pulveriser, Form fill packaging machine, Mini Rice Mill, Cottage level soya processing unit, Wheat grader, Destoner, Seed grader, Tunnel solar dryer, Rice sheller.
6.	Engineering Drawing Hall	Drawing tables and accessories
7.	Work shop (Carpentry & Fitting, Welding & Smithy, Machine shop)	Lathe, Drilling machines, Welding machines, Bench vice, Pipe vice, Carpentry vice.
8.	Basic Sciences Laboratory	Travelling Microscope, Tarson Pendulum, Water baths, Vernier calliper, Screw gauge.

Department of Food Safety and Quality Assurance

S. No	Name of the Laboratory	Name of the instrument / equipment
1.	Food Microbiology Laboratory	PCR machine, Bio-safety cabinet, ELISA, Lyophilizer, Binocular Microscopes, Autoclaves, Hot air oven, Incubators, BOD incubator, Water baths, Anaerobic jar, Balances, pH meter, Distilled water still.
2.	Food Chemistry Laboratory	Double beam UV-VIS Spectrophotometer, Thin layer chromatography, Rough balance, Cyclo mixer, Hot plate, Hot air oven, Water bath rectangular 12 holes, Weighing balance-5kg, Weighing balance-1kg, Serological water bath, Gerber centrifuge, Automatic fat/oil solvent extraction system, Automatic fibre analysis system, Hot air oven, Bacteriological Incubator, Distillation Assembly with heating mantle, Automatic protein Distillation System, Automatic protein Digestion system, Muffle furnace, Double door Refrigerator.

Department of Food Plant Operations

S. No	Name of the Laboratory	Name of the instrument / equipment
1.	Model Dairy Plant	Dairy Plant for processing, product development, quality analysis and packaging of milk and value added milk products
2.	Fruit and Vegetable Processing Plant	Fruit and vegetable processing plant with Fruit blancher, Fruit mill, Fruit pulper, Fruit pulp finisher, Fruit juicer, Steam jacketed kettle, Raw and processed juice collection, storage pumping tank, Juice processors, Bottling machine and accessories.
3.	Ice Cream Plant	Homogeniser, HTST pasteurizer, Softy ice cream machine, freezer, cold storage plant, and automatic milk packaging machine.

Department of Food Business Management

Computer Laboratory

Computer laboratory with 20 latest version of computer, color printer, scanner is acting as online knowledge centre cum library in providing the current informations from all over the world to the students and research scholars of this college. This online informative hub is constructed with the LAN and WAN connection with hi speed internet facility and facilitate transfer of knowledge. Online data bases such as BIS standards, e-books collections and CeRAconnectivity for online reference collection and reprographic facility helps the students to plan latest and most innovative Undergraduate projects and post graduate dissertation research at CFDT. The 10kva UPS provides uninterrupted service to this laboratory.

6.4.5. Conduct of Practical and Hands-on-Training

Practical classes are conducted as per the course curriculum utilizing the available resources in the various laboratories and food plants as detailed below

S. No	Practical and Hands-on-Training conducted
01.	Hands on experience on the manufacturing of dairy products, calculation of cost of production. Production chart and the processing equipments.
02	Practical and hands on training for manufacturing of Khoa, Peda, Burfi and other indigenous dairy products, calculation of cost of production, production chart and theprocessing equipment.
03	Sensory evaluation skills for judging sensorial qualities of dairy and food products.
04	Evaluation of quality of packaging material and acquaintance to the various packaging techniques available for improving the shelf life of foods.
05	Manufacturing process, determination of production cost, operation of basic equipment infood industry.
06	Determination of fluid properties, evaluation of energy requirements for pumping of fluidand capacities of pump. Working principle of flow measuring instruments etc.
07	Working of common machines used in workshops and hands on practice over these machines.
08	Working and determination of capacities of various refrigeration systems and its use in preservation of foods. Designing of cold storage systems.
09	Acquaintance to various methods of drawings.
10	Designing of heating and cooling systems, Studies of principle of mass transfer.
11	Studies of various IC engine with respect to constructional features and cycles.
12	Calculation of energy requirements of the plant and studies on workings of commonelectric instruments and motors.
13	Studies on starter cultures and working principles of common instruments in biotechnology laboratory.
14	Evaluation of milk and milk products for various pathogens. Practical applications ofvarious international and national organizations.
15	Analysis of dairy and food products for various major and minor constituents.
16	Acquaintance to the working of various instruments, quality evaluation of dairy and food products.
17	Preparation of bankable project report. Studies on various dairy management practices.
18	Application of various statistical tools and computer programs.
19	To impart quality dairy education on plant operation and maintenance, the students are taught about quality assurance, marketing strategies, procurement of raw material, store and account management.

6.4.6. Supervision of students in PG/PhD programmes

Not Applicable

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)

Each batch of B.Tech (Food Technology) is allotted with individual Academic Coordinator. The evaluation of Teaching-Learning process is done on semester basis by the students. The approved feedback form is provided to all the students at the end of each semester by the Academic Coordinator. These filled in forms are being submitted to the Controller of examinations by the Educational Technology Cell. Based on the student's feedback evaluation, best teacher awards are awarded during Republic day celebrations by the Vice Chancellor of our University (Feedback evaluation proforma - enclosed in Annexure).

Further, all the students have been allotted with student / ward counsellor and the counsellors monitor the curricular and extracurricular activities of the students and the feedback obtained from the students are also updated to the Academic Coordinators by conducting periodical meeting.

6.4.8. Student intake and attrition in the programme for last five years

Under Graduate

Name of the Degree Programme	**Actual students admitted in last fiveyears**							**Attrition (%)**						
Year	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y1	Y2	Y3	Y4	Y5	Y6	Y7
	15-16	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**21-22**	**15-16**	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**21-22**
B.Tech (FT)	18	20	26	33	34	40	38	10	5	23	6	0	5	0

6.4.9. ICT Application in Curricula Delivery

All the class rooms are provided with LED TV which can be connected through the Computer / Laptop where the power point presentation, soft copies, animations, e-course content can be displayed. It helps to improve the students' performance and concentration. The smart class rooms are equipped with sophisticated interactive boards for creating interactive atmosphere. The Wi-Fi facility is made available throughout the campus. The online informative hub is constructed with the LAN and WAN connection with hi speed internet facility and facilitate transfer of knowledge. Online data bases such as BIS standards, e-books collections and CeRA connectivity for online reference collection and reprographic facility helps the students to plan latest and most innovative Undergraduate projects and post graduate dissertation research at CFDT, Koduvalli, Chennai – 600 052.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 are provided pertaining to the College of Food and Dairy Technology.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also having weightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate

I, Dr. V.Appa Rao, Dean, College of Food and Dairy Technology, TANUVAS, Koduveli, Chennai - 600 052 hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding University.

Name of the Degree Programme accreditation is sought for

Undergraduate Programmes

B.Tech – Food Technology

Signature of the Dean of the college
with Date & Seal
DEAN
Faculty of Food Sciences,
College of Food and Dairy Technology,
Koduveli, Alamathi-Post, Chennai-600 052

6.4 SELF STUDY REPORT
FOR
UNDERGRADUATE PROGRAMME
(B.Tech – Dairy Technology)

6.4. Self-Study Report for the Programme: B.Tech (Dairy Technology)

6.4.1. Brief History of the Degree Programme

College of Food and Dairy Technology (CFDT) is a constituent unit of Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) which offers degree programmes in B.Tech (Food Technology) since 2006 approved by All India Council for Technical Education (AICTE) and accredited to Indian Council of Agricultural Research (ICAR) with the adoption of National syllabus framed by Department of Agricultural Research and Education (DARE), Government of India.

Milk is considered as an essential food item, the availability of which is a significant mandate of state owned Tamil Nadu Co-operative Milk Producers Federation Ltd. (TCMPF) - Aavin by regulated procurement through Milk societies from producers and supply of processed milk to consumers through its retail outletsat concessional price. To handle the milk surge at production points in villages with urging demand for milk among urbanites and requirements of skilled technocrats in milk processing industries operated by Government and Private sectors as well, Government of Tamil Nadu has instituted a degree programme in B.Tech (Dairy Technology) with an annual intake of 20 seats from the academic year 2014-15.

Courses offered at CFDT

Degree	Specialization	Duration	Annual intake
B.Tech	Food Technology	4 Years	40
B.Tech	Dairy Technology	4 Years	20
M.Tech	Food Technology	2 Years	10
M.Tech*	Dairy Technology	2 Years	03
M.Tech*	Dairy Chemistry	2 Years	03
Ph.D	Food Technology	3 Years	05

* M.Tech in Dairy Technology and Dairy Chemistry are being offered from the academic year 2019-20

Proposed course for ICAR accreditation

Degree	Specialization
B.Tech	Dairy Technology

6.4.2. Faculty Strength

College wise faculty strength

S.No.	Designation	Sanctioned	Filled	Vacant
1	Dean	1	1	0
2	Professor	2	1	1
3	Associate Professor	9	8	1
4	Assistant Professor	16	14	2
5	Assistant Librarian	1	1	0
	Total	29	25	4

B.Tech – Dairy Technology Programme

Faculty strength for Dairy Technology Programme

S. No.	Designation	Sanctioned	Filled	Vacant
1	Associate Professor	2	2	0
2	Assistant Professor	3	3	0
	Total	5	5	0

Department wise faculty strength of college is given in the following table

Department of Dairy Technology

S.No.	Designation	Sanctioned	Filled	Vacant	Faculty recommended by ICAR
1	Professor	0	0	0	1
2	Associate Professor	0	0	0	2
3	Assistant Professor	1	1	0	6
	Total	1	1	0	9

Department of Dairy Engineering

S.No.	Designation	Sanctioned	Filled	Vacant	Faculty recommended by ICAR
1	Professor	0	0	0	1
2	Associate Professor	0	0	0	2
3	Assistant Professor	1	1	0	6
	Total	1	1	0	9

Department of Dairy Chemistry

S.No.	Designation	Sanctioned	Filled	Vacant	Faculty recommended by ICAR
1	Professor	0	0	0	1
2	Associate Professor	1	1*	0	2
3	Assistant Professor	0	0	0	3
	Total	1	1	0	6

*Assistant Professor shown against the post of Associate Professor

Department of Dairy Microbiology

S.No.	Designation	Sanctioned	Filled	Vacant	Faculty recommended by ICAR
1	Professor	0	0	0	1
2	Associate Professor	1	1	0	2
3	Assistant Professor	0	0	0	3
	Total	1	1	0	6

Department of Dairy Business Management

S.No.	Designation	Sanctioned	Filled	Vacant	Faculty recommended by ICAR
1	Professor	0	0	0	1
2	Associate Professor	0	0	0	2
3	Assistant Professor	1	1	0	2
	Total	1	1	0	5

Library Staff

S.No.	Designation	Sanctioned	Filled	Vacant
1	Assistant Librarian	1	1*	0
	Total	1	1	0

*Deputy Librarian shown against the post of Assistant Librarian

6.4.3. Technical and Supporting staff

Name of the College	Teaching staff			Technical and supporting staff			Administrative staff		
College of Food and Dairy Technology	Sanctioned	Filled	Vacant	Sanctioned	Filled	Vacant	Sanctioned	Filled	Vacant
	29	24	5	22	12	10*	12	6	6*

*Vacant posts for technical and supporting /administrative staff filled in by outsourcing

6.4.4. Classrooms and Laboratories

I. Infrastructure available for teaching

S. No	Name of the Infrastructure	Numbers available	Area (in Sq.m)
1.	Total number of class rooms	10	524.59
2.	Class rooms with ICT facility	9	494.5
3.	Students' laboratory	10	1932.21
4.	Research laboratories	1	110.57
5.	Seminar Hall	1	47.79
6.	Smart class room	1	63.28
7.	Any other facility		
	Auditorium	1	179.52
	Examination Hall	1	548.00

II. Laboratories

Dairy Technology Programme

Dairy Food Quality and Safety Laboratory

PCR machine, Bio-safety cabinet, , Binocular Microscopes, Autoclaves, Hot air oven, Incubators, BOD incubator, Water baths, Anaerobic jar, Balances, pH meter, Distilled water still.

Dairy Food Analysis Laboratory

Double beam UV-VIS Spectrophotometer, Thin layer chromatography, Rough balance, Cyclo mixer, Hot plate, Hot air oven, Water bath rectangular 12 holes, Weighing balance-5kg, Weighing balance-1kg, Serological water bath, Gerber centrifuge, Automatic fat/oil solvent extraction system, Automatic fibre analysis system, Hot air oven, Bacteriological Incubator, Distillation Assembly with heating mantle, Automatic protein Distillation System, Automatic protein Digestion system, Muffle furnace, Double door Refrigerator.

Bakery, Confectionary Laboratory

Chocolate sizing machine, Chocolate cutting machine, Confectionery roller, Lolly pop machine, Microwave oven, OTGs, Planetary mixer, Deck oven

Fish Processing Laboratory

Air Blast Freezer, Retort pouch processing machine, Semiautomatic can double seaming machine, Manual meat mincer, Modern fish processing tables (SS), Pasta making machine, Deep freezer, Smoking Kiln, Tray Dryer, Balance.

Meat and Poultry Processing Laboratory

Meat mincer, Sausage stuffer, Bowl chopper, Meat Slicer, Electric Fryer, Scalding tank, Electric tandoor, Egg breaking instrument, Spirometer, Candling box.

Engineering Properties Testing Laboratory

Porosity apparatus, Coefficient of friction apparatus, Impact tester, Angle of repose apparatus, Plunger machine, Bursting strength tester, Cobb sizing tester

Food Technology Laboratory

UV-Visible Spectrophotometer, Flame Photometer, Calorimeter, Homogeniser, Muffle furnace, Vacuum packing machine, Centrifuges, Thin Layer Chromatography, Poly Acryl amide Gel Electrophoresis, Soxhlet for fat estimation, Micro-Kjeldhal, Vacuum evaporator, pH meter, Magnetic Stirrer, Triple distilled water unit, Portable digital pH meters, Refractometers, Physical and analytical balances

Cereal, Pulses and Spices Processing Laboratory

Spice Cleaning, Spice pulveriser, Form fill packaging machine, Mini Rice Mill, Cottage level soya processing unit, Wheat grader, Destoner, Seed grader, Tunnel solar dryer, Rice sheller.

Pilot Dairy Plant

Dairy Plant for processing, product development, quality analysis and packaging of milk and value added milk products

Fruit and Vegetable Processing Plant

Fruit and vegetable processing plant with Fruit blancher, Fruit mill, Fruit pulper, Fruit pulp finisher, Fruit juicer, Steam jacketed kettle, Raw and processed juice collection, storage pumping tank, Juice processors, Bottling machine and accessories.

Ice Cream Plant

Homogeniser, HTST pasteurizer, Softy ice cream machine, freezer, cold storage plant, and automatic milk packaging machine.

Dairy Business Management

Computer laboratory with 20 latest version of computer, color printer, scanner is acting as online knowledge centre cum library in providing the current information from all over the world to the students and research scholars of this college. This online informative hub is constructed with the LAN and WAN connection with hi speed internet facility and facilitate transfer of knowledge. Online data bases such as BIS standards, e-books collections and CeRAconnectivity for online reference collection and reprographic facility helps the students to plan latest and most innovative Undergraduate projects and post graduate dissertation research at CFDT. The 10kva UPS provides uninterrupted service to this laboratory.

6.4.5. Conduct of Practical and Hands-on-Training

Practical classes are conducted as per the course curriculum utilizing the available resources in the various laboratories and food plants as detailed below

S. No	Practical and Hands-on-Training conducted
01.	Hands on experience on the manufacturing of dairy products, calculation of cost ofproduction. Production chart and the processing equipments.
02	Practical and hands on training for manufacturing of Khoa, Peda, Burfi and other indigenous dairy products, calculation of cost of production, production chart and theprocessing equipment.
03	Sensory evaluation skills for judging sensorial qualities of dairy and food products.
04	Evaluation of quality of packaging material and acquaintance to the various packagingtechniques available for improving the shelf life of foods.
05	Manufacturing process, determination of production cost, operation of basic equipment infood industry.
06	Determination of fluid properties, evaluation of energy requirements for pumping of fluidand capacities of pump. Working principle of flow measuring instruments etc.
07	Working of common machines used in workshops and hands on practice over thesemachines.
08	Working and determination of capacities of various refrigeration systems and its use inpreservation of foods. Designing of cold storage systems.
09	Acquaintance to various methods of drawings.
10	Designing of heating and cooling systems, Studies of principle of mass transfer.
11	Studies of various IC engine with respect to constructional features and cycles.
12	Calculation of energy requirements of the plant and studies on workings of commonelectric instruments and motors.
13	Studies on starter cultures and working principles of common instruments in biotechnologylaboratory.

14	Evaluation of milk and milk products for various pathogens. Practical applications ofvarious international and national organizations.
15	Analysis of dairy and food products for various major and minor constituents.
16	Acquaintance to the working of various instruments, quality evaluation of dairy and foodproducts.
17	Preparation of bankable project report. Studies on various dairy management practices.
18	Application of various statistical tools and computer programs.
19	To impart quality dairy education on plant operation and maintenance, the students are taught about quality assurance, marketing strategies, procurement of raw material, store and account management.

6.4.6. Supervision of students in PG/PhD programmes

Not Applicable

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)

Each batch of B.Tech (Dairy Technology) is allotted with individual Academic Coordinator. The evaluation of Teaching-Learning process is done on semester basis by the students. The approved feedback form is provided to all the students at the end of each semester by the Academic Coordinator. These filled in forms are being submitted to the Controller of examinations by the Educational Technology Cell. Based on the student's feedback evaluation, best teacher awards are awarded during Republic day celebrations by the Vice Chancellor of our University (Feedback evaluation proforma - enclosed in Annexure).

Further, all the students have been allotted with student / ward counsellor and the counsellors monitor the curricular and extracurricular activities of the students and the feedback obtained from the students are also updated to the Academic Coordinators by conducting periodical meeting.

6.4.8. Student intake and attrition in the programme for last five yearsUnder Graduate

Name of the Degree Programme	**Actual students admitted in last fiveyears**							**Attrition (%)**						
Year	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y1	Y2	Y3	Y4	Y5	Y6	Y7
	15-16	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**21-22**	**15-16**	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**21-22**
B.Tech (DT)	19	19	09	16	16	20	20	5	5	30	11	0	0	0

6.4.9. ICTApplication in Curricula Delivery

All the class rooms are provided with LED TV which can be connected through the Computer / Laptop where the power point presentation, soft copies, animations, e-course content can be displayed. It helps to improve the students' performance and concentration. The smart class rooms are equipped with sophisticated interactive boards for creating interactive atmosphere. The Wi-Fi facility is made available throughout the campus. The online informative hub is constructed with the LAN and WAN connection with hi speed internet facility and facilitate transfer of knowledge. Online data bases such as BIS standards, e-books collections and CeRA connectivity for online reference collection and reprographic facility helps the students to plan latest and most innovative Undergraduate projects and post graduate dissertation research at CFDT, Koduvalli, Chennai – 600 052.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 are provided pertaining to the College of Food and DairyTechnology.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also havingweightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate

I, Dr. V.Appa Rao, Dean, College of Food and Dairy Technology, TANUVAS, Koduvalli, Chennai - 600 052 hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding University.

Name of the Degree Programme accreditation is sought for

Undergraduate Programmes

B.Tech – Dairy Technology

Signature of the Dean of the college
with Date & Seal

DEAN
Faculty of Food Sciences,
College of Food and Dairy Technology,
Koduveli, Alamathi-Post, Chennai-600 052

6.4 SELF STUDY REPORT
FOR
POSTGRADUATE PROGRAMME
(M.Tech – Food Technology)

6.4. Self-Study Report for the Programme: M.Tech (Food Technology)

6.4.1. Brief History of the Degree Programme

College of Food and Dairy Technology (CFDT) is a constituent unit of Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) which offers degree programmes in B.Tech (Food Technology) since 2006, approved by All India Council for Technical Education (AICTE) and accredited to Indian Council of Agricultural Research (ICAR) with the adoption of National syllabus framed by Department of Agricultural Research and Education (DARE), Government of India.

To cater to the rising demand in skilled manpower requirement in food processing sector, a degree programme in B.Tech (Food Technology) with an intake capacity of 20 seats per year has been incepted during the year 2006 at this Institute of Food and Dairy Technology which attained a state of full-fledged educational organization under the ambit of Tamil Nadu Veterinary and Animal Sciences University for the ultimate output of professional graduates specialized in food processing, quality control, novel nutritious product development, food trade and business management. The Institute of Food and Dairy Technology has been renamed as College of Food and Dairy Technology (CFDT) in the year 2012 with the induction of Post Graduate programmes in M.Tech and Ph.D (Food Technology) from the year 2011-2012 and 2013-2014 with the present intake of 10 and5 seats respectively.

Courses offered at CFDT

Degree	Specialization	Duration	Annual intake
B.Tech	Food Technology	4 Years	40
B.Tech	Dairy Technology	4 Years	20
M.Tech	Food Technology	2 Years	10
M.Tech*	Dairy Technology	2 Years	03
M.Tech*	Dairy Chemistry	2 Years	03
Ph.D	Food Technology	3 Years	05

*M.Tech in Dairy Technology and Dairy Chemistry are being offered from the academic year 2019-20

Proposed course for ICAR accreditation

Degree	Specialization
M.Tech	Food Technology

6.4.2. Faculty Strength

College wise faculty strength

S.No.	Designation	Sanctioned	Filled	Vacant
1	Dean	1	1	0
2	Professor	2	1	1
3	Associate Professor	9	8	1
4	Assistant Professor	16	14	2
5	Assistant Librarian	1	1	0
	Total	29	25	4

Department wise faculty strength of college is given in the following table

Department of Food Processing Technology

S.No.	Designation	Sanctioned	Filled	Vacant
1	Professor	1	-	1
2	Associate Professor	2	2*	0
3	Assistant Professor	4	4	0
	Total	7	6	1

*One Professor shown against the post of Associate Professor

Department of Food Process Engineering

S.No.	Designation	Sanctioned	Filled	Vacant
1	Professor	1	1	0
2	Associate Professor	2	1*	1
3	Assistant Professor	4	3	1
	Total	7	5	2

*Assistant Professor shown against the post of Associate Professor

Department of Food Safety and Quality Assurance

S.No.	Designation	Sanctioned	Filled	Vacant
1	Associate Professor	2	2*	0
2	Assistant Professor	3	2	1
	Total	5	4	1

*One Professor shown against the post of Associate Professor

Department of Food Business Management

S.No.	Designation	Sanctioned	Filled	Vacant
1	Associate Professor	1	1*	0
2	Assistant Professor	1	1	0
	Total	2	2	0

*Professor shown against the post of Associate Professor

Department of Food Plant Operations

S.No.	Designation	Sanctioned	Filled	Vacant
1	Assistant Professor	1	1	0
	Total	1	1	0

Library Staff

S.No.	Designation	Sanctioned	Filled	Vacant
1	Assistant Librarian	1	1*	0
	Total	1	1	0

*Deputy Librarian shown against the post of Assistant Librarian

6.4.3. Technical and Supporting staff

Name of the College	Teaching staff			Technical and supporting staff			Administrative staff		
	Sanctioned	Filled	Vacant	Sanctioned	Filled	Vacant	Sanctioned	Filled	Vacant
College of Food and Dairy Technology	29	24	5	22	12	10*	12	6	6*

*Vacant posts for technical and supporting /administrative staff filled in by outsourcing

6.4.4. Classrooms and Laboratories

I. Infrastructure available for teaching

S. No	Name of the Infrastructure	Numbers available	Area (in Sq.m)
1.	Total number of class rooms	10	524.59
2.	Class rooms with ICT facility	9	494.5
3.	Students'laboratory	10	1932.21
4.	Research laboratories	1	110.57
5.	Seminar Hall	1	47.79
6.	Smart class room	1	63.28
7.	Any other facility		
	Auditorium	1	179.52
	Examination Hall	1	548.00

II. Laboratories

Food Technology Programme

Department of Food Processing Technology

S. No	Name of the Laboratory	Name of the instrument / equipment
1.	Food Technology Laboratory	UV-Visible Spectrophotometer, Flame Photometer, Calorimeter, Homogeniser, Muffle furnace, Vacuum packing machine, Centrifuges, Thin Layer Chromatography, Poly Acryl amide Gel Electrophoresis, Soxhlet for fat estimation, Micro-Kjeldhal, Vacuum evaporator, pH meter, Magnetic Stirrer, Triple distilled water unit, Portable digital pH meters, Refractometers, Physical and analytical balances.

2.	Bakery, Confectionary Laboratory	Chocolate sizing machine, Chocolate cutting machine, Confectionery roller, Lolly pop machine, Microwave oven, OTGs, Planetary mixer, Deck oven
3.	Fish Processing Laboratory	Air Blast Freezer, Retort pouch processing machine, Semiautomatic can double seaming machine, Manual meat mincer, Modern fish processing tables (SS), Pasta making machine, Deep freezer, Smoking Kiln, Tray Dryer, Balance.
4.	Meat and Poultry Processing Laboratory	Meat mincer, Sausage stuffer, Bowl chopper, Meat Slicer, Electric Fryer, Scalding tank, Electric tandoor, Egg breaking instrument, Spirometer, Candling box.

Department of Food Process Engineering

S. No	Name of the Laboratory	Name of the instrument / equipment
1.	Thermal Engineering & Refrigeration Laboratory	Shell & Tube heat exchanger, Plate type heat exchanger, Thermal conductivity of metal rod, Heat transfer in forced convection, Heat pipe apparatus, Refrigeration cycle demonstrator, Vapour absorption refrigeration system demonstrator.
2.	Electrical Engineering Laboratory	Induction motors, Transformers, Starters, Loading Rheostats, Measuring instruments.
3.	Instrumentation and Process Control Laboratory	Programmable logic controllers, Temperature measuring devices, U-tube manometer, Orifice, Venturimeter, Pitot tube, Anemometer.
4.	Engineering Properties Testing Laboratory	Porosity apparatus, Coefficient of friction apparatus, Impact tester, Angle of repose apparatus, Plunger machine, Bursting strength tester, Cobb sizing tester
5.	Cereal, Pulses and Spices Processing Laboratory	Spice Cleaning, Spice pulveriser, Form fill packaging machine, Mini Rice Mill, Cottage level soya processing unit, Wheat grader, Destoner, Seed grader, Tunnel solar dryer, Rice sheller.
6.	Engineering Drawing Hall	Drawing tables and accessories
7.	Work shop (Carpentry & Fitting, Welding & Smithy, Machine shop)	Lathe, Drilling machines, Welding machines, Bench vice, Pipe vice, Carpentry vice.
8.	Basic Sciences Laboratory	Travelling Microscope, Tarson Pendulum, Water baths, Vernier calliper, Screw gauge.

Department of Food Safety and Quality Assurance

S. No	Name of the Laboratory	Name of the instrument / equipment
1.	Food Microbiology Laboratory	PCR machine, Bio-safety cabinet, ELISA, Lyophilizer, Binocular Microscopes, Autoclaves, Hot air oven, Incubators, BOD incubator, Water baths, Anaerobic jar, Balances, pH meter, Distilled water still.
2.	Food Chemistry Laboratory	Double beam UV-VIS Spectrophotometer, Thin layer chromatography, Rough balance, Cyclo mixer, Hot plate, Hot air oven, Water bath rectangular 12 holes, Weighing balance-5kg, Weighing balance-1kg, Serological water bath, Gerber centrifuge, Automatic fat/oil solvent extraction system, Automatic fibre analysis system, Hot air oven, Bacteriological Incubator, Distillation Assembly with heating mantle, Automatic protein Distillation System, Automatic protein Digestion system, Muffle furnace, Double door Refrigerator.

Department of Food Plant Operations

S. No	Name of the Laboratory	Name of the instrument / equipment
1.	Model Dairy Plant	Dairy Plant for processing, product development, quality analysis and packaging of milk and value added milk products
2.	Fruit and Vegetable Processing Plant	Fruit and vegetable processing plant with Fruit blancher, Fruit mill, Fruit pulper, Fruit pulp finisher, Fruit juicer, Steam jacketed kettle, Raw and processed juice collection, storage pumping tank, Juice processors, Bottling machine and accessories.
3.	Ice Cream Plant	Homogeniser, HTST pasteurizer, Softy ice cream machine, freezer, cold storage plant, and automatic milk packaging machine.

Department of Food Business Management

Computer Laboratory

Computer laboratory with 20 latest version of computer, color printer, scanner is acting as online knowledge centre cum library in providing the current informations from all over the world to the students and research scholars of this college. This online informative hub is constructed with the LAN and WAN connection with hi speed internet facility and facilitate transfer of knowledge. Online data bases such as BIS standards, e-books collections and CeRAconnectivity for online reference collection and reprographic facility helps the students to plan latest and most innovative Undergraduate projects and post graduate dissertation research at CFDT. The 10 KVA UPS provides uninterrupted service to this laboratory.

6.4.5. Conduct of Practical and Hands-on-Training

Practical classes are conducted as per the course curriculum utilizing the available resources in the variouslaboratories and food plants as detailed below

S. No	Practical and Hands-on-Training conducted
01.	Hands on experience on the manufacturing of dairy products, calculation of cost of production. Production chart and the processing equipments.
02	Practical and hands on training for manufacturing of Khoa, Peda, Burfi and other indigenous dairy products, calculation of cost of production, production chart and theprocessing equipment.
03	Sensory evaluation skills for judging sensorial qualities of dairy and food products.
04	Evaluation of quality of packaging material and acquaintance to the various packaging techniques available for improving the shelf life of foods.
05	Manufacturing process, determination of production cost, operation of basic equipment infood industry.
06	Determination of fluid properties, evaluation of energy requirements for pumping of fluidand capacities of pump. Working principle of flow measuring instruments etc.
07	Working of common machines used in workshops and hands on practice over these machines.
08	Working and determination of capacities of various refrigeration systems and its use in preservation of foods. Designing of cold storage systems.
09	Acquaintance to various methods of drawings.
10	Designing of heating and cooling systems, Studies of principle of mass transfer.
11	Studies of various IC engine with respect to constructional features and cycles.

12	Calculation of energy requirements of the plant and studies on workings of commonelectric instruments and motors.
13	Studies on starter cultures and working principles of common instruments in biotechnology laboratory.
14	Evaluation of milk and milk products for various pathogens. Practical applications ofvarious international and national organizations.
15	Analysis of dairy and food products for various major and minor constituents.
16	Acquaintance to the working of various instruments, quality evaluation of dairy and food products.
17	Preparation of bankable project report. Studies on various dairy management practices.
18	Application of various statistical tools and computer programs.
19	To impart quality dairy education on plant operation and maintenance, the students are taught about quality assurance, marketing strategies, procurement of raw material, store and account management.

6.4.6. Supervision of students in PG/PhD programmes

The PG / Ph.D Programmes have been monitored as per the regulations of Tamil Nadu Veterinary and Animal Sciences University Postgraduate Regulations – 2009. It came into force from the academic year 2010-2011 onwards. The intake capacity of M.Tech (FT) is 10 per year.

Number of faculties who are qualified to handle PG programme are 21 that translates into Student -Teacher ratio of 1:1. There are 7 approved PG guides available in the College.

Name of the Chairman	**Number of M. Tech (FT) students guided**
Dr. K. Vijayarani	01
Dr. Ayyavoo Preamnath Manoharan	05
Dr. K. Brindha	01
Dr. S. Ratna Prabha	01
Dr. D. Baskaran	04
Dr. K. S. Gnanalakshmi	03
Dr. Rita Narayanan	04
Dr. A. Karthiayani	03
Dr. B. Murugan	02
Dr. Karpoora Sundara Pandian	03
Dr. D. Ramasamy	01
Dr. G. Sujatha	05
Dr. V. Nithyalakshmi	04
Dr. K. Sudha	03
Dr. Esther Magdalene Sharon	02
Dr. R. Marx Nirmal	03
Dr.V.Perasiriyan	04
Dr.T.R.Pugazhenthi	01
Dr.V. Apparao	02
Dr.P.Geetha	02
Dr.P.Selvan	01

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)

Each batch of M.Tech (Food Technology) is allotted with PG Coordinator. The Evaluation of teaching-learning process is done on semester basis bythe students. The approved feedback form is provided to all the students at the end of each semester by the Academic Coordinator. These filled in forms are being submitted to the Controller of examinations by the Educational Technology Cell. Based on the student's feedback evaluation, best teacher awards are awarded during Republic day celebrations by the Vice Chancellor of our University (Feedback evaluation proforma - enclosed in Annexure).

Further, all the M.Tech (FT) students are allotted with a Guide / Supervisor along with two Advisory Committee members to monitor the progress of research work

6.4.8. Student intake and attrition in the programme for last five yearsPost Graduate

Name of the Degree Programme	**Actual students admitted in last fiveyears**							**Attrition (%)**						
Year	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y1	Y2	Y3	Y4	Y5	Y6	Y7
	15-16	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**21-22**	**15-16**	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**21-22**
M.Tech (FT)	9	10	10	8	10	10	3	0	10	0	0	0	0	0

6.4.9. ICTApplication in Curricula Delivery

All the class rooms are provided with LED TV which can be connected through the Computer / Laptop where the power point presentation, soft copies, animations, e-course content can be displayed. It helps to improve the students' performance and concentration. The smart class rooms are equipped with sophisticated interactive boards for creating interactive atmosphere. The Wi-Fi facility is made available throughout the campus. The online informative hub is constructed with the LAN and WAN connection with hi speed internet facility and facilitate transfer of knowledge. Online data bases such as BIS standards, e-books collections and CeRA connectivity for online reference collection and reprographic facility helps the students to plan latest and most innovative Undergraduate projects and post graduate dissertation research at CFDT, Koduvalli, Chennai – 600 052.

6.4.10. The information pertaining to 6.4.1 to 6.4.9 are provided pertaining to the College of Food and DairyTechnology.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also havingweightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate

I, Dr. V.Appa Rao, Dean, College of Food and Dairy Technology, TANUVAS, Koduvalli, Chennai - 600 052 hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding University.

Name of the Degree Programme accreditation is sought for

Postgraduate Programmes

M.Tech – Food Technology

Signature of the Dean of the college
with Date & Seal
DEAN
Faculty of Food Sciences,
College of Food and Dairy Technology,
Koduveli, Alamathi-Post, Chennai-600 052

6.4 SELF STUDY REPORT
FOR
POSTGRADUATE PROGRAMME
(M.Tech – DAIRY TECHNOLOGY)

6.4. Self-Study Report for the Programme: M.Tech (DAIRY TECHNOLOGY)

6.4.1. Brief History of the Degree Programme

College of Food and Dairy Technology (CFDT) is a constituent unit of Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) which offers degree programmes in B.Tech (Food Technology) since 2006, approved by All India Council for Technical Education (AICTE) and accredited to Indian Council of Agricultural Research (ICAR) with the adoption of National syllabus framed by Department of Agricultural Research and Education (DARE), Government of India.

Milk is considered as an essential food item, the availability of which is a significant mandate of state owned Tamil Nadu Co-operative Milk Producers Federation Ltd. (TCMPF) - Aavin by regulated procurement through Milk societies from producers and supply of processed milk to consumers through its retail outlets at concessional price. To handle the milk surge at production points in villages with urging demand for milk among urbanites and requirements of skilled technocrats in milk processing industries operated by Government and Private sectors as well, Government of Tamil Nadu has instituted a degree programme in B.Tech (Dairy Technology) with an annual intake of 20 seats from the academic year 2014-15. Post Graduate Degree Programmes viz. M.Tech in Dairy Technology and Dairy Chemistry with an intake capacity of 3 seats per year in each discipline is being offered by this College from the academic year 2019-20.

Courses offered at CFDT

Degree	Specialization	Duration	Annual intake
B.Tech	Food Technology	4 Years	40
B.Tech	Dairy Technology	4 Years	20
M.Tech	Food Technology	2 Years	10
M.Tech*	Dairy Technology	2 Years	03
M.Tech*	Dairy Chemistry	2 Years	03
Ph.D	Food Technology	3 Years	05

* M.Tech in Dairy Technology and Dairy Chemistry are being offered from the academic year 2019-20

Proposed course for ICAR accreditation

Degree	Specialization
M.Tech	Dairy Technology

6.4.2. Faculty Strength

College wise faculty strength

S.No.	Designation	Sanctioned	Filled	Vacant
1	Dean	1	1	0
2	Professor	2	1	1
3	Associate Professor	9	8	1
4	Assistant Professor	16	14	2
5	Assistant Librarian	1	1	0
	Total	29	25	4

Faculty strength for Dairy Technology Programme

S.No.	Designation	Sanctioned	Filled	Vacant
1	Associate Professor	2	2	0
2	Assistant Professor	3	3	0
	Total	5	5	0

Department wise faculty strength of college is given in the following tableDepartment of Dairy Technology

S.No.	Designation	Sanctioned	Filled	Vacant
1	Assistant Professor	1	1	0
	Total	1	1	0

Department of Dairy Engineering

S.No.	Designation	Sanctioned	Filled	Vacant
1	Assistant Professor	1	1	0
	Total	1	1	0

Department of Dairy Chemistry

S.No.	Designation	Sanctioned	Filled	Vacant
1	Associate Professor	1	1*	0
	Total	1	1	0

*Assistant Professor shown against the post of Associate Professor

Department of Dairy Microbiology

S.No.	Designation	Sanctioned	Filled	Vacant
1	Associate Professor	1	1	0
	Total	1	1	0

Department of Dairy Business Management

S.No.	Designation	Sanctioned	Filled	Vacant
1	Assistant Professor	1	1	0
	Total	1	1	0

Library Staff

S.No.	Designation	Sanctioned	Filled	Vacant
1	Assistant Librarian	1	1*	0
	Total	1	1	0

*Deputy Librarian shown against the post of Assistant Librarian

6.4.3. Technical and Supporting staff

Name of the College	Teaching staff			Technical and supporting staff			Administrative staff		
College of Food and Dairy Technology	**Sanctioned**	**Filled**	**Vacant**	**Sanctioned**	**Filled**	**Vacant**	**Sanctioned**	**Filled**	**Vacant**
	29	24	5	22	12	10*	12	6	6*

*Vacant posts for technical and supporting /administrative staff filled in by outsourcing

6.4.4. Classrooms and Laboratories

I. Infrastructure available for teaching

S. No	Name of the Infrastructure	Numbers available	Area (in Sq.m)
1.	Total number of class rooms	10	524.59
2.	Class rooms with ICT facility	9	494.5
3.	Students'laboratory	10	1932.21
4.	Research laboratories	1	110.57
5.	Seminar Hall	1	47.79
6.	Smart class room	1	63.28
7.	Any other facility		
	Auditorium	1	179.52
	Examination Hall	1	548.00

II. Laboratories

S. No	Name of the laboratory	Equipment / instrument
1.	Dairy Food Quality and Safety Laboratory	PCR machine, Bio-safety cabinet, , Binocular Microscopes, Autoclaves, Hot air oven, Incubators, BOD incubator, Water baths, Anaerobic jar, Balances, pH meter, Distilled water still.
2.	Dairy Food Analysis Laboratory	Double beam UV-VIS Spectrophotometer, Thin layer chromatography, Rough balance, Cyclo mixer, Hot plate, Hot air oven, Water bath rectangular 12 holes, Weighing balance-5kg, Weighing balance-1kg, Serological water bath, Gerber centrifuge, Automatic fat/oil solvent extraction system, Automatic fibre analysis system, Hot air oven, Bacteriological Incubator, Distillation Assembly with heating mantle, Automatic protein Distillation System, Automatic protein Digestion system, Muffle furnace, Double door Refrigerator.
3.	Bakery, Confectionary Laboratory	Chocolate sizing machine, Chocolate cutting machine, Confectionery roller, Lolly pop machine, Microwave oven, OTGs, Planetary mixer, Deck oven

4.	Fish Processing Laboratory	Air Blast Freezer, Retort pouch processing machine, Semiautomatic can double seaming machine, Manual meat mincer, Modern fish processing tables (SS), Pasta making machine, Deep freezer, Smoking Kiln, Tray Dryer, Balance.
5.	Meat and Poultry Processing Laboratory	Meat mincer, Sausage stuffer, Bowl chopper, Meat Slicer, Electric Fryer, Scalding tank, Electric tandoor,Egg breaking instrument, Spirometer, Candling box.
6.	Engineering Properties Testing Laboratory	Porosity apparatus, Coefficient of friction apparatus, Impact tester, Angle of repose apparatus, Plunger machine, Bursting strength tester, Cobb sizing tester
7.	Food Technology Laboratory	UV-Visible Spectrophotometer, Flame Photometer, Calorimeter, Homogeniser, Muffle furnace, Vacuum packing machine, Centrifuges, Thin Layer Chromatography, Poly Acryl amide Gel Electrophoresis, Soxhlet for fat estimation, Micro-Kjeldhal, Vacuum evaporator, pH meter, Magnetic Stirrer, Triple distilled water unit, Portable digital pH meters, Refractometers, Physical and analytical balances
8.	Cereal, Pulses and Spices Processing Laboratory	Spice Cleaning, Spice pulveriser, Form fill packaging machine, Mini Rice Mill, Cottage level soya processing unit, Wheat grader, Destoner, Seed grader, Tunnel solar dryer, Rice sheller.
9.	Pilot Dairy Plant	Dairy Plant for processing, product development, quality analysis and packaging of milk and value added milk products
10.	Fruit and Vegetable Processing Plant	Fruit and vegetable processing plant with Fruit blancher, Fruit mill, Fruit pulper, Fruit pulp finisher, Fruit juicer, Steam jacketed kettle, Raw and processed juice collection, storage pumping tank, Juice processors, Bottling machine and accessories.
11.	Ice Cream Plant	Homogeniser, HTST pasteurizer, Softy ice cream machine, freezer, cold storage plant, and automatic milk packaging machine.

Dairy Business Management

Computer laboratory with 20 latest version of computer, color printer, scanner is acting as online knowledge centre cum library in providing the current informations from all over the world to the students and research scholars of this college. This online informative hub is constructed with the LAN and WAN connection with hi speed internet facility and facilitate transfer of knowledge. Online data bases such as BIS standards, e-books collections and CeRA connectivity for online reference collection and reprographic facility helps the students to plan latest and most innovative Undergraduate projects and post graduate dissertation research at CFDT. The 10kva UPS provides uninterrupted service to this laboratory.

Postgraduate Laboratories and Equipments

1. High Performance Liquid Chromatography
2. Protein Analyser
3. Automated Fibre Analyser
4. Automated Fat Analyser
5. Gas Chromatography with Mass Spectrophotometry

6. iCE3500 Double Beam Dual Atomiser AA Spectrometer Wide Range 180-900nm

7. Thermal cycler

8. -80^{o}C deep freezer

9. -20^{o}C deep freezer

6.4.5. Conduct of Practical and Hands-on-Training

Practical classes are conducted as per the course curriculum utilizing the available resources in the variouslaboratories and food plants as detailed below

S. No	Practical and Hands-on-Training conducted
01.	Hands on experience on the manufacturing of dairy products, calculation of cost of production. Production chart and the processing equipments.
02	Practical and hands on training for manufacturing of Khoa, Peda, Burfi and other indigenous dairy products, calculation of cost of production, production chart and theprocessing equipment.
03	Sensory evaluation skills for judging sensorial qualities of dairy and food products.
04	Evaluation of quality of packaging material and acquaintance to the various packaging techniques available for improving the shelf life of foods.
05	Manufacturing process, determination of production cost, operation of basic equipment infood industry.
06	Determination of fluid properties, evaluation of energy requirements for pumping of fluidand capacities of pump. Working principle of flow measuring instruments etc.
07	Working of common machines used in workshops and hands on practice over these machines.
08	Working and determination of capacities of various refrigeration systems and its use in preservation of foods. Designing of cold storage systems.
09	Acquaintance to various methods of drawings.
10	Designing of heating and cooling systems, Studies of principle of mass transfer.
11	Studies of various IC engine with respect to constructional features and cycles.
12	Calculation of energy requirements of the plant and studies on workings of commonelectric instruments and motors.
13	Studies on starter cultures and working principles of common instruments in biotechnology laboratory.
14	Evaluation of milk and milk products for various pathogens. Practical applications ofvarious international and national organizations.
15	Analysis of dairy and food products for various major and minor constituents.
16	Acquaintance to the working of various instruments, quality evaluation of dairy and food products.
17	Preparation of bankable project report. Studies on various dairy management practices.
18	Application of various statistical tools and computer programs.
19	To impart quality dairy education on plant operation and maintenance, the students are taught about quality assurance, marketing strategies, procurement of raw material, store and account management.

6.4.6. Supervision of students in PG/PhD programmes

The PG / Ph.D Programmes have been monitored as per the regulations of Tamil Nadu Veterinary and Animal Sciences University Postgraduate Regulations – 2009. It came into force from the academic year 2010-2011 onwards. M.Tech in Dairy Technology and Dairy Chemistry are being offered from the year 2019-2020 with an admission strengthof 3 in each programme.

Number of faculties who are qualified to handle PG programme are 21 that translates into Student -Teacher ratio of 1:1. There are 7 approved PG guides available in the College.

Name of the Chairman	Number of M. Tech (DT) students guided
Dr. B. Murugan	02
Dr. Karpoora Sundara Pandian	02
Dr. K. Sudha	01
Dr.G.M Sivakumar	01

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)

Each batch of M.Tech (Dairy Technology)is allotted with PG Coordinator. The Evaluation of teaching-learning process is done on semester basis bythe students. The approved feedback form is provided to all the students at the end of each semester by the Academic Coordinator. These filled in forms are being submitted to the Controller of examinations by the Educational Technology Cell. Based on the student's feedback evaluation, best teacher awards are awarded during Republic day celebrations by the Vice Chancellor of our University (Feedback evaluation proforma - enclosed in Annexure).

Further, all the M.Tech (DT) students are allotted with a Guide / Supervisor along with two Advisory Committee members to monitor the progress of research work

6.4.8. Student intake and attrition in the programme for last five yearsPost Graduate

Name of the Degree Programme	Actual students admitted in last fiveyears							Attrition (%)						
Year	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y1	Y2	Y3	Y4	Y5	Y6	Y7
	15-16	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**21-22**	**15-16**	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**21-22**
M.Tech (DT)	--	--	--	--	3	3	3	--	--	--	--	0	0	0

6.4.9. ICTApplication in Curricula Delivery

All the class rooms are provided with LED TV which can be connected through the Computer / Laptop where the power point presentation, soft copies, animations, e-course content can be displayed. It helps to improve the students' performance and concentration. The smart class rooms are equipped with sophisticated interactive boards for creating interactive atmosphere. The Wi-Fi facility is made available throughout the campus. The online informative hub is constructed with the LAN and WAN connection with hi speed internet facility and facilitate transfer of knowledge. Online data bases such as BIS standards, e-books collections and CeRA connectivity for online reference collection and reprographic facility helps the students to plan latest and most innovative Undergraduate projects and post graduate dissertation research at CFDT, Koduvalli

6.4.10. The information pertaining to 6.4.1 to 6.4.9 are provided pertaining to the College of Food and DairyTechnology.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also havingweightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate

I, Dr. V.Appa Rao, Dean, College of Food and Dairy Technology, TANUVAS, Koduvalli, Chennai - 600 052 hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding University.

Name of the Degree Programme accreditation is sought for

Postgraduate Programmes

M.Tech – Dairy Technology

Signature of the Dean of the college
with Date & Seal

DEAN
Faculty of Food Sciences,
College of Food and Dairy Technology,
Koduveli, Alamathi-Post, Chennai-600 052

6.4 SELF STUDY REPORT
FOR
POSTGRADUATE PROGRAMME
(M.Tech – Dairy Chemistry)

6.4. Self-Study Report for the Programme: M.Tech (Dairy Chemistry)

6.4.1. Brief History of the Degree Programme

College of Food and Dairy Technology (CFDT) is a constituent unit of Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) which offers degree programmes in B.Tech (Food Technology) since 2006, approved by All India Council for Technical Education (AICTE) and accredited to Indian Council of Agricultural Research (ICAR) with the adoption of National syllabus framed by Department of Agricultural Research and Education (DARE), Government of India.

Milk is considered as an essential food item, the availability of which is a significant mandate of state owned Tamil Nadu Co-operative Milk Producers Federation Ltd. (TCMPF) - Aavin by regulated procurement through Milk societies from producers and supply of processed milk to consumers through its retail outlets at concessional price. To handle the milk surge at production points in villages with urging demand for milk among urbanites and requirements of skilled technocrats in milk processing industries operated by Government and Private sectors as well, Government of Tamil Nadu has instituted a degree programme in B.Tech (Dairy Technology) with an annual intake of 20 seats from the academic year 2014-15. Post Graduate Degree Programmes viz. M.Tech in Dairy Technology and Dairy Chemistry with an intake capacity of 3 seats per year in each discipline is being offered by this College from the academic year 2019-20.

Courses offered at CFDT

Degree	Specialization	Duration	Annual intake
B.Tech	Food Technology	4 Years	40
B.Tech	Dairy Technology	4 Years	20
M.Tech	Food Technology	2 Years	10
M.Tech*	Dairy Technology	2 Years	03
M.Tech*	Dairy Chemistry	2 Years	03
Ph.D	Food Technology	3 Years	05

*M.Tech in Dairy Technology and Dairy Chemistry are being offered from the academic year 2019-20

Proposed course for ICAR accreditation

Degree	Specialization
M.Tech	Dairy Chemistry

6.4.2. Faculty Strength

College wise faculty strength

S.No.	Designation	Sanctioned	Filled	Vacant
1	Dean	1	1	0
2	Professor	2	1	1
3	Associate Professor	9	8	1
4	Assistant Professor	16	14	2
5	Assistant Librarian	1	1	0
	Total	29	25	4

Faculty strength for Dairy Technology Programme

S.No.	Designation	Sanctioned	Filled	Vacant
1	Associate Professor	2	2	0
2	Assistant Professor	3	3	0
	Total	5	5	0

Department wise faculty strength of college is given in the following tableDepartment of Dairy Technology

S.No.	Designation	Sanctioned	Filled	Vacant
1	Assistant Professor	1	1	0
	Total	1	1	0

Department of Dairy Engineering

S.No.	Designation	Sanctioned	Filled	Vacant
1	Assistant Professor	1	1	0
	Total	1	1	0

Department of Dairy Chemistry

S.No.	Designation	Sanctioned	Filled	Vacant
1	Associate Professor	1	1*	0
	Total	1	1	0

*Assistant Professor shown against the post of Associate Professor

Department of Dairy Microbiology

S.No.	Designation	Sanctioned	Filled	Vacant
1	Associate Professor	1	1	0
	Total	1	1	0

Department of Dairy Business Management

S.No.	Designation	Sanctioned	Filled	Vacant
1	Assistant Professor	1	1	0
	Total	1	1	0

Library Staff

S.No.	Designation	Sanctioned	Filled	Vacant
1	Assistant Librarian	1	1*	0
	Total	1	1	0

*Deputy Librarian shown against the post of Assistant Librarian

6.4.3. Technical and Supporting staff

Name of the College	Teaching staff			Technical and supporting staff			Administrative staff		
College of Food and Dairy Technology	Sanctioned	Filled	Vacant	Sanctioned	Filled	Vacant	Sanctioned	Filled	Vacant
	29	24	5	22	12	10*	12	6	6*

*Vacant posts for technical and supporting /administrative staff filled in by outsourcing

6.4.4. Classrooms and Laboratories

I. Infrastructure available for teaching

S. No	Name of the Infrastructure	Numbers available	Area (in Sq.m)
1.	Total number of class rooms	10	524.59
2.	Class rooms with ICT facility	9	494.5
3.	Students'laboratory	10	1932.21
4.	Research laboratories	1	110.57
5.	Seminar Hall	1	47.79
6.	Smart class room	1	63.28
7.	Any other facility		
	Auditorium	1	179.52
	Examination Hall	1	548.00

II. Laboratories

S. No	Name of the laboratory	Equipment / instrument
1.	Dairy Food Quality and Safety Laboratory	PCR machine, Bio-safety cabinet, , Binocular Microscopes, Autoclaves, Hot air oven, Incubators, BOD incubator, Water baths, Anaerobic jar, Balances, pH meter, Distilled water still.
2.	Dairy Food Analysis Laboratory	Double beam UV-VIS Spectrophotometer, Thin layer chromatography, Rough balance, Cyclo mixer, Hot plate, Hot air oven, Water bath rectangular 12 holes, Weighing balance-5kg, Weighing balance-1kg, Serological water bath, Gerber centrifuge, Automatic fat/oil solvent extraction system, Automatic fibre analysis system, Hot air oven, Bacteriological Incubator, Distillation Assembly with heating mantle, Automatic protein Distillation System, Automatic protein Digestion system, Muffle furnace, Double door Refrigerator.
3.	Bakery, Confectionary Laboratory	Chocolate sizing machine, Chocolate cutting machine, Confectionery roller, Lolly pop machine, Microwave oven, OTGs, Planetary mixer, Deck oven
4.	Fish Processing Laboratory	Air Blast Freezer, Retort pouch processing machine, Semiautomatic can double seaming machine, Manual meat mincer, Modern fish processing tables (SS), Pasta making machine, Deep freezer, Smoking Kiln, Tray Dryer, Balance.

5.	Meat and Poultry Processing Laboratory	Meat mincer, Sausage stuffer, Bowl chopper, Meat Slicer, Electric Fryer, Scalding tank, Electric tandoor, Egg breaking instrument, Spirometer, Candling box.
6.	Engineering Properties Testing Laboratory	Porosity apparatus, Coefficient of friction apparatus, Impact tester, Angle of repose apparatus, Plunger machine, Bursting strength tester, Cobb sizing tester
7.	Food Technology Laboratory	UV-Visible Spectrophotometer, Flame Photometer, Calorimeter, Homogeniser, Muffle furnace, Vacuum packing machine, Centrifuges, Thin Layer Chromatography, Poly Acryl amide Gel Electrophoresis, Soxhlet for fat estimation, Micro-Kjeldhal, Vacuum evaporator, pH meter, Magnetic Stirrer, Triple distilled water unit, Portable digital pH meters, Refractometers, Physical and analytical balances
8.	Cereal, Pulses and Spices Processing Laboratory	Spice Cleaning, Spice pulveriser, Form fill packaging machine, Mini Rice Mill, Cottage level soya processing unit, Wheat grader, Destoner, Seed grader, Tunnel solar dryer, Rice sheller.
9.	Pilot Dairy Plant	Dairy Plant for processing, product development, quality analysis and packaging of milk and value added milk products
10.	Fruit and Vegetable Processing Plant	Fruit and vegetable processing plant with Fruit blancher, Fruit mill, Fruit pulper, Fruit pulp finisher, Fruit juicer, Steam jacketed kettle, Raw and processed juice collection, storage pumping tank, Juice processors, Bottling machine and accessories.
11.	Ice Cream Plant	Homogeniser, HTST pasteurizer, Softy ice cream machine, freezer, cold storage plant, and automatic milk packaging machine.

Dairy Business Management

Computer laboratory with 20 latest version of computer, color printer, scanner is acting as online knowledge centre cum library in providing the current informations from all over the world to the students and research scholars of this college. This online informative hub is constructed with the LAN and WAN connection with hi speed internet facility and facilitate transfer of knowledge. Online data bases such as BIS standards, e-books collections and CeRA connectivity for online reference collection and reprographic facilityhelps the students to plan latest and most innovative Undergraduate projects and post graduate dissertation research at CFDT. The 10kva UPS provides uninterrupted service to this laboratory.

Postgraduate Laboratories and Equipments

1. High Performance Liquid Chromatography
2. Protein Analyser
3. Automated Fibre Analyser
4. Automated Fat Analyser
5. Gas Chromatography with Mass Spectrophotometry
6. iCE3500 Double Beam Dual Atomiser AA Spectrometer Wide Range 180-900nm
7. Thermal cycler
8. -80^{o}C deep freezer
9. -20^{o}C deep freezer

6.4.5. Conduct of Practical and Hands-on-Training

Practical classes are conducted as per the course curriculum utilizing the available resources in the variouslaboratories and food plants as detailed below

S. No	Practical and Hands-on-Training conducted
01.	Hands on experience on the manufacturing of dairy products, calculation of cost of production. Production chart and the processing equipments.
02	Practical and hands on training for manufacturing of Khoa, Peda, Burfi and other indigenous dairy products, calculation of cost of production, production chart and theprocessing equipment.
03	Sensory evaluation skills for judging sensorial qualities of dairy and food products.
04	Evaluation of quality of packaging material and acquaintance to the various packaging techniques available for improving the shelf life of foods.
05	Manufacturing process, determination of production cost, operation of basic equipment infood industry.
06	Determination of fluid properties, evaluation of energy requirements for pumping of fluidand capacities of pump. Working principle of flow measuring instruments etc.
07	Working of common machines used in workshops and hands on practice over these machines.
08	Working and determination of capacities of various refrigeration systems and its use in preservation of foods. Designing of cold storage systems.
09	Acquaintance to various methods of drawings.
10	Designing of heating and cooling systems, Studies of principle of mass transfer.
11	Studies of various IC engine with respect to constructional features and cycles.
12	Calculation of energy requirements of the plant and studies on workings of commonelectric instruments and motors.
13	Studies on starter cultures and working principles of common instruments in biotechnology laboratory.
14	Evaluation of milk and milk products for various pathogens. Practical applications ofvarious international and national organizations.
15	Analysis of dairy and food products for various major and minor constituents.
16	Acquaintance to the working of various instruments, quality evaluation of dairy and food products.
17	Preparation of bankable project report. Studies on various dairy management practices.
18	Application of various statistical tools and computer programs.
19	To impart quality dairy education on plant operation and maintenance, the students are taught about quality assurance, marketing strategies, procurement of raw material, store and account management.

6.4.6. Supervision of students in PG/PhD programmes

The PG / Ph.D Programmes have been monitored as per the regulations of Tamil Nadu Veterinary and Animal Sciences University Postgraduate Regulations – 2009. It came into force from the academic year 2010-2011 onwards. M.Tech inDairy Technology and Dairy Chemistry are being offered from the year 2019-2020 with an admission strengthof 3 in each programme.

Number of faculties who are qualified to handle PG programme are 21 that translates into Student -Teacher ratio of 1:1. There are 7 approved PG guides available in the College.

Name of the Chairman	Number of M. Tech (DC) students guided
Dr. Ayyavoo Preamnath Manoharan	01
Dr. K. S. Gnanalaksshmi	01
Dr. A. Karthiayani	01
Dr. Esther Magdalene Sharon	01
Dr. R. Marx Nirmal	01

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)

Each batch of M.Tech (Dairy Chemistry) are allotted with PG Coordinator. The Evaluation of teaching-learning process is done on semester basis by the students. The approved feedback form is provided to all the students at the end of each semester by the Academic Coordinator. These filled in forms are being submitted to the Controller of examinations by the Educational Technology Cell. Based on the student's feedback evaluation, best teacher awards are awarded during Republic day celebrations by the Vice Chancellor of our University (Feedback evaluation proforma - enclosed in Annexure).

Further, all the M.Tech (DC) students are allotted with a Guide / Supervisor along with two Advisory Committee members to monitor the progress of research work

6.4.8. Student intake and attrition in the programme for last five yearsPost Graduate

Name of the Degree Programme	Actual students admitted in last fiveyears							Attrition (%)						
Year	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y1	Y2	Y3	Y4	Y5	Y6	Y7
	15-16	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**21-22**	**15-16**	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**21-22**
M.Tech (DC)	--	--	--	--	3	3	0	--	--	--	--	0	0	0

6.4.9. ICTApplication in Curricula Delivery

All the class rooms are provided with LED TV which can be connected through the Computer / Laptop where the power point presentation, soft copies, animations, e-course content can be displayed. It helps to improve the students' performance and concentration. The smart class rooms are equipped with sophisticated interactive boards for creating interactive atmosphere. The Wi-Fi facility is made available throughout the campus. The online informative hub is constructed with the LAN and WAN connection with hi speed internet facility and facilitate transfer of knowledge. Online data bases such as BIS standards, e-books collections and CeRA connectivity for online reference collection and reprographic facility helps the students to plan latest and most innovative Undergraduate projects and post graduate dissertation research at CFDT, Koduvalli, Chennai – 600 052

6.4.10. The information pertaining to 6.4.1 to 6.4.9 are provided pertaining to the College of Food and DairyTechnology.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also havingweightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate

I, Dr. V.Appa Rao, Dean, College of Food and Dairy Technology, TANUVAS, Koduvalli, Chennai - 600 052 hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding University.

Name of the Degree Programme accreditation is sought for

Postgraduate Programmes

M.Tech – Dairy Chemistry

Signature of the Dean of the college
with Date & Seal

DEAN
Faculty of Food Sciences,
College of Food and Dairy Technology,
Koduveli, Alamathi-Post, Chennai-600 052

6.4 SELF STUDY REPORT
FOR
DOCTORAL PROGRAMME
(Ph.D – Food Technology)

6.4. Self-Study Report for the Programme: Ph.D (Food Technology)

6.4.1. Brief History of the Degree Programme

College of Food and Dairy Technology (CFDT) is a constituent unit of Tamil Nadu Veterinary and Animal Sciences University (TANUVAS) which offers degree programmes in B.Tech (Food Technology) since 2006, approved by All India Council for Technical Education (AICTE) and accredited to Indian Council of Agricultural Research (ICAR) with the adoption of National syllabus framed by Department of Agricultural Research and Education (DARE), Government of India.

To cater to the rising demand in skilled manpower requirement in food processing sector, a degree programme in B.Tech (Food Technology) with an intake capacity of 20 seats per year has been incepted during the year 2006 at this Institute of Food and Dairy Technology which attained a state of full-fledged educational organization under the ambit of Tamil Nadu Veterinary and Animal Sciences University for the ultimate output of professional graduates specialized in food processing, quality control, novel nutritious product development, food trade and business management. Institute of Food and Dairy Technology has been renamed as College of Food and Dairy Technology (CFDT) in the year 2012 with the induction of Post Graduate programmes in M.Tech and Ph.D (Food Technology) from the year 2011-2012 and 2013-2014 with the present intake of 10 and 5 seats respectively.

Courses offered at CFDT

Degree	Specialization	Duration	Annual intake
B.Tech	Food Technology	4 Years	40
B.Tech	Dairy Technology	4 Years	20
M.Tech	Food Technology	2 Years	10
M.Tech*	Dairy Technology	2 Years	03
M.Tech*	Dairy Chemistry	2 Years	03
Ph.D	Food Technology	3 Years	05

* M.Tech in Dairy Technology and Dairy Chemistry are being offered from the academic year 2019-20

Proposed course for ICAR accreditation

Degree	Specialization
Ph.D	Food Technology

6.4.2. Faculty Strength

College wise faculty strength

S.No.	Designation	Sanctioned	Filled	Vacant
1	Dean	1	1	0
2	Professor	2	1	1
3	Associate Professor	9	8	1
4	Assistant Professor	16	14	2
5	Assistant Librarian	1	1	0
	Total	29	25	4

Department wise faculty strength of college is given in the following table

Department of Food Processing Technology

S.No.	Designation	Sanctioned	Filled	Vacant
1	Professor	1	-	1
2	Associate Professor	2	2*	0
3	Assistant Professor	4	4	0
	Total	7	6	1

*One Professor shown against the post of Associate Professor

Department of Food Process Engineering

S.No.	Designation	Sanctioned	Filled	Vacant
1	Professor	1	1	0
2	Associate Professor	2	1*	1
3	Assistant Professor	4	3	1
	Total	7	5	2

*One Assistant Professor shown against the post of Associate Professor

Department of Food Safety and Quality Assurance

S.No.	Designation	Sanctioned	Filled	Vacant
1	Associate Professor	2	2*	0
2	Assistant Professor	3	2	1
	Total	5	4	1

*One Professor shown against the post of Associate Professor

Department of Food Business Management

S.No.	Designation	Sanctioned	Filled	Vacant
1	Associate Professor	1	1*	0
2	Assistant Professor	1	1	0
	Total	2	2	0

*Professor shown against the post of Associate Professor

Department of Food Plant Operations

S.No.	Designation	Sanctioned	Filled	Vacant
1	Assistant Professor	1	1	0
	Total	1	1	0

Library Staff

S.No.	Designation	Sanctioned	Filled	Vacant
1	Assistant Librarian	1	1*	0
	Total	1	1	0

*Deputy Librarian shown against the post of Assistant Librarian

6.4.3. Technical and Supporting staff

Name of the College	Teaching staff			Technical and supporting staff			Administrative staff		
College of Food and Dairy Technology	Sanctioned	Filled	Vacant	Sanctioned	Filled	Vacant	Sanctioned	Filled	Vacant
	29	24	5	22	12	10*	12	6	6*

*Vacant posts for technical and supporting /administrative staff filled in by outsourcing

6.4.4. Classrooms and Laboratories

I. Infrastructure available for teaching

S. No	Name of the Infrastructure	Numbers available	Area (in Sq.m)
1.	Total number of class rooms	10	524.59
2.	Class rooms with ICT facility	9	494.5
3.	Students' laboratory	10	1932.21
4.	Research laboratories	1	110.57
5.	Seminar Hall	1	47.79
6.	Smart class room	1	63.28
7.	Any other facility		
	Auditorium	1	179.52
	Examination Hall	1	548.00

II. Laboratories

Department of Food Processing Technology

S. No	Name of the Laboratory	Name of the instrument / equipment
1.	Food Technology Laboratory	UV-Visible Spectrophotometer, Flame Photometer, Calorimeter, Homogeniser, Muffle furnace, Vacuum packing machine, Centrifuges, Thin Layer Chromatography, Poly Acryl amide Gel Electrophoresis, Soxhlet for fat estimation, Micro-Kjeldhal, Vacuum evaporator, pH meter, Magnetic Stirrer, Triple distilled water unit, Portable digital pH meters, Refractometers, Physical and analytical balances.
2.	Bakery, Confectionary Laboratory	Chocolate sizing machine, Chocolate cutting machine, Confectionery roller, Lolly pop machine, Microwave oven, OTGs, Planetary mixer, Deck oven

3.	Fish Processing Laboratory	Air Blast Freezer, Retort pouch processing machine, Semiautomatic can double seaming machine, Manual meat mincer, Modern fish processing tables (SS), Pasta making machine, Deep freezer, Smoking Kiln, Tray Dryer, Balance.
4.	Meat and Poultry Processing Laboratory	Meat mincer, Sausage stuffer, Bowl chopper, Meat Slicer, Electric Fryer, Scalding tank, Electric tandoor, Egg breaking instrument, Spirometer, Candling box.

Department of Food Process Engineering

S. No	Name of the Laboratory	Name of the instrument / equipment
1.	Thermal Engineering & Refrigeration Laboratory	Shell & Tube heat exchanger, Plate type heat exchanger, Thermal conductivity of metal rod, Heat transfer in forced convection, Heat pipe apparatus, Refrigeration cycle demonstrator, Vapour absorption refrigeration system demonstrator.
2.	Electrical Engineering Laboratory	Induction motors, Transformers, Starters, Loading Rheostats, Measuring instruments.
3.	Instrumentation and Process Control Laboratory	Programmable logic controllers, Temperature measuring devices, U-tube manometer, Orifice, Venturimeter, Pitot tube, Anemometer.
4.	Engineering Properties Testing Laboratory	Porosity apparatus, Coefficient of friction apparatus, Impact tester, Angle of repose apparatus, Plunger machine, Bursting strength tester, Cobb sizing tester
5.	Cereal, Pulses and Spices Processing Laboratory	Spice Cleaning, Spice pulveriser, Form fill packaging machine, Mini Rice Mill, Cottage level soya processing unit, Wheat grader, Destoner, Seed grader, Tunnel solar dryer, Rice sheller.
6.	Engineering Drawing Hall	Drawing tables and accessories
7.	Work shop (Carpentry & Fitting, Welding & Smithy, Machine shop)	Lathe, Drilling machines, Welding machines, Bench vice, Pipe vice, Carpentry vice.
8.	Basic Sciences Laboratory	Travelling Microscope, Tarson Pendulum, Water baths, Vernier calliper, Screw gauge.

Department of Food Safety and Quality Assurance

S. No	Name of the Laboratory	Name of the instrument / equipment
1.	Food Microbiology Laboratory	PCR machine, Bio-safety cabinet, ELISA, Lyophilizer, Binocular Microscopes, Autoclaves, Hot air oven, Incubators, BOD incubator, Water baths, Anaerobic jar, Balances, pH meter, Distilled water still.
2.	Food Chemistry Laboratory	Double beam UV-VIS Spectrophotometer, Thin layer chromatography, Rough balance, Cyclo mixer, Hot plate, Hot air oven, Water bath rectangular 12 holes, Weighing balance-5kg, Weighing balance-1kg, Serological water bath, Gerber centrifuge, Automatic fat/oil solvent extraction system, Automatic fibre analysis system, Hot air oven, Bacteriological Incubator, Distillation Assembly with heating mantle, Automatic protein Distillation System, Automatic protein Digestion system, Muffle furnace, Double door Refrigerator.

Department of Food Plant Operations

S. No	Name of the Laboratory	Name of the instrument / equipment
1.	Model Dairy Plant	Dairy Plant for processing, product development, quality analysis and packaging of milk and value added milk products
2.	Fruit and Vegetable Processing Plant	Fruit and vegetable processing plant with Fruit blancher, Fruit mill, Fruit pulper, Fruit pulp finisher, Fruit juicer, Steam jacketed kettle, Raw and processed juice collection, storage pumping tank, Juice processors, Bottling machine and accessories.
3.	Ice Cream Plant	Homogeniser, HTST pasteurizer, Softy ice cream machine, freezer, cold storage plant, and automatic milk packaging machine.

Department of Food Business Management

Computer Laboratory

Computer laboratory with 20 latest version of computer, color printer, scanner is acting as online knowledge centre cum library in providing the current informations from all over the world to the students and research scholars of this college. This online informative hub is constructed with the LAN and WAN connection with hi speed internet facility and facilitate transfer of knowledge. Online data bases such as BIS standards, e-books collections and CeRA connectivity for online reference collection and reprographic facility helps the students to plan latest and most innovative Undergraduate projects and post graduate dissertation research at CFDT. The 10kva UPS provides uninterrupted service to this laboratory.

Postgraduate Laboratories and Equipments:

1. High Performance Liquid Chromatography
2. Protein Analyser
3. Automated Fibre Analyser
4. Automated Fat Analyser
5. Gas Chromatography with Mass Spectrophotometry
6. iCE3500 Double Beam Dual Atomiser AA Spectrometer Wide Range 180-900nm
7. Thermal cycler
8. -80^{o}C deep freezer
9. -20^{o}C deep freezer

6.4.5. Conduct of Practical and Hands-on-Training

Practical classes are conducted as per the course curriculum utilizing the available resources in the various laboratories and food plants as detailed below

S. No	Practical and Hands-on-Training conducted
01.	Hands on experience on the manufacturing of dairy products, calculation of cost of production. Production chart and the processing equipments.
02	Practical and hands on training for manufacturing of Khoa, Peda, Burfi and other indigenous dairy products, calculation of cost of production, production chart and theprocessing equipment.
03	Sensory evaluation skills for judging sensorial qualities of dairy and food products.
04	Evaluation of quality of packaging material and acquaintance to the various packaging techniques available for improving the shelf life of foods.
05	Manufacturing process, determination of production cost, operation of basic equipment infood industry.
06	Determination of fluid properties, evaluation of energy requirements for pumping of fluidand capacities of pump. Working principle of flow measuring instruments etc.
07	Working of common machines used in workshops and hands on practice over thesemachines.
08	Working and determination of capacities of various refrigeration systems and its use in preservation of foods. Designing of cold storage systems.
09	Acquaintance to various methods of drawings.
10	Designing of heating and cooling systems, Studies of principle of mass transfer.
11	Studies of various IC engine with respect to constructional features and cycles.
12	Calculation of energy requirements of the plant and studies on workings of commonelectric instruments and motors.
13	Studies on starter cultures and working principles of common instruments in biotechnology laboratory.
14	Evaluation of milk and milk products for various pathogens. Practical applications ofvarious international and national organizations.
15	Analysis of dairy and food products for various major and minor constituents.
16	Acquaintance to the working of various instruments, quality evaluation of dairy and foodproducts.
17	Preparation of bankable project report. Studies on various dairy management practices.
18	Application of various statistical tools and computer programs.
19	To impart quality dairy education on plant operation and maintenance, the students are taught about quality assurance, marketing strategies, procurement of raw material, store and account management.

6.4.6. Supervision of students in PG/PhD programmes

The PG / Ph.D Programmes have been monitored as per the regulations of Tamil Nadu Veterinary and Animal Sciences University Postgraduate Regulations – 2009. It came into force from the academic year 2010-2011 onwards. The intake capacity of Ph.D (FT) is 5 Students per year.

Number of faculties who are qualified to handle PG programme are 21 that translates into Student - Teacher ratio of 1:1. There are 7 approved PG guides available in the College.

Name of the Chairman	Number of Ph.D (FT) students guided
Dr. K. Vijayarani	01
Dr. Ayyavoo Preamnath Manoharan	02
Dr. D. Baskaran	03
Dr. K. S. Gnanalakshmi	01
Dr. Rita Narayanan	03
Dr. A. Karthiayani	01
Dr. B. Murugan	02
Dr. D. Ramasamy	01
Dr. G. Sujatha	01
Dr.V.Perasiriyan	01
Dr.T.R.Pugazhenthi	01
Dr.V. Apparao	01
Dr.A.Mangala Gowri	01

6.4.7. Feedback of stakeholders (Students, parents, industries, employers, farmers etc.)

Each batch of Ph.D (Food Technology) is allotted with PG Coordinator. The Evaluation of teaching-learning process is done on semester basis bythe students. The approved feedback form is provided to all the students at the end of each semester by the Academic Coordinator. These filled in forms are being submitted to the Controller of examinations by the Educational Technology Cell. Based on the student's feedback evaluation, best teacher awards are awarded during Republic day celebrations by the Vice Chancellor of our University (Feedback evaluation proforma - enclosed in Annexure).

Further, all the Ph.D (FT) students are allotted with a Guide / Supervisor along with three Advisory Committee members to monitor the progress of research work.

6.4.8. Student intake and attrition in the programme for last five yearsPost Graduate

Name of the Degree Programme	Actual students admitted in last fiveyears							Attrition (%)						
Year	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y1	Y2	Y3	Y4	Y5	Y6	Y7
	15-16	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**21-22**	**15-16**	**16-17**	**17-18**	**18-19**	**19-20**	**20-21**	**21-22**
PhD (FT)	5	4	3	2	5	5	0	--	50	0	0	0	0	0

6.4.9. ICTApplication in Curricula Delivery

All the class rooms are provided with LED TV which can be connected through the Computer / Laptop where the power point presentation, soft copies, animations, e-course content can be displayed. It helps to improve the students' performance and concentration. The smart class rooms are equipped with sophisticated interactive boards for creating interactive atmosphere. The Wi-Fi facility is made available throughout the campus. The online informative hub is constructed with the LAN and WAN connection with hi speed internet facility and facilitate transfer of knowledge. Online data bases such as BIS standards, e-books collections and CeRA connectivity for online reference collection and reprographic facility helps the students to plan latest and most innovative Undergraduate projects and post graduate dissertation research at CFDT, Koduvalli

6.4.10. The information pertaining to 6.4.1 to 6.4.9 are provided pertaining to the College of Food and DairyTechnology.

6.4.11. Since the accreditation of Programmes is related to the All India Admission from ICAR and also havingweightage for College accreditation, therefore the data presented in the section 6.4 is liable to the verification at any stage.

6.4.12. Certificate

I, Dr. V.Appa Rao, Dean, College of Food and Dairy Technology, TANUVAS, Koduvalli, Chennai - 600 052 hereby certify that the information contained in the Section 6.4.1 to 6.4.9 are furnished as per the records available in the college, and degree awarding University.

Name of the Degree Programme accreditation is sought for

Doctoral Programme

Ph.D – Food Technology

Signature of the Dean of the college
with Date & Seal

DEAN
Faculty of Food Sciences,
College of Food and Dairy Technology,
Koduveli, Alamathi-Post, Chennai-600 052

Annexure

Annexure 1

EVALUATION OF TEACHERS BY STUDENTS

(done after completion of every course)

Name of the Teacher :

Designation :

Department :

Course No., Title & Credit hours :

Start date of the semester :

Closure date of the semester :

(tick in the appropriate column)

S.No.	PARAMETERS	GRADING			
		Excellent (A)	Good (B)	Fair (C)	Poor (D)
1	Delivering subject (objective & coverage)				
2	Use of audio - visual aids				
3	Supply of course materials				
4	Clarity of expression				
5	Interaction with students in the class room				
6	Style of teaching				
7	Summarisation of previous class lectures				
8	Encouraging class room discussion				
9	Accepting suggestions				
10	Impartial student evaluation				
11	Punctuality				
12	Taking care of low performing students				
13	Cordiality with students				
14	Motivation of students				
15	Involvement in student activities				

Total score = {No. of ticks in col. (A) x 3} + {No. of ticks in col. (B) x 2} + {No. of ticks in col. (C) x 1} + {No. of ticks in col. (D) x 0}

Mean score = Total score / 15

Name of the student and signature (optional)

Annexure 2

EVALUATION BY CONTROLLING OFFICER
(after each course or every year)

Name of the Teacher :

Designation and address :

(tick in the appropriate column)

S.No.	PARAMETERS	GRADING			
		Excellent (A)	Good (B)	Fair (C)	Poor (D)
1	Punctuality				
2	Communication skills				
3	Organising ability				
4	Counselling skills				
5	Handling student's problem				
6	Inter-personal relations and team work				
7	Involvement in student activities				
8	Participation in university/ institutional development				
9	Execution of special assignments				
10	Commitment and dedication to job assigned				

Total score = {No. of ticks in col. (A) x 3} + {No. of ticks in col. (B) x 2} + {No. of ticks in col. (C) x 1} + {No. of ticks in col. (D) x 0}

Mean score = Total score / 10

Signature of the Controlling Officer

MEAN SCORES AND RANKING OF TEACHERS BASED ON EVALUATION BY STUDENTS AND CONTROLLING OFFICER

Average mean score obtained of student evaluation* (a)	Average mean score of two annual assessments by controlling officer (b)	Total annual mean score** (c) = (a+b)/2

** if no. of courses is more than one in a year, average of mean scores of different scores is to be obtained and indicated.*

*** score of 2.6 and above - Outstanding teacher; 2.1 to 2.5 - Good teacher; 1.6 to 2.0 - Average teacher; 1.5 and below - Below average teacher*