

॥ सा विद्या या विमुक्तये ॥



स्वामी रामानंद तीर्थ मराठवाडा विद्यापीठ, नांदेड

“ज्ञानतीर्थ” परिसर, विष्णुपुरी, नांदेड - ४३१६०६ (महाराष्ट्र)

SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY NANDED

“Dnyanteerth”, Vishnupuri, Nanded - 431606 Maharashtra State (INDIA)

Established on 17th September 1994 – Recognized by the UGC U/s 2(f) and 12(B), NAAC Re-accredited with 'A' Grade

ACADEMIC (1-BOARD OF STUDIES) SECTION

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संलग्नित महाविद्यालयांतील विज्ञान व तंत्रज्ञान विद्याशाखेतील पदवी स्तरावरील द्वितीय वर्षाचे CBCS Pattern नुसारचे अभ्यासक्रम शैक्षणिक वर्ष २०२०-२१ पासून लागू करण्याबाबत.

प रि प त्र क

या परिपत्रकान्वये सर्व संबंधितांना कळविण्यात येते की, दिनांक २० जून २०२० रोजी संपन्न झालेल्या ४७व्या मा. विद्या परिषद बैठकीतील विषय क्र.११/४७-२०२०च्या ठरावानुसार प्रस्तुत विद्यापीठाच्या संलग्नित महाविद्यालयांतील विज्ञान व तंत्रज्ञान विद्याशाखेतील पदवी स्तरावरील द्वितीय वर्षाचे खालील विषयांचे C.B.C.S. (Choice Based Credit System) Pattern नुसारचे अभ्यासक्रम शैक्षणिक वर्ष २०२०-२१ पासून लागू करण्यात येत आहेत.

- | | |
|---|---|
| 1. B.Sc.-II Year-Biophysics | 2. B.Sc.-II Year-Bioinformatics |
| 3. B.Sc.-II Year-Biotechnology | 4. B.Sc.-II Year-Biotechnology (Vocational) |
| 5. B.Sc.-II Year-Food Science | 6. B.Sc.-II Year-Botany |
| 7. B.Sc.-II Year-Horticulture | 8. B.Sc.-II Year-Agro Chemical Fertilizers |
| 9. B.Sc.-II Year-Analytical Chemistry | 10. B.Sc.-II Year-Biochemistry |
| 11. B.Sc.-II Year-Chemistry | 12. B.Sc.-II Year-Dyes & Drugs Chemistry |
| 13. B.Sc.-II Year-Industrial Chemistry | 14. B.C.A. (Bachelor of Computer Application)-II Year |
| 15. B.I.T. (Bachelor of Information Technology)-II Year | 16. B.Sc.-II Year-Computer Science |
| 17. B.Sc.-II Year-Network Technology | 18. B.Sc.-II Year-Computer Application (Optional) |
| 19. B.Sc.-II Year-Computer Science (Optional) | 20. B.Sc.-II Year-Information Technology (Optional) |
| 21. B.Sc.-II Year-Software Engineering | 22. B.Sc.-II Year-Dairy Science |
| 23. B.Sc.-II Year-Electronics | 24. B.Sc.-II Year-Environmental Science |
| 25. B.Sc.-II Year-Fishery Science | 26. B.Sc.-II Year-Geology |
| 27. B.Sc.-II Year-Mathematics | 28. B.Sc.-II Year-Microbiology |
| 29. B.Sc.-II year Agricultural Microbiology | 30. B.Sc.-II Year-Physics |
| 31. B.Sc.-II Year Statistics | 32. B.Sc.-II Year-Zoology |

सदरील परिपत्रक व अभ्यासक्रम प्रस्तुत विद्यापीठाच्या www.srtmun.ac.in या संकेतस्थळावर उपलब्ध आहेत. तरी सदरील बाब ही सर्व संबंधितांच्या निदर्शनास आणून द्यावी.

‘ज्ञानतीर्थ’ परिसर,
विष्णुपुरी, नांदेड - ४३१ ६०६.
जा.क्र.: शैक्षणिक-१/परिपत्रक/पदवी-सीबीसीएस अभ्यासक्रम/
२०२०-२१/३३३

दिनांक : १५.०७.२०२०.

प्रत माहिती व पुढील कार्यवाहीस्तव :

- १) मा. कुलसचिव यांचे कार्यालय, प्रस्तुत विद्यापीठ.
- २) मा. संचालक, परीक्षा व मूल्यमापन मंडळ यांचे कार्यालय, प्रस्तुत विद्यापीठ.
- ३) प्राचार्य, सर्व संबंधित संलग्नित महाविद्यालये, प्रस्तुत विद्यापीठ.
- ४) साहाय्यक कुलसचिव, पदव्युत्तर विभाग, प्रस्तुत विद्यापीठ.
- ५) उपकुलसचिव, पात्रता विभाग, प्रस्तुत विद्यापीठ.
- ६) सिस्टम एक्सपर्ट, शैक्षणिक विभाग, प्रस्तुत विद्यापीठ.

स्वाक्षरित / -

उपकुलसचिव

शैक्षणिक (१-अभ्यासमंडळ) विभाग

**SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY
NANDED**

SYLLABUS

OF

Dairy Science

B.Sc. Second Year

Choice Based Credit System (CBCS) Semester Pattern

Effective from June - 2020

Distribution of credits for B.Sc. Dairy Science (optional)

Under the Faculty of Science

B.Sc. Syllabus Structure semester pattern

Effective from June 2020

Subject: Dairy Science

Semester	Paper No.	Name of the Course	Instruction Hrs/ week	Total period	Internal Evaluation	Marks of Semester	Total Marks	Credits
III	CCDS III (Section A)	Dairy Animal Management (P-VI)	03	45	10	40	50	2
	CCDS III (Section B)	Technology of Indigenous Milk Products (P-VII)	03	45	10	40	50	2
	CCDSP III [CCDSIII & IV (Section B)]	Practical's based on P-VI & P-VIII (P-X)	04		10	40	50	2
	CCDSP II [CCDS III & IV (Section B)]	SECI(1 Skill/ optional)			15×3 = 45	-	-	(02)*
IV	CCDS IV (Section A)	Sheep, Goat, Pig and Poultry Farming (P-VIII)	03	45	10	40	50	2
	CCDS IV (Section B)	Technology of Western Dairy Products (P-IX)	03	45	10	40	50	2
	CCDSP II [CCDS III & IV (Section A)]	Practical's based on P-VII & P-IX (P-XI)	04	20 practical	10	40	50	2
	CCDSP III [CCDSIII & IV (Section B)]	SEC II (1 Skill			15×3 = 45	-	-	(02)*
Total credits semester III and IV								12(04)*

Swami Ramanand Teerth Marathwada University, Nanded

B. Sc. Second Year DAIRY SCIENCE **Choice Based Credit System (CBCS) - Semester Pattern**

The Silent Features of the Course:

1. Traditional milk products represent the most prolific segment of our Indian dairy industry.
2. Indian dairy products served as a cultural link with the modern dairy industry, provide a technological base for diversification, export promotion and as a value added product to make the modern dairy industry economically strong.
3. Consumption of western dairy products vary widely worldwide. Western Dairy products provide have been an important part of human diet.
4. Economic livestock production achieved by feeding of least cost rations and balanced rations.
5. Goat rearing has been recommended as the best choice for the rural people in developing countries.
6. India Ranks first for goat genetic resources.
7. India's vast genetic resources in sheep reflected by the presence of number of breeds of sheep.
8. Sheep are reared for a verity of purposes and can be maintained under diverse environmental conditions.
9. Pig production is an enterprise of converting inedible or low quality food rich in animal protein.
10. Poultry keeping can be made a profitable business. Success or failure with poultry depends upon poultry keeper himself.

Utility of the Course:

After completing, one can work as a supervisor in a dairy plant either in equipment and plant design or project execution. He or She can also be a dairy consultant or take up entrepreneurial ventures in milk plants or ice cream, cheese, butter units. One can work as Dairy Farm manager.

Learning Objectives of the Course:

1. To impart training to develop confidence in the management practices in :a) Raising sheep, goat, poultry and pig. b) Care and management of different classes of livestock.
2. To inculcate knowledge of Production of hygienic milk, Manufacture of milk products indigenous and western Dairy products.

3. To prepare young and enthusiastic entrepreneur for self- employment through dairying and dairy associated activities.

Prerequisites:

1. To know the Western dairy products in Indian counterpart .
2. To know the heritage dairy products.
3. To know the economics of farm business.
4. To know the different breeds
5. Needs dairy equipments/instruments.

**SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY,
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Choice Based Credit System (CBCS)

Semester Pattern

DAIRY SCIENCE

B.Sc. S.Y.-CCDS III and Semester- III

Section A

Theory Paper VI

Title – Dairy Animal Management

Marks – 50 / Credit 2 + 0

3 Periods per week

Total Periods 45

Unit – I

No. of periods 08

- ❖ Principles of management
- ❖ Role of dairy manager
- ❖ Tools of management
- ❖ First aid measures.

Unit – II

15

- ❖ Principles of general management
- ❖ Study of general management practices: Grooming, Drying off, Control of bad habits, Castration, Dehorning, Deworming, Trimming.
- ❖ Casting , restraining and handling of animals
- ❖ Determination of age and dentation
- ❖ Identifications marks.

Unit – III

12

- ❖ Cattle and buffalo management – calf raising and heifer management
- ❖ Management of pregnant, parturient, lactating and dry cows and buffaloes and breeding bull.
- ❖ Summer management of buffalo.

Unit – IV

10

- ❖ Dairy farm efficiency measures: net farm income, net cash income, net income Per ha. , net income per adult unit, rate of turnover.
- ❖ Benefit- cost ratio, cost concept and cost principles.
- ❖ Methods of cost of milk production.

**SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY,
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Choice Based Credit System (CBCS)
Semester Pattern

DAIRY SCIENCE

B.Sc. S.Y.-CCDS III and Semester- III

Section B

Theory Paper VII

Title – Technology of Indigenous Dairy Products

Marks – 50 / Credit 2 + 0

3 Periods per week

Total Periods 45

Unit I	No. of Periods	06
<ul style="list-style-type: none"> ❖ Introduction to milk products technology. ❖ Indigenous dairy products and entrepreneurial opportunities. ❖ Classification of milk products. ❖ Market milk products-scope and limitations. 		
Unit II		14
<ul style="list-style-type: none"> ❖ Study of starter culture ❖ Study of fermented milk products-curd, chakka, shrikhand ❖ Khoa-Definition, composition and types, manufacturing, packaging ❖ Khoa based sweetmeats-Pedha, Gulabjamun. 		
Unit III		14
<ul style="list-style-type: none"> ❖ Study of milk based products- Basundi and Rabri ❖ Channa- Definition, composition, manufacturing. ❖ Channa based sweetmeats- Rasogolla. Sandesh, Kalakand. ❖ Panir-Definition, composition, manufacturing. 		
Unit IV		11
<ul style="list-style-type: none"> ❖ Makkhan-Definition, composition, manufacturing, packaging. ❖ Ghee- History, definition, composition, method of preparation, grading, packaging, storage and defects, ghee residue. ❖ Indigenous frozen dairy products-kulfi, malai-ka-baraf. 		

SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY, NANDED

Choice Based Credit System (CBCS)

Semester Pattern

DAIRY SCIENCE**B.Sc. S Y. – CCDS- IV and Semester – IV****Section – A****Theory Paper-VIII****Title – Sheep, Goat, Pig and Poultry Farming**

Marks – 50 / Credit 2+0

3 Periods per week

Total periods: 45

Unit – I	No. of periods 13
Goat farming in India	
<ul style="list-style-type: none"> ❖ History of domestication ❖ Taxonomic classification ❖ Common terminologies used in goat management ❖ Role of Goat in national economy ❖ Housing systems of goats :Tethering and Indoor system ❖ Routine operations in goat farm and Feeding habits of goats ❖ Management of Kid , Doe and Buck 	
Unit – II	13
Sheep farming in India	
<ul style="list-style-type: none"> ❖ History of domestication ❖ Taxonomic classification ❖ Common terminologies used in Sheep management ❖ Role of sheep in national economy ❖ Essentials of sheep management round the year ❖ Management of lamb, ewe and ram ❖ General Management practices : shearing , dipping and docking 	
Unit – III	11
Poultry farming in India	
<ul style="list-style-type: none"> ❖ History of domestication ❖ Taxonomic classification ❖ Common terminologies used in poultry ❖ Role of poultry in national economy ❖ Poultry housing systems : free range, semi range, intensive system ❖ Management of chicks, growers ,layers and broilers 	
Unit IV	08
<ul style="list-style-type: none"> ❖ Formation, structure and nutritive value of eggs ❖ Factors affecting egg size ❖ Hatchery management ❖ General management practices for pigs ❖ Pig housing and feeding 	

SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY, NANDED

Choice Based Credit System (CBCS)

Semester Pattern

DAIRY SCIENCE**B.Sc. S Y. – CCDS- IV and Semester – IV****Section – B****Theory Paper-IX****Title – Technology of Western Dairy Products**

Marks – 50 / Credit 2+0

3 Periods per week

Total periods: 45

Unit I	No. of Periods	07
<ul style="list-style-type: none"> ❖ Recent trends in dairy technology. ❖ Membrane technology ❖ Food preservation. ❖ Water activity. 		
Unit II	13	
<ul style="list-style-type: none"> ❖ Cheese - History, definition, composition, classification, manufacturing defects and Storage. ❖ Condensed milk-History, definition, composition, manufacturing and defects. ❖ Evaporated milk-Definition, Composition, methods of manufacturing, Packaging, defects. 		
Unit III	13	
<ul style="list-style-type: none"> ❖ Cream-Methods of separation, types, defects, efficiency of cream separator. ❖ Ice-cream-History, definition, composition, manufacturing, storage, defects. ❖ Butter -Definition, Composition, Manufacturing, Storage and defects. 		
Unit IV	12	
<ul style="list-style-type: none"> ❖ Milk Powder -Definition, composition, types (SMP, WMP), methods of manufacturing, Packaging, Storage and defects. ❖ Study of special milks– Recombined milk, Reconstituted Milk, Yoghurts, Kefir and Kumiss. 		

**SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY,
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Choice Based Credit System(CBCS) Semester Pattern

DAIRY SCIENCE

B. Sc. S. Y. – CCDSP III and Annual Pattern

Practical Paper – X

Practicals based on CCDS VI and VIII (Section B)

Marks 50 / Credit 0+2

3 periods per week

- 1) Study of Cattle breeds :
Milch Purpose – Sahiwal , Redsindhi , Gir
Dual Purpose – Deoni , Kankrej , Hariyana
Draught Purpose – Khillar , Red Kandhari , Amritmahal
Exotic breeds --- Holstein Friesian , Jersey
Cross breeds – Holdeo , Jerdeo
- 2) Study of Buffalo breeds : Murraha , Jaffarabadi , Surti , Mehsana , Marathwadi
- 3) Common appliances used in controlling the dairy farm animals.
- 4) Dentition in cattle and age determination.
- 5) Preparation of animal for milking and milking methods
- 6) Identification marks
- 7) Study of Goat breeds :
Indigenous breeds—Jamunapari , Beetal , Surti , Osmanabadi , Sangamneri
Exotic breeds—Angora , Sannen
- 8) Study of Sheep breeds :
Indigenous breeds – Gaddi , Bakharwal , Chokla, Marwari , Deccani , Nellore
Exotic breeds – Merino , Rambouillet.
- 9) Study of Poultry breeds : WLH , RIR
- 10) Study of Pig breeds : White Yorkshire , Deshi breeds
- 11) Poultry house equipments
- 12) Grading of eggs
- 13) Shearing of wool
- 14) Grading of wool
- 15) Visits to – Dairy Farm , Sheep , Goat , Poultry and Pig farms , Agricultural and Veterinary colleges

**SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY,
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Choice Based Credit System (CBCS) Semester Pattern

DAIRY SCIENCE

B. Sc. S. Y. – SECDS - I

Skill Enhancement Course Work - I

Section - A

Marks 50 / Credit - 2

3 periods per week

Total periods 45

Skill Enhancement Course CCDSP I (A)

Routine Management Practices in Dairy Farm Animals

Unit – I

No. of periods 10

- ❖ Introduction
- ❖ Dehorning of dairy farm animals
- ❖ Castration of dairy farm animals
- ❖ Identification marks
- ❖ Grooming

Unit – II

10

- ❖ Trimming of dairy farm animals
- ❖ Shoeing of dairy farm animals
- ❖ Control of bad habits in dairy farm animals
- ❖ Dentation and age determination

Unit –III

10

- ❖ Casting and restraining
- ❖ Handling of dairy farm animals
- ❖ Suckling and weaning of calf
- ❖ Attending down calves

Unit – IV

15

- ❖ First -aid measures
- ❖ Drenching
- ❖ Dressing of wounds
- ❖ Visits to dairy farm

**SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY,
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Choice Based Credit System (CBCS) Semester Pattern

DAIRY SCIENCE

B. Sc. S. Y. – SECDS - I

Skill Enhancement Course Work - I

Section - A

Marks 50 / Credit - 2

3 periods per week

Total periods 45

Skill Enhancement Course CCDSP I (A)

OR
Poultry Farming

Unit – I	10
<ul style="list-style-type: none"> ❖ Introduction to poultry farming. ❖ History and domestication of poultry farming. ❖ Study of poultry breeds- White-Leg-Horn, RIR, Minorca, Kadaknath. 	
Unit-II	10
<ul style="list-style-type: none"> ❖ Poultry housing- System and equipments. ❖ Egg: structure, grading, marketing. ❖ Hatchery Management 	
Unit III	10
<ul style="list-style-type: none"> ❖ Brooding/Chick Management. ❖ Grower Management. ❖ Layers Management. 	
Unit IV	15
<ul style="list-style-type: none"> ❖ Poultry diseases- Ranikhet, Gamboro, Marek's, Coccidiosis, Ecto-Endo Parasites, Vices in poultry. ❖ Visits- Poultry farms, Vet. Hospitals, Hatcheries and Poultry feed factories. 	

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Choice Based Credit System (CBCS) Semester Pattern

DAIRY SCIENCE

B. Sc. S. Y. – CCDS II and Annual Pattern

Practical Paper – XI

Practical's based on CCDS VII and IX (Section B)

Marks 50 / Credit 0+2

3 periods per week

- 1) Preparation of Curd, Lassi.
- 2) Preparation of Chakka, Shrikhand.
- 3) Preparation of Kulfi.
- 4) Preparation of Makkhan.
- 5) Preparation of Ghee
- 6) Preparation of Channa, Rasogolla, Kalakand, Paneer.
- 7) Preparation of Khoa, Pedha Burfi, Gulabjamun.
- 8) Preparation of Basundi, Rabri.
- 9) Determination of fat from milk products
- 10) Determination of TS milk products
- 11) Adulteration and it's detection from dairy products
- 12) Preparation of Recombined milk and Reconstituted Milk
- 13) Preparation of Ice cream
- 14) Cream separation
- 15) Visits to milk products and by-products industries.

**SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY,
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Choice Based Credit System (CBCS) Semester Pattern

DAIRY SCIENCE

B. Sc. S. Y. – SECDS - II

Skill Enhancement Course Work - II

Section - B

Marks 50 / Credit - 2

3 periods per week

Total periods 45

Skill Enhancement Course CCDSP I (B)

Dairy by-products

Unit – I	No. of periods	10
<ul style="list-style-type: none"> ❖ Introduction, definition, classification of by-products of Indian Dairy Industry ❖ Composition of by-products. ❖ Various principles of utilization of food products. 		
Unit II		10
<ul style="list-style-type: none"> ❖ Methods of utilization of skim milk- In the preparation of industrial casein/ Acid casein. ❖ Introduction, types, flow diagram of manufacture, composition, defects, uses. 		
Unit III		10
<ul style="list-style-type: none"> ❖ Methods of utilization of whey-whey beverage- whey vit, yeast whey beverage. Whey protein concentrates (WPC). ❖ Lactose- Introduction, principle, flow diagram of manufacture, specification / standard, Uses. 		
Unit IV		15

- ❖ Methods of utilization of ghee residue- Introduction, Definition, composition, Utilization of candy, chocolate etc.

Visits to-

Ghee manufacturing units, Beverage industry, lactose manufacturing units, casein manufacturing units, candy and chocolate manufacturing unit.

**SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY,
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Choice Based Credit System (CBCS) Semester Pattern

DAIRY SCIENCE

B. Sc. S. Y. – SECDS - II

Skill Enhancement Course Work - II

Section - B

Marks 50 / Credit - 2

3 periods per

Total periods 45

Skill Enhancement Course CCDSP I (B)

OR

Special milks

Unit I	No. Of Periods	10
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- ❖ Introduction, Definition, classification of processed special milk.
 - I. Processed special milk
 - i. Sterilized milk
 - ii. Homogenized milk

Unit II	10
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- ❖ Introduction, Definition, Method of manufacture, uses of value added special milk.
 - II. Value added special milk
 - i. Flavoured milk
 - ii. Vitaminized milk/ irradiated milk/ Fortified milk.

Unit III	10
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- ❖ Introduction, definition, method of manufacture, uses of fermented special milk
 - III. Fermented special milk
 - i. Cultured butter milk
 - ii. Acidophilus milk

Unit IV	15
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- ❖ Introduction, definition, method of manufacture, uses of standardized special milk
 - IV. Standardized special milk- i. Toned milk, ii. Double toned milk
 - V. Special milk of plant and vegetable origin i. Soya milk ii. Groundnut milk iii. Almond milk

Visits to- Milk processing plants, Fermentation plants, soya processing plants, Food technology college.

List of equipments:

1. Models of Cattle, Buffalo, Sheep, Goat, Poultry and Pig.
2. Bull nose ring
3. Bull leader
4. Bull-holder
5. Castrator
6. Muzzle
7. Casting rope
8. Dehorner
9. Branding set
10. Tattooing set
11. Various types of tags
12. Bands, ring bands
13. Various types of brushes
14. Models of dentation
15. Weighing scales, balances
16. Centrifugal cream separator (Hand operated, Power driven)
17. Butter churner and accessories, Mixer grinder
18. Heating units, heat exchangers
19. Stainless steel and iron pans, Laddle, spoons, scrapers
20. Paneer pot and paneer press
21. Cheese making equipments
22. Poultry house equipments
23. Laboratory glasswares and required chemicals
24. Majoneer Flask
25. Centrifugal fat testing machine
26. Ice-cream making equipments.

Reference Books:

A Textbook of Animal Husbandry	- G.C. Banerjee
Farm Animal Management	-Thomas & Shastry
Dairy Bovine production	-Thomas & Shastry
Advances in Dairy Animal Production	-Mudgal,Singhal
Textbook of Animal Science	-Bhikane and Kawitkar
Outlines of Dairy Technology	-S.K. DE
Milk and Milk Products	- Eckless, Combs and Macacy
Milk and Milk Products Technology	- Mohammad Raziuddin
Modern Dairy Product	-Lampert
Indigenous Milk products	-ICARpub
Handbook of Dairy Science	-K.C.Mahanta
Textbook of Practical Dairy Chemistry	- N.K.Roy & D.C.Sen
Milk Testing	- J.G.Davis
Standard Methods for Examination of Dairy Products	– Gary H.Richardson
Market milk Industry	- C.I.Rhodhouse & J.L. Henderson
The Fluid Milk Industry-Henderson	-ISI specifications-BISPublication
Chemical and Microbiological analysis of	-Ramakant Sharma
Milk & Milk products	
Goat production	-FAO
Dairy Cattle Science	-Ensminger
Goat, Sheep and Pig- Production and management	– Jagdish Prasad
Poultry production and management	- Jagdish Prasad
Animal Poduction and Dairy Technology	-Satish Kulkarni
Sheep, Goat and Poultry Farming	-Satish Kulkarni
Technology of Indian Milk products	-R.P.Aneja, B.N.Mathur, R.C.

Dr .A.S. Hembade
Chairman
(Board in Dairy Science)

Swami Ramanand Teerth Marathwada University Nanded**B. Sc. Second year****CBCS and Annual Pattern****Practical question Paper Proforma****Laboratory Course****Time – 3.00 Hrs.****(Annual pattern) Paper-XI****Marks - 40**

Q.1 Spotting –10 spots (cattle and buffalo breeds and Appliances/Equipments)	10
Q.2. Spotting –10 spots (sheep, Goat, Poultry, Pig breeds and Appliances/equipments)	10
Q.3. Age determination/ Milking.	10
Q.4.Grading of eggs /wool/ shearing of wool.	10

Internal/C.A.: record book, viva-voce and Excursion / visit report.	10
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Swami Ramanand Teerth Marathwada University Nanded

B. Sc. Second year

CBCS and Annual Pattern

Practical question Paper Proforma

Laboratory Course

Time – 3.00 Hrs.

(Annual pattern) Paper-XI

Marks - 40

Q.1 Spotting –10 spots
(Milk Products / Appliances) 10

Q.2. Preparation of Dairy Product (anyone) 10
Basundi / Rabri / Khoa /Pedha/ Channa/Ice-cream/kulfi

Q.3. Preparation of Dairy Product (anyone) 10
Gulabjamun / Pedha / Rasogolla / Kalakand/Paneer/Recombined
& Re-constituted milk

Q.4. Preparation of Dairy Product 10
Dahi / Chakka / Shrikhand / Makkhan /Ghee
OR

Determination of Fat / T.S. / Detection of Adulterants from milk products.

Internal/C.A.: record book, viva-voce and Excursion / visit report. 10