

S-25 March, 2013 AC after Circulars from Circular No.153 & onwards

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DR. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY
CIRCULAR NO.ACAD/NP/B.Sc.-Ist Yr./SEM.-I & II/157/2013

It is hereby notified for information of all concerned that, on the recommendations of the Boards of Studies, Ad-hoc Boards, and Faculty of Science, the Academic Council at its meeting held on 25-03-2013 has accepted the **following revised syllabi** for **B.Sc. First Year progressively under the Faculty of Science :-**

<i>Sr. No.</i>	<i>Revised Syllabus</i>	
[1]	B.Sc. [Physics]	Semester- I & II,
[2]	B.Sc. [Dairy Science & Technology]	Semester- I & II,
[3]	B.Sc. [Industrial Chemistry]	Semester- I & II,
[4]	B.Sc. [Geology]	Semester- I & II,
[5]	B.Sc. [Chemistry]	Semester- I & II,
[6]	B.Sc. [Botany]	Semester- I & II,
[7]	B.Sc. [Electronics] Science	Semester- I & II,
[8]	B.Sc. [Fisheries]	Semester- I & II,
[9]	B.Sc. [Microbiology]	Semester- I & II,
[10]	B.A. [Statistics]	Semester- I & II,
[11]	B.Sc. [Statistics]	Semester- I & II,
[12]	B.Sc. [Zoology]	Semester- I & II,
[13]	B.Sc. [Textile and Interior Decoration]	Semester- I & II,
[14]	B.Sc. [Home Science]	Semester- I & II,
[15]	B.A. / B.Sc. [Mathematics]	Semester- I & II.

This is effective from the **Academic Year 2013-2014** and onwards.

These syllabi are available on the University Website **www.bamu.net**

All concerned are requested to note the contents of this circular and bring the notice to the students, teachers and staff for their information and necessary action.

University Campus,
Aurangabad-431 004.
REF.NO.ACAD/NP/B.Sc.-IST YEAR/
Sem-I & II/2013/5132-541
A.C.S.A.I.No.327[9].

Date:- 08-05-2013.

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Handwritten Signature
Director,
Board of College and
University Development.

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S-25 March, 2013 AC after Circulars from Circular No.153 & onwards

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Copy forwarded with compliments to :-

- 1] **The Principals, affiliated concerned Colleges,
Dr. Babasaheb Ambedkar Marathwada University.**
- 2] **The Director, University Network & Information Centre, UNIC, with
a request to upload the above all syllabi on University Website
[www.bamu.net].**

Copy to :-

- 1] The Controller of Examinations,
- 2] The Superintendent, [B.Sc. Unit],
- 3] The Superintendent, [B.A. Unit],
- 4] The Superintendent, [Eligibility Unit],
- 5] The Programmer [Computer Unit-1] Examinations,
- 6] The Programmer [Computer Unit-2] Examinations,
- 7] The Director, [E-Suvidha Kendra], in-front of Registrar's Quarter,
Dr. Babasaheb Ambedkar Marathwada University,
- 8] The Public Relation Officer,
- 9] The Record Keeper,
Dr. Babasaheb Ambedkar Marathwada University.

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**DR. BABASAHEB AMBEDKAR
MARATHWADA UNIVERSITY,
AURANGABAD.**



Revised Syllabus of
B.Sc. IST YEAR
DAIRY SCIENCE & TECHNOLOGY
SEMESTER-I & II

[Effective from 2013-14 & onwards]

Dr. Babasaheb Ambedkar Marathwada University, Aurangabad
B.Sc. Dairy Science and Technology (Optional) Pattern in
Semester pattern
Course structure
B.Sc. First Year

Semester	Course code	Paper number	Title of paper	Periods	Marks
I	DST-101	Paper-I	Dairy Farm Management	45	50
	DST-102	Paper-II	Market Milk Industry	45	50
	DST-103	Paper-III	Practical Based On Paper-I and II	45	50
II	DST-201	Paper-IV	Livestock Health and Hygiene	45	50
	DST-202	Paper-V	Dairy Processing & Engineering	45	50
	DST-203	Paper-VI	Practical Based On Paper-IV and V	45	50

B.Sc. First Year

(Dairy Science Technology)
Semester I & II

Objectives

The course is planned to acquaint the students with :

- i) An aspects of Farming in livestock management.
- ii) Role of dairying in national economy.
- iii) Sanitary and hygienic practices in dairy farm & plant.
- iv) Establishment of Dairy farm
- v) Various Drug Therapies.
- vi) Study of various diseases & disorders in livestock.
- vii) Processing of market milk in dairy plant.
- viii) Dairy Engineering inputs to dairy plant.
- ix) Dairy Chemistry applicable to market milk.
- x) Dairy Microbiology considerations to market milk.

B.Sc. I Year (Semester – I)
Dairy Science & Technology
Paper-I
Title: Dairy Farm Management

Max. Marks – 50

Sr. No.	Topics	No. of Periods
1.	Role of Livestock in national economy	02
2.	Management: i) Principles of Management ii) Tools of Management iii) Function of Management	03
3.	General Management Practices in Dairy Farming i) Grooming ii) Drying Off iii) Control of bad habits iv) Castration v) Dehorning vi) Identification marks vii) Removing extra teats.	05
4.	Cattle and Buffalo Management i) Housing of Cattle & Buffalo ii) Calf Management iii) Heifer Management iv) Management of Pregnant and Lactating Cow & Buffalo v) Care and Management of Cross – breed Cows vi) Care and Management of Breeding buffalo.	20

5.	Sheep and Goat Management i) Housing of Sheep & Goat. ii) Feeding of Sheep & Goat. iii) Shearing of wool. iv) Grading and marketing of wool.	08
6.	Poultry Management i) Housing of Poultry. ii) Feeding of Poultry. iii) Grading of eggs. iv) Marketing of eggs.	07
Total		45

B.Sc. I Year (Semester – I)
Dairy Science & Technology
Paper-II
Title: Market Milk Industry

Sr. No.	Topics	No. of Periods
1.	Dairy Development in India. NDDB, NDRI, Military dairy farm, IDC, Dairy Co-operatives, Milk Grid, Operation Flood.	06
2.	Milk Chemistry and Constituents i) Definition and Composition of milk. ii) Constituent of Milk iii) Factors affecting quality and quantity of milk. iv) Nutritive value of milk v) Physico – Chemical properties of milk.	14
3.	Anatomy and Physiology of mammary gland. i) Morphology and anatomy of udder. ii) Physiology of Milk secretion. iii) Milk constituents Precursors iv) Endocrinology of milk secretion.	05
4.	Microbiology of milk. i) Definition and classification of micro organism. ii) Reproduction and growth of microorganism. iii) Common micro-organism found in milk. iv) Spoilage of milk v) Fermentation of milk – desirable and undesirable. vi) Clean milk production, sources of contamination. vii) Milk borne diseases	13

5.	Metals and Non-metals using in dairy industry	02
6.	Legal Standard -PFA, BIS, IDF.	01
7.	Adulteration of Milk	02
8.	Packaging and Packaging material	02
	Total	45

B.Sc. I Year (Semester – I)
Dairy Science & Technology
Paper-III
Practicals

Sr. No.	Topics	No. of Periods
1.	Morphology of Cattle, buffalo and poultry	01
2.	Classification of Cattle Breeds	01
3.	Study of Cattle Breeds i)Milch : Gir, Sahiwal, Red Sindhi ii) Draught : Khillar, Dangi, Red Kandhari iii) Dual : Deoni, Hariyana iv) Exotic : Jersey, H.F. v) Cross breed : Holdeo, Jerdeo	03
4.	Study of buffalo breeds : Murrha, Jaffrabadi, Nagpuri, Surti	01
5.	Study of Goat breeds : Osmanabadi, Saqnen	01
6.	Casting of farm animals.	01
7.	Milking of dairy animals.	01
8.	Ageing of dairy animals.	01
9.	Weighing Of dairy animals.	01
10.	Study of structure of udder on model.	01
11.	Platform tests for raw milk. i) Organoleptic tests. ii) Temperature. iii) C.O.B Test iv) Sediment Test.	01
12.	Determination of specific gravity of milk.	01
13.	Determination of Fat, SNF, and T.S. of Milk	01
14.	Determination of Acidity and PH of Milk	01
15.	Staining of Bacteria	01
16.	Detection of Adultrants and Priservative in Milk	
	Total	17

B.Sc. I Year (Semester – II)
Dairy Science & Technology
Paper-IV

Title: Livestock Healthy and Hygiene

Sr.No.	Topics	No. of Periods
1.	Identification of healthy and sick animals	01
2.	Classification of animal diseases	02
3.	Study of major diseases i)Foot and mouth disease (FMD) ii)Rinder pest (RP) iii)Anthrax iv)Black quarters (BQ) v)Heamorrhagic Septicaemia (H.S.)	10
4.	Diseases of Parasitic diseases i) Brucellosis ii) Babesiasis iii) Theleriosis iv) Trichomoniasis v) Trypanosomiasis	08
5	Diseaseof Lactating cow : i) Mastitis ii) Dystokia iii) Milk fever iv) Prolaps v) Ketosis	06
6.	Diseases of Carves i) Pneumonia ii) Calf Score iii) Diarrhoea	04

7.	Poultry Disease i) Raniknet ii) Coccidiosis iii) Fowlpox iv) Gumboro v) Parasites of poultry	09
8.	First aid measures	03
9.	Disposal of carcass	02
	Total	45

B.Sc. I Year (Semester – II)
Dairy Science & Technology
Paper-V

Title: Dairy Processing and Engineering

Sr.No.	Topics	No. of Periods
I.	<p>Dairy Processing</p> <p>i) Milk collection, transportation, Grading, weighing and cooling of milk</p> <p>ii) Strainer and Straining of milk</p> <p>iii) Filter and Filtration of milk</p> <p>iv) Clarifier and clarification of milk</p> <p>v) Cream separator and separation</p> <p>vi) Standardization</p> <p>vii) Pasteurization</p> <p>History, formulation standards types, FDV, Regeneration efficiency</p> <p>viii) Homogenization</p> <p>Single & double stage homogenization, theory of homogenization, Homogenizer valve, homogenization efficiency</p> <p>ix) Sterilization</p> <p>Bottle, UHT, aseptic packaging</p>	20
II	<p>Special Milks :</p> <p>1) Flavored Milk</p> <p>2) Toned & double toned milk</p> <p>3) Recombined & Reconstituted milk</p> <p>4) Sterilized milk</p> <p>5) Imitation milk</p>	05

III	Dairy Engineering i) Cleaning & Sanitation : Cleaning agents, CIP & COP ii) Working & maintenance of can washer, crate washer and bottle washer iii) Sanitary milk pump & fittings, types of pumps iv) Boiler : Properties of steam, steam generation, types of boiler. v) Refrigeration : Vapor compression refrigeration cycle, common refrigerants, properties of good refrigerants. vi) Dairy Plant layout : Selection of site, layout of liquid and composite milk plant. vii) Cold Storage : Types of cold storages, types of loads.	20
	Total	45

B.Sc. I Year (Semester – II)
Dairy Science & Technology
Paper-VI
Practical

Sr. No.	Topics	No. of Periods
1.	Identification of Healthy and Sick animals	01
2.	Recording the temperature, pulse rate and respiration rate of farm animals	01
3.	Preparation of Antiseptic ointments	01
4.	Preparation of Vaccination schedule	01
5.	Dressing of common wounds	01
6.	Identification and control of Ecto and Endo parasites in Farm Animals	01
7.	Study of Dairy farm records	01
8.	Study of Cream separator	01
9.	Preparation of Standardized milk	01
10.	Study of Boilers	01
11.	Study of Household refrigerator	01
12.	Layout of milk processing/chilling center	01
13.	Preparation of Flavored milk	01
14.	Visit to dairy processing plant/ chilling center/ veterinary polyclinic	02
	total	15

Dairy Science & Technology

Reference Books

- 1] A Text book of Animal Husbandry by - G.C. Banarjee
- 2] A Text Book of Animal Science by - Dr. A.U. Bhikane and Dr. S.B. Kawitkar
- 3] Advances of animal Husbandry, The I.C.A.R. publication.
- 4] Animal Husbandry & Dairy Science by. Jagdish Prasad.
- 5] Dairy India Year Book – 2007 by - P.R. Gupta
- 6] Handbook of Veterinary Physician by V.A. Sarpe
- 7] Farm Animal Management and feeding practices in India by Thomas of Shashtri.
- 8] Outlines of Dairy Technology by Sukumar De.
- 9] Dairy Processing by Earl.
- 10] Dairy Technology and Engineering by H.G. Kessler
- 11] Dairy Plant Engineering and Management by Tuffel Ahmed.
- 12] Textbook of Dairy Plant Layout & Design by Lalat Chander, I.C.A.R. publication.
- 13] Principles of Dairy Chemistry by Jenners and Pattorn.
- 14] Dairy Chemistry by M.M. Rai.
- 15] Dairy Microbiology by K.C. Mahanta.