



CVM UNIVERSITY

Aegis: Charutar Vidya Mandal (Estd.1945)

FACULTY OF ENGINEERING & TECHNOLOGY

Effective from Academic Batch: 2022-23

Programme: Bachelor of Technology (Dairy Technology)

Semester: VI

Course Code: 202200605

Course Title: IT in Dairy Industry and Operation Research

Course Group: Program Elective Course - II

Course Objectives: To introduce the students to the concept and strength of Information technology (IT) in the dairy Industry. It also provides with in-depth knowledge and importance of computerization and applications of IT in dairy industry. Students understand and describe the phenomena of operation research. Mathematical and logical operating system provides the executive with quantitative basis for decision making and enhance ability to make long range plans and to solve everyday problems of dairy industry with greater efficiency and competence.

Teaching & Examination Scheme:

Contact hours per week			Course Credits	Examination Marks (Maximum / Passing)				
Lecture	Tutoria l	Practica l		Theory		J/V/P*		Total
				Interna l	Externa l	Interna l	Externa l	
3	0	0	3	50 / 18	50 / 17	NA	NA	100 / 35

* J: Jury; V: Viva; P: Practical

Sr. no.	Content	Hours
1	Information Technology (IT) Introduction, Strength of IT, Importance of Computerization in Dairy, IT application in dairy, Radio Frequency Identification (RFID), Global Positioning System (GPS), ERP applications in dairy, types of information, Management structure and information required at different levels, Quality of information, Computer Based Information System.	6
2	Information Systems in Dairy Operations Support Systems, Management Support Systems, General support system, Management Information Systems (MIS), Decision Support System (DSS), Comparison of MIS and DSS, Types of Decision Support Systems: Data-driven, Model-driven, Knowledge-driven, Document-driven, Communications-driven and group, Knowledge Management Systems (KMS), Expert System.	8



3	Introduction to Database Management System (DBMS) Data and information, Database and data model, Introduction to DBMS and its basic terminology, Components of DBMS, Data Associations, Entities and Attributes, Entity relation model and diagram, Database Models, Hierarchical data model, creating a sample database for an application: inserting, editing, sorting data in the table.	8
4	Introduction to Operation Research Elementary concepts and objectives of Operation Research, Applications of Operation Research in decision making, Mathematical formulation of the linear programming problem and its graphical solution, Simplex Method, Definition and mathematical formulation of Transportation method, Initial basic feasible solution, Optimal solution.	9
5	Inventory Control Introduction and general notations, Purchasing, Economic order quantity, Inventory control model, Inventory control system, Introduction and elementary concepts of replacement theory, Replacement of items deteriorating with time, Sequencing Problem, Queuing Theory and solution of Queuing models.	7
6	Project Planning and Network Analysis Introduction and basic definitions in Network Analysis, Rules for drawing Network Analysis, Network modeling, Event time calculation, activity calculation, Critical Path Method (CPM), Project Evaluation and Review Technique (PERT).	7
	Total	45

Reference Books:

1	Information technology in dairy industry - A. P. Ruhil
2	Dairy Plant Engineering and Management – Tufail Ahmad, Kitab Mahal Publication.
3	Operations Research: Theory and Applications - J.K. Sharma, MACIN Publication
4	Operations Research - R. Panneerselvam, PHI Learning Publication
5	Inventory Control and Management - Gopalakrishnan and Sundaresan, PHI Learning Publication
6	Management Information Systems - W.S. Jawadekar, Tata McGraw-Hill Publication
7	Database Management Systems - Rajiv Chopra, S. Chand Publication

Supplementary learning Material:

1	https://agrimoon.com/operations-research-icar-ecourse-pdf-ebook/
2	https://www.egyankosh.ac.in/handle/123456789/971
3	https://www.cet.edu.in/noticefiles/279_DBMS%20Complete1



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Pedagogy:

- Direct Classroom teaching
- Audio Visual presentations/demonstrations
- Assignments/Quiz
- Interactive methods
- Seminar/Poster presentation

Internal Evaluation:

Teacher may consider some components for the continuous evaluation where individual component weightage should not exceed 20%.

Suggested Specification table with Marks (Theory) (Revised Bloom's Taxonomy):

Distribution of Theory Marks						R: Remembering; U: Understanding; A: Application, N: Analyze; E: Evaluate; C: Create
R	U	A	N	E	C	
15%	25%	20%	20%	15%	5%	

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcomes (CO):

Sr. No.	Course Outcome Statements	%weightage
CO-1	Understand the role of IT in enhancing operations and decision-making, especially within the dairy industry	15
CO-2	Identify and differentiate between various types of information	20
CO-3	Gain foundational knowledge of DBMS concepts, data models	25
CO-4	Use operations research methods for problem-solving and optimization in practical scenarios.	20
CO-5	Acquire skills in network analysis for project management, including using CPM and PERT for event time and activity calculations.	20

Curriculum Revision:

Version:	1
Drafted on (Month-Year):	Dec-22
Last Reviewed on (Month-Year):	-
Next Review on (Month-Year):	Jun-25