

V. DEPARTMENT OF FOOD BUSINESS MANAGEMENT



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Sr. No.	Course No.	Course title	Credits	Semester
1	FBM-111	Computer Programming and Data Structure	3 (1+2)	I
2	FBM-122	Information and Communication Technology	2 (1+1)	II
3	FBM-243	ICT Application in Food Industry	3 (1+2)	IV
4	FBM-354	Entrepreneurship Development	3 (2+1)	V
5	FBM-355	Business Management and Economics	2 (2+0)	V
6	FBM-356	Food Laws and Regulations	3 (2+1)	V
7	FBM-367	Project Preparation and Management	2 (1+1)	VI
8	FBM-368	Marketing Management and International Trade	2 (2+0)	VI
9	FBM-369	Communication Skills and Personality Development	2 (1+1)	VI
		Total Credits	22 (13+9)	

FBM-111

**COMPUTER PROGRAMMING AND DATA
STRUCTURES**

3 (1+2)

THEORY

Introduction: introduction to high level languages i.e. “C” language. Basic structure of C program, character set, variables, constants Data type: Primary data types and user defined data types, typecasting Operators: Arithmetic, logic, relational, building and evaluating expressions, standard library functions Managing Input and Output: input/output statement, scanf(), getchar (), getch(), putchar() Decision making, branching, looping: conditional statements (if, if-else, nesting of if, if-ladder); Looping statement (while(), do., while() and for() – looping statements) Array: one dimensional, two dimensional and multi dimensional arrays Functions: library functions, user defined functions, passing arguments and returning values, recursion String functions: strcat(), strlen(), strcpy(), strcmp (), etc. Data structure: structures, Union and Pointers (Syntax and definition) Stacks, push/pop operations, Queues, Insertion and deletion operations, linked lists

Practical

Write a first programme to print “Welcome to C-programming”.; Write a program for addition, subtraction, multiplication and division of given two numbers A,B.; Write a program to check odd or even number.; Write a program to convert number of days in to months and days.

Write a program to find the Area of Circle, by giving radius as input.; Write a program to find the right most digit of a given number.; Program to calculate the simple interest by giving, principle amount, rate of interest and period in months.; Write a program to find the square root of a given number.; Write a program to find the largest among two numbers;

Write a program to find the largest of three given numbers A, B, C.; Write a program to find the roots of quadratic equation $AX^2+BX+C= 0$; Write a program to find the average/mean of given 10 numbers.; Write a program to print the given number in reverse order.; Write a program to find the sum of first fifty even numbers.; Write a program to generate Fibonacci series up to given numbers N.; Write a program to print the following triangle. ;

```
1
12
123
1234
```

Write a program to determine if the given number is prime or not prime; Write a program to find the factorial of a given number using function.; Write a program to find the factorial of a given numbers using Recursion.; Write a program to find X^y using user defined function.; Write a program to check the given integer number is Palindrome or not; Write a program to print the following triangle.

```
12345
1234
123
12
1
```

Write a program to find the average of 10 given numbers using arrays; print the numbers as well as average. Write a program to determine the grade of a student using nested if statement. Write a program to select the desired branch of Engineering b using switch-case statement.; Write a program to check the given character is VOWEL or NOT; Write a program to read the string in the form of first name, middle name and last name and print the complete name.; Write a

program to determine whether the given string is palindrome or not.; Write a program to determine whether the given character is in lowercase, uppercase, punctuation or space. ; Write a program to arrange the given 10 numbers using bubble sort method.; Write a program to arrange the given 10 numbers using selection sort method.; Write a program for addition of 3 x 3 matrix: Write a program of subtraction fo 3 x 3 matrix: Write a program for multiplication of 3 x 3 matrix

Teaching Schedule - Theory with Weightages (%)

No. of Units	Topics	Per cent Covered
1 – 2	Introduction: introduction to high level languages i.e. “C” language. Basic structure of C program, character set, variables, constants	13
3 – 4	Data type: Primary data types and user defined data types, typecasting	13
5 – 6	Operators: Arithmetic, logic, relational, building and evaluating expressions, standard library functions	13
7	Managing Input and Output: input/output statement, scanf(), getchar (), getch(), putchar()	6
8	Decision making, branching, looping: conditional statements (if, if-else, nesting of if, if-ladder); Looping statement (while(), do,, while() and for() – looping statements)	6
9	Array: one dimensional, two dimensional and multi dimensional arrays	6
10 – 11	Functions: library functions, user defined functions, passing arguments and returning values, recursion	13
12	String functions: strcat(), strlen(), strcpy(), strcmp (), etc.	6
13 – 14	Data structure: structures, Union and Pointers (Syntax and definition)	12
15 – 16	Stacks, push/pop operations, Queues, Insertion and deletion operations, linked lists.	12
	Total	100

Practical Exercises

No. of Units	Topics	Number of practicals
1	Write a first programme to print “Welcome to C-programming”.	1
2	Write a program for addition, subtraction, multiplication and division of given two numbers A,B.	1
3	Write a program to check odd or even number.	1
4	Write a program to convert number of days in to months and days.	1
5	Write a program to find the Area of Circle, by giving radius as input.	1
6	Write a program to find the right most digit of a given number.	1
7	Program to calculate the simple interest by giving, principle amount, rate of interest and period in months.	1
8	Write a program to find the square root of a given number.	1
9	Write a program to find the largest among two numbers.	1
10	Write a program to find the largest of three given numbers A, B, C.	1
11	Write a program to find the roots of quadratic equation $AX^2+BX+C=0$	1
12	Write a program to find the average/mean of given 10 numbers.	1
13	Write a program to print the given number in reverse order.	1
14	Write a program to find the sum of first fifty even numbers.	1
15	Write a program to generate Fibonacci series up to given numbers N.	1
16	Write a program to print the following triangle. <div style="text-align: center;"> 1 12 123 1234 </div>	1
17	Write a program to determine if the given number is prime or not prime	1
18	Write a program to find the factorial of a given number using function.	1
19	Write a program to find the factorial of a given numbers using Recursion.	1
20	Write a program to find X^y using user defined function.	1
21	Write a program to check the given integer number is Palindrome or not	1
22	Write a program to print the following triangle. <div style="text-align: center;"> 12345 1234 123 </div>	1

	12	
	1	
23	Write a program to find the average of 10 given numbers using arrays; print the numbers as well as average.	1
24	Write a program to determine the grade of a student using nested if statement.	1
25	Write a program to select the desired branch of Engineering b using switch-case statement.	1
26	Write a program to check the given character is VOWEL or NOT	1
27	Write a program to read the string in the form of first name, middle name and last name and print the complete name.	1
28	Write a program to determine whether the given string is palindrome or not.	1
29	Write a program to determine whether the given character is in lowercase, uppercase, punctuation or space.	1
30	Write a program to arrange the given 10 numbers using bubble sort method.	1
31	Write a program to arrange the given 10 numbers using selection sort method.	1
32	Write a program for addition of 3 x 3 matrix: Write a program of subtraction fo 3 x 3 matrix: Write a program for multiplication of 3 x 3 matrix	1
	Total	32

TEXT BOOK

Sr. No.	Name of Book	Author	Publisher
1	Data Structures and Algorithm Analysis in C++,	Mark Allen Weiss	4 th Ed. Pearson Education, Boston, USA. 2014
2	Computer programming in C	Rajaraman V.	Prentice Hall of India, 2006
3	Computer Concept and Programming in C	Godse AP and Godse DA	Technical Publication, Pune 2008
4			

REFERENCE BOOKS

Sr. No.	Name of Book	Author	Publisher
1	Fundamentals of Computer Programming with C#	Sofia, Bulgaria	Svetlin Nakov & Co, 2013
2	Object Oriented Programming with C++	Balagurusamy	4 th Ed. Tata McGraw-Hill Publishing Company Limited, New Delhi. 2008

THEORY

Introduction to Computers, Definition: Hardware, Software & firmware. Types of software. Data Representation, Number systems (Binary, Hexadecimal). Difference between ASCII & UNICODE (Different Encoding Schemes) Primary , Secondary Memory , Units used for measurement of memory , Input Output devices Operating Systems, definition and types File Management. Applications used for document creation & Editing, Data presentation using slides. Use of Spreadsheets for statistical analysis, evaluating mathematical & logical expressions Use of Spreadsheets for Interpretation and graph creation Database, concepts and types, uses of DBMS/RDBMS in Agriculture Database design, creation, Preparation of presentation. Import export operations, using numerical tabular data/text/graph /slides within different applications using cut-paste. Smartphone Apps in Agriculture for farm advises, market price, postharvest management etc; Geospatial technology for generating valuable agri-information Decision support systems, concepts, components and applications in Agriculture, Agriculture Expert System, Soil Information Systems etc for supporting Farm decisions Communication process, Berlo' s model, feedback and barriers to communication.

Practical

Study of Computer Components, accessories; practice of important DOS Commands; Introduction of different operating systems such as MS-Windows, Unix/ Linux, Creating, Files & Folders, File Management.; Word-Processing – 1; Word Processing – 2; Presentation Spreadsheet -1 ; Spreadsheet -2; Spreadsheet -3; DBMS/RDBMS Creating, Updating database Querying/Retrieving data , relation ; Introduction to World Wide Web (WWW).; Demonstration of Agri-information system.; Hands on Crop Simulation Models (CSM) such as DSSAT/Crop-Info/CropSyst/Wofost; Computation of water and nutrient requirements of crop using CSM and IT tools; Introduction of Geospatial Technology for generating valuable information for Agriculture.; Hands on Decision Support System; Introduction of programming languages. Preparation of contingent crop planning.

Teaching Schedule - Theory with Weightages (%)

No. of Units	Topics	Per cent Covered
1	Introduction to Computers, Definition: Hardware, Software & firmware. Types of software.	7
2	Data Representation, Number systems (Binary, Hexadecimal). Difference between ASCII & UNICODE (Different Encoding Schemes)	7
3	Primary , Secondary Memory , Units used for measurement of memory , Input Output devices	7
4	Operating Systems, definition and types	7
5	File Management.	6
6	Applications used for document creation & Editing, Data presentation using slides.	6
7	Use of Spreadsheets for statistical analysis, evaluating mathematical & logical expressions.	6
8	Use of Spreadsheets for Interpretation and graph creation.	6
9	Database, concepts and types, uses of DBMS/RDBMS in Agriculture	6
10	Database design, creation,	6
11	Database, concepts and types, uses of DBMS/RDBMS in Agriculture	6
12	Database design, creation,	6
13	Preparation of presentation. Import export operations, using numerical tabular data/text/graph /slides within different applications using cut-paste.	6
14	Smartphone Apps in Agriculture for farm advises, market price, postharvest management etc; Geospatial technology for generating valuable agri-information	6
15	Decision support systems, concepts, components and applications in Agriculture, Agriculture Expert System, Soil Information Systems etc for supporting Farm decisions.	6
16	Communication process, Berlo' s model, feedback and barriers to communication.	6
	Total	100

Practical Exercises

No. of Units	Topics	Number of practicals
1	Study of computer components, accessories	1
2	practice of important DOS Commands	1
3	Introduction of different operating systems such as MS-Windows, Unix/Linux, Creating, Files & Folders, File Management.	1
4	Word-Processing – 1	1
5	Word Processing – 2	1
6	Presentation	1
7	Spreadsheet -1	1
8	Spreadsheet -2	1
9	Spreadsheet -3	1
10	DBMS/RDBMS Creating, Updating database	1
11	Querying/Retrieving data , relation	1
12	Introduction to World Wide Web (WWW). Demonstration of Agri-information system.	1
13	Hands on Crop Simulation Models (CSM) such as DSSAT/Crop-Info/CropSyst/Wofost; Computation of water and nutrient requirements of crop using CSM and IT tools	1
14	Introduction of Geospatial Technology for generating valuable information for Agriculture.	1
15	Hands on Decision Support System	1
16	Introduction of programming languages. Preparation of contingent crop planning.	1
	Total	16

TEXT BOOK

Sr. No.	Name of Book	Author	Publisher
1	Computer Fundamentals	Pradeep K. Sinha and Priti Sinha	III edition, BPB Publications, B-14, Connaught Place, New Delhi – 110 001.
2	Computer Fundamentals	P.K. Sinha	BPB Publications, B-14, Connaught Place, New Delhi – 110 001.

REFERENCE BOOKS AND LINKS

- Mastering Office Professional for window 95, BPB Publications, B-14, Connaught Place, New Delhi – 110 001.
- Statistical Methods for Agricultural workers by V.G. Panse and P.V. Sukhatma, ICAR, New Delhi.
- http://www.tutorialsforopenoffice.org/category_index/base.html
- <http://mkisan.gov.in/downloadmobileapps.aspx>
- <http://www.nrsc.gov.in/Agriculture>
- <http://iasri.res.in/>
- <http://communicationtheory.org/berlos-smcr-model-of-communication/>

Theory

Importance of computerization in food industry, operating environments and information systems for various types of food industries, Supervisory control and data acquisition (SCADA); SCADA systems hardware, firmware, software and protocols, landlines, local area network systems, modems; Spreadsheet applications: Data interpretation and solving problems, preparation of charts, use of macros to solve engineering problems, use of add-ins, use of solver; Web hosting and webpage design; file transfer protocol (FTP), on-line food process control from centralized server system in processing plant; Use of MATLAB in food industry; computing with MATLAB, script files and editor/debugger, MATLAB help system, problem solving methodologies, numeric, cell, arrays, matrix operations, user defined functions, programming using MATLAB; debugging MATLAB programs, applications to simulations; Plotting and model building in MATLAB, X-Y plotting functions, subplots and overlay plots, special plot types, interactive plotting in MATLAB, function discovery, regression, the basic fitting interface, three dimensional plots; Introduction to toolboxes useful to food industry, curve fitting toolbox, fuzzy logic toolbox, neural network toolbox, image processing toolbox, statistical toolbox; Introduction to computational fluid dynamics (CFD), governing equations of fluid dynamics; Models of flow, substantial derivative, divergence of velocity, continuity, momentum and energy equations; Physical boundary conditions, discretization; Applications of CFD in food and beverage industry; Introduction to CFD software, GAMBIT and FLUENT software; LabVIEW – LabVIEW environment: Getting data into computer, data acquisition devices, NI-DAQ, simulated data acquisition, sound card, front panel/block diagram, toolbar/tools palette Components of a LabVIEW application: Creating a VI, data Flow execution, debugging techniques, additional help, context help, tips for working in LabVIEW; LabVIEW typical programs: Loops, while loop, for loop, functions and sub Vis, types of functions, searching the functions palette, creating custom sub Vis, decision making and file I/O, case structure, select (if statement), file I/O; LabVIEW results: Displaying data on front panel, controls and indicators, graphs and charts, arrays, loop timing, signal processing, textual math, math script.

Practical

Introduction to various features in spreadsheet; Solving problems using functions in spreadsheets; Use of Add-Ins in spread sheet and statistical data analysis using Analysis Tool pack; Solution of problems on regression analysis using Analysis Tool pack in spreadsheet; Solution of problems on optimization using solver package in spreadsheet; Introduction to MATLAB; Writing code using MATLAB programming; Solution of problems using Curve Fitting Toolbox in MATLAB; Solution of problems using Fuzzy Logic Toolbox in MATLAB; Solution of problems using Neural Network Toolbox in MATLAB; Solution of problems using Image Processing Toolbox in MATLAB; Introduction to GAMBIT software; Creation of geometry for laminar flow through pipe using GAMBIT; Introduction to FLUENT software; Import of geometry and application of boundary conditions; Solution of problems on laminar flow using FLUENT; Introduction to LabVIEW and NI-DAQ.

Teaching Schedule - Theory with Weightages (%)

No. of Units	Topic	Per cent Covered
1	Importance of computerization in food industry, operating environments and information systems for various types of food industries,	7
2 – 3	Supervisory control and data acquisition (SCADA); SCADA systems hardware, firmware, software and protocols, landlines, local area network systems, modems; Spreadsheet applications: Data interpretation and solving problems, preparation of charts, use of macros to solve engineering problems, use of add-ins, use of solver;	12
4 – 5	Web hosting and webpage design; file transfer protocol (FTP), on-line food process control from centralized server system in processing plant;	12
6 – 7	Use of MATLAB in food industry; computing with MATLAB, script files and editor/debugger, MATLAB help system, problem solving methodologies, numeric, cell, arrays, matrix operations, user defined functions, programming using MATLAB; debugging MATLAB programs, applications to simulations; Plotting and model building in MATLAB, X-Y plotting functions, subplots and overlay plots, special plot types, interactive plotting in MATLAB, function discovery, regression, the basic fitting interface, three dimensional plots;	12
8	Introduction to toolboxes useful to food industry, curve fitting toolbox, fuzzy logic toolbox, neural network toolbox, image processing toolbox, statistical toolbox;	7
9 – 11	Introduction to computational fluid dynamics (CFD), governing equations of fluid dynamics; Models of flow, substantial derivative, divergence of velocity, continuity, momentum and energy equations; Physical boundary conditions, discretization; Applications of CFD in food and beverage industry;	19
12 – 13	Introduction to CFD software, GAMBIT and FLUENT software; LabVIEW – LabVIEW environment: Getting data into computer, data acquisition devices, NI-DAQ, simulated data acquisition, sound card, front panel/block diagram, toolbar/tools palette;	12
14 – 16	Components of a LabVIEW application: Creating a VI, data Flow execution, debugging techniques, additional help, context help, tips for working in LabVIEW; LabVIEW typical programs: Loops, while loop, for loop, functions and sub Vis, types of functions, searching the functions palette, creating custom sub Vis, decision making and file I/O, case structure, select (if statement), file I/O; LabVIEW results: Displaying data on front panel, controls and indicators, graphs and charts, arrays, loop timing, signal processing, textual math, math script.	19
	Total	100

Practical Exercises

No. of Units	Topic	Number of Experiments
1	Introduction to various features in spreadsheet; Solving problems using functions in spreadsheets; Use of Add-Ins in spread sheet and statistical data analysis using Analysis Tool pack; Solution of problems on regression analysis using Analysis Tool pack in spreadsheet; Solution of problems on optimization using solver package in spreadsheet;	10
2	Introduction to MATLAB; Writing code using MATLAB programming; Solution of problems using Curve Fitting Toolbox in MATLAB; Solution of problems using Fuzzy Logic Toolbox in MATLAB; Solution of problems using Neural Network Toolbox in MATLAB; Solution of problems using Image Processing Toolbox in MATLAB;	7
3	Introduction to GAMBIT software; Creation of geometry for laminar flow through pipe using GAMBIT;	7
4	Introduction to FLUENT software; Import of geometry and application of boundary conditions; Solution of problems on laminar flow using FLUENT;	6
5	Introduction to LabVIEW and NI-DAQ.	2
Total		32

TEXT BOOK

Sr. No.	Name of Book	Author	Publisher
1	Computer Applications in Food Technology: Use of Spreadsheets in Graphical, Statistical and Process Analysis	R. Paul Singh	Academic Press, London. 2014
2	Introduction to LabVIEW: 3-Hour Hands-On	National Instruments Corporation	NI, Austin, Texas. 2005
3	Practical SCADA for Industry	David Bailey and Edwin Wright	Elsevier, Burlington, MA 2003

REFERENCE BOOKS

Sr. No.	Name of Book	Author	Publisher
1	Introduction to MATLAB for Engineers	William J. Palm	3rd Ed. McGraw-Hill Companies, Inc., NY, USA. 2011
2	Computational Fluid Dynamics in Food Processing	Da-Wen Sun	CRC Press, Boca Raton, FL, USA. 2007
3	Web Design: A Complete Introduction	Nigel Chapman and Jenny Chapman	John Wiley & Sons, USA. 2006

Theory

Entrepreneurship: Importance and growth, characteristics and qualities of entrepreneur, role of entrepreneurship, ethics and social responsibilities; Entrepreneurship development Assessing overall business environment in the Indian economy; Overview of Indian social, political and economic systems and their implications for decision making by individual entrepreneurs; Globalization and the emerging business/entrepreneurial environment; Concept of entrepreneurship, entrepreneurial and managerial characteristics, managing an enterprise, motivation and entrepreneurship development, importance of planning, monitoring, evaluation and follow up, managing competition, entrepreneurship development programs, SWOT analysis, generation, incubation and commercialization of ideas and innovations; Women entrepreneurship: Role and importance, problems; Corporate entrepreneurship: Role, mobility of entrepreneur; Entrepreneurial motivation; Planning and evaluation of projects: Growth of firm, project identification and selection, factors inducing growth; Project feasibility study: Post planning of project, project planning and control; New venture management; Creativity Government schemes and incentives for promotion of entrepreneurship; Government policy on small and medium enterprises (SMEs)/SSIs; Export and import policies relevant to food processing sector; Venture capital; Contract farming and joint ventures, public-private partnerships; Overview of food industry inputs; Characteristics of Indian food processing industries and export; Social responsibility of business.

Practical

Visit to public enterprise; Visit to private enterprise; Visit to agro-processing/food business centres; SWOT analysis of public enterprises; SWOT analysis of private enterprises; Project proposals as entrepreneur – individual and group; Presentation of project proposals in the class.

Teaching Schedule - Theory with Weightages (%)

No. of Units	Topics	Number of Lectures	Per cent Covered
1 – 4	Entrepreneurship: Importance and growth, characteristics and qualities of entrepreneur, role of entrepreneurship, ethics and social responsibilities; Entrepreneurship development:	4	13
5 – 8	Assessing overall business environment in the Indian economy; Overview of Indian social, political and economic systems and their implications for decision making by individual entrepreneurs;	4	13
9 – 14	Globalization and the emerging business/entrepreneurial environment; Concept of entrepreneurship, entrepreneurial and managerial characteristics, managing an enterprise, motivation	6	19

	and entrepreneurship development, importance of planning, monitoring, evaluation and follow up, managing competition,		
15 – 18	entrepreneurship development programs, SWOT analysis, generation, incubation and commercialization of ideas and innovations;	4	12
19 – 22	Women entrepreneurship: Role and importance, problems; Corporate entrepreneurship: Role, mobility of entrepreneur;	4	12
23 – 26	Entrepreneurial motivation; Planning and evaluation of projects: Growth of firm, project identification and selection, factors inducing growth; Project feasibility study: Post planning of project, project planning and control; New venture management; Creativity.	4	12
27 – 32	Government schemes and incentives for promotion of entrepreneurship; Government policy on small and medium enterprises (SMEs)/SSIs; Export and import policies relevant to food processing sector; Venture capital; Contract farming and joint ventures, public-private partnerships; Overview of food industry inputs; Characteristics of Indian food processing industries and export; Social responsibility of business.	6	19
	Total	32	100

Practical Exercises

No. of Units	Topics	Number of Lectures
1.	Data collection from market on various projects on food processing and analysis	2
2.	Project proposals as entrepreneur – individual and group	3
3.	Calculation of project cost and break even analysis of specific project	3
4.	Different schemes for food entrepreneurs	3
5.	Visit to public enterprise	1
6.	Visit to private enterprise	1
7.	Visit to agro-processing/food business centres	1
8.	SWOT analysis of public enterprises	1
9.	SWOT analysis of private enterprise	1
10.	Presentation of project proposals in the class	2
	Total	16

TEXT BOOK

Sr. No.	Name of Book	Author	Publisher
1	Impact Making Entrepreneurs	EDI, Ahmedabad	Entrepreneurship Development Institute, Ahmedabad
2	Developing New Entrepreneurs	EDI, Ahmedabad	Entrepreneurship Development Institute, Ahmedabad
3	New Initiative in Entrepreneurship	Jain GR and Gupta D.	Entrepreneurship Development Institute, Ahmedabad

REFERENCE BOOKS

Sr. No.	Name of Book	Author	Publisher
1	Entrepreneurship Development	C.B. Gupta and N.P. Srinivasan	S. Chand & Sons, New Delhi. 2012
2	Entrepreneurship Development	Anil Kumar, S., Poornima, S.C., Mini, K., Abraham and Jayashree, K	New Age International Publishers, New Delhi. 2003
3	Management: Theory and Practice	Gupta, C.B.	Sultan Chand & Sons, New Delhi. 2001
4	Dynamics of Entrepreneurial Development and Management	Vasant Desai	Himalaya Publishing House, New Delhi. 2000

Theory

Definitions, management principles, scientific principles, administrative principles; Maslow's Hierarchy of needs theory; Functions of management: Planning, organizing, staffing, directing, controlling Organizational structures, principles of organization; Types of organization: Formal and informal, line, line and staff, matrix, hybrid Introduction to economics: Definitions, nature, scope, difference between microeconomics and macroeconomics; Theory of demand and supply, elasticity of demand, price and income elasticity; Markets: Types of markets and their characteristics; National income: GDP, GNP, NNP, disposable personal income, per capita income, inflation; Theory of production: Production function, factors of production. Law of variable proportions and law of returns to scale; Cost: Short run and long run cost, fixed cost, variable cost, total cost, average cost, marginal cost, opportunity cost; Break even analysis; Finance management: Definition, scope, objective; Different systems of accounting: Financial accounting, cost accounting, management accounting; Human resource management: Definitions, objectives of manpower planning, process, sources of recruitment, process of selection; Corporate social responsibility: Importance, business ethics.

Teaching Schedule - Theory with Weightages (%)

No. of Units	Topics	Per cent Covered
1 – 5	Definitions, management principles, scientific principles, administrative principles; Maslow's Hierarchy of needs theory; Functions of management: Planning, organizing, staffing, directing, controlling;	16
6 – 9	Organizational structures, principles of organization; Types of organization: Formal and informal, line, line and staff, matrix, hybrid;	12
10 – 13	Introduction to economics: Definitions, nature, scope, difference between microeconomics and macroeconomics; Theory of demand and supply, elasticity of demand, price and income elasticity;	12
14 – 17	Markets: Types of markets and their characteristics; National income: GDP, GNP, NNP, disposable personal income, per capita income, inflation;	12
18 – 22	Theory of production: Production function, factors of production. Law of variable proportions and law of returns to scale; Cost: Short run and long run cost, fixed cost, variable cost, total cost, average cost, marginal cost, opportunity cost; Break even analysis;	16
23 – 27	Finance management: Definition, scope, objective; Different systems of accounting: Financial accounting, cost accounting, management accounting;	16
28 – 32	Human resource management: Definitions, objectives of manpower planning, process, sources of recruitment, process of selection; Corporate social responsibility: Importance, business ethics.	16
	Total	100

TEXT BOOK

Sr. No.	Name of Book	Author	Publisher
1	Agriculture, Finance and Management	Reddy and Raghuram	Oxford & IBH Pub Co, 1996
2	Marketing Management	Kotler and Keller, Burton	Pearson Education Australia, 2008
3	Management: Principles and Guidelines	Duening and Ivacevinch	Dreamtech Press, 2003

REFERENCE BOOKS

Sr. No.	Name of Book	Author	Publisher
1	L.M. Prasad	Principles and Practices of Management	9th Ed. S. Chand & Sons, New Delhi 2001
2	Principles of Management	Koontz Harold	Tata McGraw-Hill Education Private Limited, New Delhi.
3	Managerial Economics	P.C. Thomas	9th Ed. Kalyani Publishers
4	Modern Economic Theory	K.K. Dewett and M.H. Navalur	S. Chand & Sons, New Delhi.
5	Human Resource Management	P. Subba Rao	Himalaya Publications. New Delhi
6	Financial Accounting	S.P. Jain	Kalyani Publications, Ludhiana

Theory

Introduction to Food Laws and Regulations: Need for food standards and their enforcement, various types of laws (Mandatory/Regulatory and Voluntary/Optional); Food Safety and Standards Authority of India (FSSAI); Food Safety and Standards Act, 2006 (FSSA) – inception, importance and significance, discussion on important sections; FSS Regulations: Regulations on Licensing and Registration, Regulations on Contaminants, toxins and residues, FSS Regulations on Food product standards and food additives, FSS Regulations on Laboratory and sampling analysis; FSS Regulations on Packaging and Labelling; FSS Regulations on Prohibition and Restriction on sales. Other Relevant Acts: Environment (Protection) Act, 1986, Standards of Weights and Measures Act, 1976, Essential Commodities Act, 1955, The Export (Quality Control and Inspection) Act, 1963, The Insecticides Act, 1968, Consumer Protection Act, 1986. Introduction to various food laws (Voluntary) - Agmark Standards (AGMARK), Codex Alimentarius Standards, BIS Standards and Specifications.

Practical

Licensing and registration process; Examination of Cereals as per specifications; Examination of milk and milk products as per specifications; Examination of Oil and Oil products as per specifications; Examination of fruits and vegetable products as per regulations; Visit to FDA department

Teaching Schedule - Theory with Weightages (%)

No. of Units	Topics	Per cent Covered
1 – 4	Introduction to Food Laws and Regulations: Need for food standards and their enforcement, various types of laws (Mandatory/Regulatory and Voluntary/Optional);	13
5	Food Safety and Standards Authority of India (FSSAI);	3
6 – 7	Food Safety and Standards Act, 2006 (FSSA) – inception, importance and significance, discussion on important sections;	7
8 – 15	FSS Regulations: Regulations on Licensing and Registration, Regulations on Contaminants, toxins and residues, FSS Regulations on Food product standards and food additives, FSS Regulations on Laboratory and sampling analysis; FSS Regulations on Packaging and Labelling; FSS Regulations on Prohibition and Restriction on sales.	25
16 – 17	Environment (Protection) Act, 1986	6
18 – 19	Standards of Weights and Measures Act, 1976	6
20 – 22	Essential Commodities Act, 1955	9
23 – 24	The Export (Quality Control and Inspection) Act, 1963	6
25 – 26	The Insecticides Act, 1968	6
27 – 28	Consumer Protection Act, 1986	6
29 – 32	Introduction to various food laws (Voluntary) - Agmark Standards (AGMARK), Codex Alimentarius Standards, BIS Standards and Specifications, GMP Regulations	13
	Total	100

Practical Exercises

No. of Units	Topic	Number of Experiments
1	Licensing and registration process	1
2	Examination of Cereals as per specifications	3
3	Examination of milk and milk products as per specifications	3
	Examination of Oil and Oil products as per specifications	4
4	Examination of fruits and vegetable products as per regulations	4
5	Visit to FDA department	1
	Total	16

TEXT BOOK

Sr. No.	Name of Book	Author	Publisher
1	Food Safety and Standards Act, 2006	---	Commercials Law Publications, New Delhi
2	Food Safety and Standards Act, 2006	---	FSSAI, New Delhi
	The Food Safety and Standards Act, 2006 (Along with Rules & Regulations)	---	Commercials Law Publications, New Delhi

REFERENCE BOOKS

Sr. No.	Name of Book	Author	Publisher
1	TAXMANN's Guide to Food Safety and Standards Act 2006	---	Taxmann's Publication
2	Food Safety and Standards Act, Rules & Regulations.	Vidhi Jain Akalank Kumar Jain	---

FBM-367 PROJECT PREPARATION AND MANAGEMENT 2 (1+1)**Theory**

Overview of project management: Functions and viewpoints of management, evolution of project management, forms and environment of project management; Project life cycle; Project selection: Project identification and screening, project appraisal, project charter, project proposal, project scope, statement of work Project planning and scheduling: Work breakdown structure, planning and scheduling of activity networks, network scheduling, precedence diagrams, critical path method, program evaluation and review technique, assumptions in PERT modelling, decision CPM, GERT Project cost estimating: Types of estimates and estimating methods, dynamic project planning and scheduling, time-cost trade-offs, resource considerations in projects, resource profiles and levelling, limited resource allocation Project implementation, monitoring and control: Project management process and role of project manager, team building and leadership in projects, organizational and behavioural issues in project management, project monitoring and control, PERT/cost method, earned value analysis; Project completion and future directions: Project completion and review; Project management: Recent trends and future directions; Computers in project management

Practical

Studies on Market Survey based on enterprise; Preparation of Project Report; Project selection, ; dentification, appraisal and scope;Methods of monitoring and feasibility of projects; Studies on investment and repayment plants; Project monitoring and Control – PERT Modeling

Teaching Schedule - Theory with Weightages (%)

No. of Units	Topics	Number of Lectures	Per cent Covered
1 – 3	Overview of project management: Functions and viewpoints of management, evolution of project management, forms and environment of project management;	3	19
4 – 6	Project life cycle; Project selection: Project identification and screening, project appraisal, project charter, project proposal, project scope, statement of work	3	19
7 – 9	Project planning and scheduling: Work breakdown structure, planning and scheduling of activity networks, network scheduling, precedence diagrams, critical path method, program evaluation and review technique, assumptions in PERT modelling, decision CPM, GERT	3	19
10 – 11	Project cost estimating: Types of estimates and estimating methods, dynamic project planning and scheduling, time-cost trade-offs, resource considerations in projects, resource profiles and levelling, limited resource allocation	2	12
12 – 14	Project implementation, monitoring and control: Project management process and role of project manager, team building and leadership in projects, organizational and behavioural issues in project management, project monitoring and control, PERT/cost	3	19

	method, earned value analysis;		
15 – 16	Project completion and future directions: Project completion and review; Project management: Recent trends and future directions; Computers in project management.	2	12
	Total	16	100

Practical Exercises

No. of Units	Topic	Number of Experiments
1	Studies on Market Survey based on enterprise	3
2	Preparation of Project Report	2
3	Project selection, identification, appraisal and scope	3
4	Methods of monitoring and feasibility of projects	2
5	Studies on investment and repayment plants	3
6	Project monitoring and Control – PERT Modeling	2
	Total	16

TEXT BOOK

Sr. No.	Name of Book	Author	Publisher
1	A Manual on How to Prepare a Project Report	J.B.Patel & D.G.Allampally	Entrepreneurship Development Institute of India, Ahmedabad
2	A Manual on Business Opportunity Identification & Selection	J.B.Patel & S.S.Modi	Entrepreneurship Development Institute of India, Ahmedabad
3	Manual for Entrepreneurs	EDI, Ahmedabad	Tata McGraw Hill Education, 2005

REFERENCE BOOKS

Sr. No.	Name of Book	Author	Publisher
1	Operations Research	R. Panneerselvam	2nd Ed. International Book House, Mumbai. 2004
2	Projects	Prasanna Chandra	Tata McGraw-Hill Publication, New Delhi.
3	Project Management for Business and Technology – Principles and Practices	John M. Nicholas	Pearson Prentice Hall
4	Project Management – A System Approach to Planning, Scheduling, and Controlling	Harold Kerzner	CBS Publishers & Distributors
5	Projects – Planning, Analysis, Selection, Financing, Implementation, and Review	Prasanna Chandra	Tata McGraw-Hill Publishing Company Ltd
6	Textbook of Project Management.	P. Gopalakrishnan and V.E. Rama Moorthy	Macmillan Publication, New Delhi

Theory

Marketing: Concept, functions, scope and marketing management; Process: Concepts of marketing-mix, elements of marketing-mix; Market structure and consumer buying behaviour: micro- and macro-environments; Marketing research and marketing information systems; Market measurement, market forecasting, market segmentation, targeting and positioning; Allocation and marketing resources; Marketing planning process; Product policy and planning: Product-mix, product line, product life cycle; New product development process; Product brand, packaging, services decisions; Marketing channel decisions; Retailing, wholesaling and distribution; Pricing decisions; Price determination and pricing policy of milk products in organized and unorganized sectors of dairy industry; Promotion-mix decisions; Advertising: Objectives, budget and advertising message, media planning, personal selling, publicity, sales promotion; World consumption of food: Patterns and types of food consumption across the globe; Salient features of international marketing, composition and direction of Indian exports, international marketing environment, deciding which and how to enter international market; Direct exports, indirect exports, licensing, joint ventures, direct investment and internationalization process, distribution channels;

Teaching Schedule - Theory with Weightages (%)

No. of Units	Topics	Number of Lectures	Per cent Covered
1 – 4	Marketing: Concept, functions, scope and marketing management; Process: Concepts of marketing-mix, elements of marketing-mix; Market structure and consumer buying behaviour: micro- and macro-environments;	4	13
5 – 8	Marketing research and marketing information systems; Market measurement, market forecasting, market segmentation, targeting and positioning; Allocation and marketing resources; Marketing planning process;	4	13
9 – 12	Product policy and planning: Product-mix, product line, product life cycle; New product development process; Product brand, packaging, services decisions;	4	12
13 – 16	Marketing channel decisions; Retailing, wholesaling and distribution; Pricing decisions; Price determination and pricing policy of milk products in organized and unorganized sectors of dairy industry; Promotion-mix decisions;	4	12
17 – 22	Advertising: Objectives, budget and advertising message, media planning, personal selling, publicity, sales promotion; World consumption of food: Patterns and types of food consumption across the globe;	6	19

23 – 28	Salient features of international marketing, composition and direction of Indian exports, international marketing environment, deciding which and how to enter international market; Direct exports, indirect exports, licensing, joint ventures, direct investment and internationalization process, distribution channels;	6	19
29 – 32	WTO and world trade agreements related to food business, export trends and prospects of food products in India; Government institutions related to international food trade: APEDA, Tea Board, Spice Board, MOFPI, etc.	4	12
	Total	32	100

TEXT BOOK

Sr. No.	Name of Book	Author	Publisher
1	International Business	Aswathappa	Tata McGraw-Hill Education, New Delhi
2	Marketing Management	C.N. Sontakki	Kalyani Publishers, New Delhi.
3	International Business	Aswathappa	Tata McGraw-Hill Education, New Delhi
4	International Business: Text and Cases	Fransis Cherunilam	5th Ed. PHI Learning, New Delhi.

REFERENCE BOOKS

Sr. No.	Name of Book	Author	Publisher
1	Marketing Management: A South Asian Perspective	Philip Kotler, Keller, Koshy and Jha	14th Ed. Pearson Education. 2013
2	Fundamentals of Marketing	William J. Stanton	Tata McGraw-Hill Publication, New Delhi. 1984

Theory

Communication Skills: Structural and functional grammar; Meaning and process of communication, Verbal and nonverbal communication; Listening and note taking Writing skills, Oral presentation skills; Field diary and lab record; indexing, footnote and bibliographic procedures. Reading and comprehension of general and technical articles, precise writing, summarizing, abstracting Individual and group presentations, impromptu presentation, public speaking; Group discussion Organizing seminars and conferences

Practicals

Listening and note taking, writing skills, oral presentation skills; field diary and lab record; indexing, footnote and bibliographic procedures. Reading and comprehension of general and technical articles, precise writing, summarizing, abstracting; individual and group presentations.

Teaching Schedule - Theory with Weightages (%)

No. of Units	Topics	Per cent Covered
1 – 2	Communication Skills	13
3	Structural and functional grammar	6
4	Meaning and process of communication	6
5	Verbal and nonverbal communication	6
6	Listening and note taking	6
7 – 8	Writing skills	13
9 – 10	Oral presentation skills	13
11	Field diary and lab record; indexing, footnote and bibliographic procedures	6
12	Reading and comprehension of general and technical articles, precise writing, summarizing, abstracting	6
13	Individual and group presentations, impromptu presentation, public speaking	6
14 – 15	Group discussion	13
16 – 16	Organizing seminars and conferences	6
	Total	

Practicals

Sr. No.	Topics	Number of Lectures
1.	Activities for personality development	1
2.	Listening and notes taking	1
3.	Writing skills: abstracting, summarizing, technical articles, etc	4
4.	Oral presentation skills	2
5.	Public speaking	1
6.	Group discussion	2
7.	Goal setting	1
8.	Presentation using powerpoint	1
9.	Resume building	1
10.	Time management	1
11.	Interview skills	1
	Total	16

TEXT BOOK

Sr. No.	Name of Book	Author	Publisher
1	Effective Communication and Soft Skills	Mamatha Bhatnagar and Nitin Bhatnagar	Person Education. 2013

REFERENCE BOOKS

Sr. No.	Name of Book	Author	Publisher
1	Technical Communication Principles and Practice	Meenakshi Raman, Sangeeta Sharma	
2	Personality Development	Harold Wallace and Ann Masters	Cengage Publishers.
3	Basic Communication Skills for Technology	Andrea J. Rutherford	Pearson Education.

