

P.G.DEPARTMENT OF FOOD SCIENCE TECHNOLOGY AND NUTRITION



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Dated: 18.11.2023

To

The Controller of Examination,
Sambalpur University,
Jyotivihar Burla.



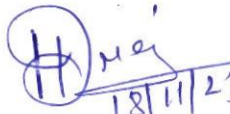
Ref: 6043/Acd-I Dated. 18.10.2023

Sub: Syllabus for the alternative course.

Sir,

With reference to the subject cited above, I am sending herewith the modified syllabus of M.Sc. Food Science and M.Sc. Food Science and Nutrition with an alternative course for MOOC course (copy attached) with 3 credits of P.G. Department of Food Science Technology and Nutrition, Sambalpur University.

This is for your kind information and necessary action at your end.


18/11/23
Coordinator, FSTN,
Sambalpur University
Co-ordinator
P.G. Department of
Food Science Technology & Nutrition
Sambalpur University

**Courses of Studies for the M. Sc Food Science
(Under Course Credit Semester System)**

I Semester		
Course No.	Title	Credit Hour
FS. 411	Food Commodities	4 (Theory)
FS. 412	Biochemistry of Food	4 (Theory)
FS. 413	Food Microbiology	4 (Theory)
FS. 414	Basic Concepts of Nutrition	4 (Theory)
FS. 415	Practical -I	4 (Practical)
FS. 416	EVS & Disaster Management	2 (Compulsory)
	Total	22
II Semester		
Course No.	Title	Credit Hour
FS. 421	Food Ingredients	4 (Theory)
FS. 422	Techniques in Food Analysis	4 (Theory)
FS. 423	Food Quality Control	4 (Theory)
FS. 424	Food Processing and Preservation	4 (Theory)
FS. 425	Practical -II	4 (Practical)
FS. 426	IDC(Inter Disciplinary Course)	3 (Other Dept.)
	Total	23
III Semester		
Course No.	Title	Credit Hour
FS. 511	Postharvest Technology and Food Packaging	4 (Theory)
FS. 512	Research Methodology and Biostatistics	4 (Theory)
FS. 513	Industrial Food Biotechnology	4 (Theory)
FS. 514	Elective Paper (any one)	4 (Theory)
	a. Beverages, Bakery and Snacks Food Tech.	
	b. Food Engineering	
	c. Nutrition & Dietetics	
FS. 515	Practical-III	4 (Practical)
FS. 516	Entrepreneurship Development Programme	2 (Compulsory)
	Total	22
IV Semester		
Course No.	Title	Credit Hour
FS. 521	Entrepreneurship Development Proposal	4
FS. 522	Final Project Report	4
FS. 523	Seminar	4
FS. 524	Industrial Tour Report	4
FS. 525	Comprehensive Viva-Voce	4
	Total	20
MOOC (ONLINE MODE)	ANY ONE PAPER (IN 2 ND OR 3 RD SEM) ANY ONE PAPER OR (IN 3 RD SEM : FS. 517 (DAIRY TECHNOLOGY))	3
	TOTAL CREDITS:	90

**Courses of Studies for the M. Sc Food Science & Nutrition
(Under Course Credit Semester System)**

I Semester		
Course No.	Title	Credit Hour
FSN. 411	Food Commodities	4 (Theory)
FSN. 412	Biochemistry of Food	4 (Theory)
FSN. 413	Food Microbiology	4 (Theory)
FSN. 414	Basic Concepts of Nutrition	4 (Theory)
FSN. 415	Practical -I	4 (Practical)
FSN. 416	EVS & Disaster Management	2 (Compulsory)
	Total	22
II Semester		
Course No.	Title	Credit Hour
FSN. 421	Food ingredients	4 (Theory)
FSN. 422	Techniques in Food Analysis	4 (Theory)
FSN. 423	Food Quality Control	4 (Theory)
FSN. 424	Advanced Human Physiology	4 (Theory)
FSN. 425	Practical -II	4 (Practical)
FSN. 426	IDC(Inter Disciplinary Course)	3 (Other Dept.)
	Total	23
III Semester		
Course No.	Title	Credit Hour
FSN. 511	Therapeutic Nutrition	4 (Theory)
FSN. 512	Research Methodology and Biostatistics	4 (Theory)
FSN. 513	Industrial Food Biotechnology	4 (Theory)
FSN 514	Elective Paper (any one)	4 (Theory)
	a. Clinical Dietetics	
	b. Public Health Nutrition	
	c. Institutional Food Management	
	d. Food Preservation and Packaging	
FSN 515	Practical-III	4 (Practical)
FSN. 516	Entrepreneurship Development Programme	2 (Compulsory)
	Total	22
IV Semester		
Course No.	Title	Credit Hour
FSN. 521	Nutritional Status Survey	4
FSN 522	Final Project Report	4
FSN. 523	Seminar	4
FSN. 524	Industrial Tour Report	4
FSN. 525	Comprehensive Viva-Voce	4
	Total	20
MOOC (ONLINE MODE)	ANY ONE PAPER (IN 2 ND OR 3 RD SEM) ANY ONE PAPER OR (IN 3 RD SEM : FSN. 517 (DAIRY TECHNOLOGY)	3
	TOTAL CREDITS:	90

Instruction to Paper Setters

1. In theory papers questions will be set unit-wise with 2 questions from each unit (total 8 questions). The students shall answer any one question from each unit.
2. 60% of the questions shall be long-answered type and 40% short-answered type

Programme Education Objectives

- PEO1** Understand the nature and basic concepts of Dairy Technology Relating to the M.Sc. in Food Science and M.Sc. Food Science and Nutrition
- PEO2** Analyse the relationships among different concepts
- PEO3** Perform procedures as laid down in the areas of study
- PEO4** Apply the Basic Concepts learned to execute them

UNIT	TOPICS	NO. OF LECTURES
1	Present status of milk & milk products in India and Abroad; market milk- Composition Of milk of various species, Physiochemical properties, difference evaluation, defects in dried milk powder.	3
	quality evaluation and testing of milk, procurement, transportation and processing of market milk, cleaning & sanitization of dairy equipment	3
	Special milks such as flavored, sterilized, recombined & reconstituted toned & double Toned.	4
2	Cream- Definition, classification, composition, cream separation, sampling, neutralization, sterilization, pasteurization & cooling of cream, evaluation, defects in cream	4
	Butter- Definition, composition, classification, methods of manufacture, theories of churning, evaluation, defects in butter	4
	Ice cream- Definition, composition and standards, nutritive value, classification, methods of manufacture, evaluation, defects in ice cream, and technology aspects of softy manufacture.	2
3	Condensed milk- Definition, methods of manufacture, evaluation of condensed & evaporated milk	3
	Dried milk Powder- Definition, methods of manufacture of skim & whole milk powder, instantiation	3
	Cheese: Definition, composition, classification, methods of manufacture, cheddar, Gouda, cottage and processed cheese, evaluation, defects in cheese.	3
	Pre-biotic and probiotic milk products.	1
	TOTAL LECTURES =	30

Course Outcomes

- CO-1** Remember and understand the basic concepts/Principles of Dairy Technology
- CO-2** Analyse the Various Concepts to understand them through case studies
- CO-3** Apply the knowledge in understanding practical problems
- CO-4** Execute/create the Project or field assignment as per the knowledge gained in the course


TEXT BOOKS:

1	Dey. S.1980. <i>Outlines of Dairy Technology</i> . Oxford Univ. Press. New Delhi
2	Rosenthal, I. 1991. <i>Milk and Milk Products</i> . VCH, New York.
3	<i>Technology of Milk Processing</i> , Khan QA and Padmanabhan, ICAR, New Delhi
4	Aneja RP, Mathur BN, Chandan RC & Banerjee AK. 2002. <i>Technology of Indian Mil Products</i> . Dairy India Publ.


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REFERENCE BOOKS:

1	Walstra P. 1999. <i>Dairy Technology</i> . Marcel Dekker.
2	Rathore NS <i>et al.</i> 2008. <i>Fundamentals of Dairy Technology - Theory & Practices</i> . Himanshu Publ
3	Walstra P. 2006. <i>Dairy Science and Technology</i> . 2nd Ed. Taylor & Francis.
4	Robinson, R.K. (2 vol. set). 1986. <i>Modern Dairy Technology</i> Elsevier Applied Science, UK.


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