

**GUJARAT VIDYAPEETH
AHMEDABAD**

M.D. Gramseva Sankul, Sadra, Dist: Gandhinagar

Faculty of Science and Applied Science

Bachelor of Vocational (Food Processing Technology)

**Semester-IV
(In Force from June-2017)**

GUJARAT VIDYAPEETH : AHMEDABAD
M.D. Gramseva Sankul, Sadra, Dist: Gandhinagar
Faculty of Science and Applied Science
Bachelor of Vocational (Food Processing Technology)
Semester-IV
(In Force from December-2018)

FPT-401 FATS AND OIL PROCESSING TECHNOLOGY

(Syllabus of theoretical portion)(In Force from December-2018)

Total Mark: 100 = External Evaluation: 60 Marks +

Internal Evaluation: 40 Marks)

(Total Teaching Hours = 30, Credit = 02 + 00)

Objectives

- To enable the students
- To understand various aspects of oil processing technology employed in food industry.
- To learn various chemical and packaging of oils.

Unit-1. Introduction, Packing and storage

Fats and oils, classification, properties, uses in food industry, shortenings, recent processing techniques. Packing, packaging materials, factors to be considered during packing, antioxidants, storage.

Unit-2. Processing of oil, Oil Extraction from Oil Seeds, Fat Characterization

Steps involved in oil processing, oil extraction, methods of oil extraction, oil refining, hydrogenation, winterization, deodorizing, bleaching. Major and minor oil seeds, sources, examples, Extraction of oil from oil seeds, hydrogenated vegetable oils, margarine. Importance of fat analysis, refractive index, melting point, solid fat index, cold test, smoke, flash and fire points, iodine value, saponification number, acid value and free fatty acids, polar components in frying fats, lipid oxidation, peroxide value, Thiobarbituric acid test, Schaal Oven test, active oxygen method.

Text books:

1. Manay, N.S, Shadaksharaswamy, M., Foods- Facts and Principles, New Age International Publishers, New Delhi, 2004.
2. Meyer, L H-Food Chemistry. CBS publishers & distributors, New Delhi. 2002
3. Potter, N. N, Hotchkiss, J. H. Food Science. CBS Publishers, New Delhi. 2000.
4. Nielsen, S.S. Introduction to the chemical analysis of foods. Jones and Bartlett Publishers, Boston, London. 2003
5. Lawson, G. L, Food oils and fats
6. Fereidoon Shahidi, Functional properties of proteins and lipids
7. Clyde, E. Stauffer, Fats and oils

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FPT-401 FATS AND OIL PROCESSING TECHNOLOGY-Practical

(Syllabus of practical portion) (In force from December, 2018)

Total Mark: 100 = External Evaluation: 60 Marks +

Internal Evaluation: 40 Marks)

(Total Teaching Hours = 45, Credit = 00 + 02)

Objectives

- To enable the students
- To understand various aspects of oil processing technology employed in food industry.
- To learn various chemical and packaging of oils.

- (1) Processing of Oil
- (2) Packaging Techniques
- (3) Storage Techniques
- (4) Visit of Various related institutes.

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FPT-402 CEREALS AND PULSES TECHNOLOGY

(Syllabus of theoretical portion) (In force from December, 2018)

Total Mark: 100 = External Evaluation: 60 Marks +

Internal Evaluation: 40 Marks)

(Total Teaching Hours = 30, Credit = 02 +00)

Objectives

- To give a general outline about the principles, structure and composition, economic importance and storage of different cereals, pulses and their products

Unit-1. Rice, Wheat , Millets

Cereal grain structure, composition of rice, Processing- Milling, parboiling– Avorio process, conversion process, Malek process and Fernandez process and its advantages, by-products of cereals– starch, gluten, dextrose, dextrin, bran, broken grains, parched rice, puffed rice, flaked rice, popped rice, hulls, rice pollards, bran oil, germ and germ oil, husk, straw. Classification of wheat, structure and composition, Harvesting and storage: Harvesting the grain, cleaning the grain and storage, wheat milling, wheat products: whole wheat flour, maida, semolina, macaroni products and its method of preparation: macaroni, spaghetti and vermicelli. Corn- types of corn, structure and composition, nutritive value, processing of corn: dry milling, wet milling and alkali processing, products of corn: degerminated flour, corn germ oil, pop corn, corn starch. Jowar, Ragi, Bajra and Rye: Nutritive value and processing.

Unit-2. Breakfast cereals Pulses

Definition, Nutritive value of breakfast cereals, and classification of breakfast cereals: uncooked breakfast cereals and ready to eat cereals: processing of ready –to-eat cereals (Batch cooking, continuous cooking and extrusion cookers) and products (flaked cereals, puffed cereals, shredded products, granular products). Introduction, composition, processing, utilization of pulses, toxic constituents of pulses, important pulses- Bengal gram, red gram, black gram, green gram, moth bean, lentil, horse gram, field bean, pea, khesari dhal, cluster bean, cow pea, kidney bean, soyabean-processing, fermented products of soyabean.

Text books:

1. David Dendy A.V, etal; Cereals and Cereal Products: Technology and Chemistry, - 2000
2. Manay, N.S, Shadaksharaswamy, M., Foods- Facts and Principles, New Age International Publishers, New Delhi, 2004.
3. Potter, N.N. and Hotchkiss J. H. Food Science. CBS publishers and distributors. 1996.
4. Srilakshmi, B. Food Science. New Age International Publishers, New Delhi, 2003.
5. Subalakshmi, G and Udipi, S.A. Food processing and preservation. New Age International Publishers, New Delhi, 2001.

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FPT-402 CEREALS AND PULSES TECHNOLOGY-Practical
(Syllabus of practical portion) (In force from December 2018)
Total Mark: 100 = External Evaluation: 60 Marks +
Internal Evaluation: 40 Marks)
(Total Teaching Hours = 45, Credit = 00 + 02)

Objectives

- To give a general outline about the principles, structure and composition, economic importance and storage of different cereals, pulses and their products
- (1) Nutritive value with added of Swaminathan
 - (2) Breakfast
 - (3) Cereals
 - (4) Continuous Cooking
 - (5) Extrusion
 - (6) Related products with syllabus.

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FPT-403 ORGANIC FOOD

(Syllabus of theoretical portion) (In force from June, 2017)

Total Mark: 100 = External Evaluation: 60 Marks +

Internal Evaluation: 40 Marks)

(Total Teaching Hours = 30, Credit = 02 + 00)

Objectives

- (1) To Learn organic Processing
- (2) To know the importance of organic processing
- (3) To be innovative in exploring various conventional products.

(1) Organic farmic







- Characteristics of organic food
- Food is grown without Pesticides
- Synthetic growth hormone
- Petroleum based Hormones
- Cloring
- Food is processed without Artificial colour and flavours
- Artificial Presentatives
- Irradiation
- GMOS.

(2) Conventional Farming

- Biopesticides
- Organix Manares
- Vermitechnology
- Vermiculture
- Advantage of organic farming
- Limitations of Organic Farming

- (3) Certification of organic products & Reserch findings on organic food**

Text Book:

-  Palmer Sharron-2006 organic food, today's
-  Yenger David 2008, Got Organic Dietition
-  Organic Gardeing
-  Food Safety and Organic Agriculture
-  Vermi Composting
-  Organic food <http://www.onri.org./Achtor/>

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FPT-403 ORGANIC FOOD (Practical)

(Syllabus of practical portion) (In force from June, 2017)

Total Mark: 100 = External Evaluation: 60 Marks +

Internal Evaluation: 40 Marks)

(Total Teaching Hours = 45, Credit = 00 + 02)

Objectives

- (1) To Learn organic Processing
- (2) To know the importance of organic processing
- (3) To be innovative in exploring various conventional products.

- (1) Vermi Technology
- (2) Vermi Craftwise
- (3) List of Organic Products
- (4) Pesticides.

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FPT-404 DAIRY TECHNOLOGY

(Syllabus of theoretical portion) (In force from June, 2017)

Total Mark: 100 = External Evaluation: 60 Marks +

Internal Evaluation: 40 Marks)

(Total Teaching Hours = 30, Credit = 02 + 00)

Objectives

- To know the importance of milk as an agricultural commodity
- To be innovative in exploring various traditional and nontraditional milk products

Unit-1. Introduction, Indigenous Dairy Products

Definition, different sources of milk and their composition, factors affecting composition of milk. Physio-chemical properties of milk constituents. Microbiology of milk, Collection and transportation of milk. Grading of milk. Fat rich products- Ghee, Makkan and Malai. Concentrated Products- Khoa, Rabri and Basundi. Coagulated Products- Chhana and Paneer. Fermented Products- Dahi, Chakka, Shrikhand and Lassi. Frozen Products- Kulfi and Kulfa. Sweet dairy products - Gulab Jamun and Rasagulla.

Unit-2. Milk Processing, Butter and Cream, Cheese, Ice cream and condensed milk

Pasteurized milk, Sterilized milk, Homogenized milk, Flavored milk, frozen concentrated milk, Fermented milk, Reconstituted milk, Recombined milk, Toned and double toned milk, Vitaminised/ Irradiated milk, milk powder. Definition, classification, composition and nutritive value, method of manufacture, packaging & storage. Uses of butter and its defects. Cheese: definition, classification, composition and nutritive value, Manufacture of cheddar cheese and cottage cheese, defects in cheese, their causes and prevention, uses of cheese. Ice-cream: Definition, composition and nutritive value, role of constituents, method of manufacture & storage. Uses of ice-cream, defects in ice-cream Condensed & Evaporated milk-processing.

Text books:

1. Godbole, N.N; Milk – The Most Perfect Food ; Biotechnology books, 2007
2. Manay, N.S, Shadaksharaswamy, M., Foods- Facts and Principles, New Age International Publishers, New Delhi, 2004.
3. Potter, N. N, Hotchkiss, J. H. Food Science. CBS Publishers, New Delhi. 2000.
4. Spreer E and Mixa, A; Milk and Dairy Product Technology; Marcel Dekker, 2005
5. Srilakshmi, B. Food Science (3rd edition), New Age International (P) Limited Publishers, New Delhi, 2003.
6. Sukumar De; Outlines of dairy technology; Oxford University Press; 2001
7. Walstra A, Geurts T.J and Noomen, A; Dairy Technology – Principles of milk and Properties and Processes; Marcel Dekker, 2005.

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FPT-404 DAIRY TECHNOLOGY- PRACTICAL

(Syllabus of practical portion) (In force from June, 2017)

Total Mark: 100 = External Evaluation: 60 Marks +

Internal Evaluation: 40 Marks)

(Total Teaching Hours = 45, Credit = 00 + 02)

Objectives

- To analyze the chemical constituents of milk as an agricultural commodity
- To be innovative in exploring various traditional and nontraditional milk products

1. Analysis of milk

- Estimation of acidity
- Estimation of lactose
- Estimation of protein by Sorenson formol titration
- Estimation of milk fat
- Adulteration testing- starch, cane sugar, water

2. Processing of ice cream

3. Manufacture of paneer

4. Manufacture of Rasogulla

5. Processing of gulab jamun

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ENG-401: English

(Syllabus of theoretical portion) (In force from June, 2017)

Total Mark: 100 = External Evaluation: 60 Marks +

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Adopted from Microbiology Department

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EC-401 Computer

(Syllabus of theoretical portion) (In force from June, 2017)
Total Mark: 100 = External Evaluation: 60 Marks +
Internal Evaluation: 40 Marks)
(Total Teaching Hours = 30, Credit = 02 + 00)

1. Formula & Functions – સૂત્ર અને વિધેય

Copy and Paste of Formula – સૂત્રની કોપી અને પેસ્ટ

What is a Function ? Various types of Function : વિધેય એટલે શું? વિધેય ના વિવિધ પ્રકાર

Day	Month	Year	Int	Round
Sqrt	Sum	Average	Count	Min
Max	Left	Len	Right	Upper
Lower	If			

2. Charts - એક્સેલમાં ચાર્ટ

Need for a chart and facilities available in Spreadsheet to make a chart

ચાર્ટ બનાવવાની જરૂરીયાત બાબત ચર્ચા અને સ્પ્રેડશીટમાં ચાર્ટ બનાવવા માટેની ઉપલબ્ધ સગવડતાઓ

Chart Types ચાર્ટના પ્રકારો : Column Chart – કોલમ ચાર્ટ, Line Chart – લાઇન ચાર્ટ,

Pie Chart – પાઈ ચાર્ટ, Bar Chart – બાર ચાર્ટ, Area Chart – એરીઆ ચાર્ટ

What is sorting? How can you sort data in Spreadsheet?

સોર્ટિંગ એટલે શું? સ્પ્રેડશીટમાં ડેટા સોર્ટ કેવી રીતે કરી શકાય?

3. Network Fundamental

3.1 What Is a Network? નેટવર્ક શું છે?

3.2 The Concept of Networking - નેટવર્કનો ખ્યાલ

3.3 Benefits of Computer Network – નેટવર્કના લાભ

3.4 Types of Networks: LANs, MANs and WANs – નેટવર્કના પ્રકાર

3.5 Network Topology – નેટવર્ક ટોપોલોજી (રીંગ, સ્ટાર, બસ, મેશ)

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EC-401 Computer-Practical

(Syllabus of practical portion) (In force from June, 2017)

Total Mark: 100 = External Evaluation: 60 Marks +

Internal Evaluation: 40Marks)

(Total Teaching Hours = 45, Credit = 00 + 02)

1. Assessment of nutritional status: 24 hour dietary recall, anthropometry, clinical assessment
2. Development of low cost nutritious recipes for population groups vulnerable to nutritional deficiencies
3. Planning and preparation of diets/dishes for individuals suffering from:
 - . Febrile disorders
 - Diarrhoea, constipation
 - Underweight, overweight/ obesity
 - Diabetes and Cardiovascular diseases

Internet

- 1 What is internet? , History, Internet uses ઈન્ટરનેટ શું છે?, ઇતિહાસ, ઈન્ટરનેટના ઉપયોગો
- 2 Introduction of World Wide Web – વર્લ્ડ વાઈડ વેબનો પરિચય
- 3 Web Browser: Internet Explorer – વેબ બ્રાઉઝર
- 4 URL –યુનિફોર્મ રીસોર્સ લોકેટર
- 5 Search Engine, Usage of Google – સર્ચ એન્જીન, Google નો ઉપયોગ

નોંધ ઓપરેટીંગ સિસ્ટમ તરીકે ubuntu-12.04

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EC-402: Public Nutrition

(Syllabus of theoretical portion) (In force from June, 2017)

Total Mark: 100 = External Evaluation: 60 Marks +

Internal Evaluation: 40 Marks)

(Total Teaching Hours = 30, Credit = 02 + 00)

Objectives :

Unit 1

Concept and scope of public nutrition Assessment of nutritional status: methods and application, Direct methods - anthropometry, biochemical and clinical examination, Indirect methods - dietary surveys, vital statistics, Common nutritional deficiencies, Etiology, prevalence, clinical features, prevention and management of nutritional deficiencies • PEM, Micronutrient deficiencies such as Vitamin A deficiency, Nutritional Anemias, Iodine Deficiency Disorders

Uni-2

Introduction to Diet Therapy

Basic concepts of diet therapy Therapeutic modifications of the normal diet
Common diseases/ disorders Etiology, clinical features and nutritional management of: Febrile disorders and HIV-AIDS • Diarrhoea, constipation Underweight, overweight and obesity Diabetes and Cardiovascular diseases

Text Book :

- (1) Khanna K, Gupta S, Seth R, Passi SJ, Mahna R, Pun S (2013), Textbook of Nutrition and Dietetics, Phoenix Publishing House Pvt. Ltd.
- (2) Stacy Nix (2009). William's Basic Nutrition and Diet Therapy, Edition, Elsevier Mosby.
- (3) Wadhwa A and Sharma S (2003), Nutrition in the Community – A Textbook, Elite Publishing Pvt. Ltd., New Delhi.

(4) ICMR (1989) Nutritive value of Indian Foods. National Institute of Nutrition,
Indian Council of Medical Research, Hyderabad.

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EC-402: Public Nutrition(Practical)

(Syllabus of practical portion) (In force from June, 2017)

Total Mark: 100 = External Evaluation: 60 Marks +

Internal Evaluation: 40Marks)

(Total Teaching Hours = 45, Credit = 00 + 02)

Objectives

1. Assessment of nutritional status: 24 hour dietary recall, anthropometry, clinical assessment
2. Development of low cost nutritious recipes for population groups vulnerable to nutritional deficiencies
3. Planning and preparation of diets/dishes for individuals suffering from:
 - . Febrile disorders
 - Diarrhoea, constipation
 - Underweight, overweight/ obesity
 - Diabetes and Cardiovascular diseases