GUJARAT VIDYAPITH – AHMEDABAD

M.D. Gram Seva Mahavidyalaya, Sadra, Dist. Gandhinagar

Faculty of Science and Applied Science

Department of Home Science

Bachelor of Vocational (Food Processing Technology)

Revised Course Structure Year 2018

B.Voc. Degree Course

in

FOOD PROCESSING TECHNOLOGY

under

CREDIT AND SEMESTER SYSTEM AND GRADING

Scheme for the Distribution of Credits, Period of Instruction and Syllabus

AIMS AND OBJECTIVES OF VOCATIONAL EDUCATION

AIM

The University Grants Commission (UGC) has launched a scheme on skills development based higher education as part of college/university education, leading to Bachelor of Vocation (B.Voc.) Degree with multiple exits such as Diploma/Advanced Diploma under the NSQF. The B.Voc. programme is focused on universities and colleges providing undergraduate studies which would also incorporate specific job roles and their NOSs along with broad based general education. This would enable the graduates completing B.Voc. to make a meaningful participat**ion in accelerating India's economy by gaining appropriate** employment, becoming entrepreneurs and creating appropriate knowledge.

The main objectives of the scheme are:

To provide judicious mix of skills relating to a profession and appropriate content of General Education.

To ensure that the students have adequate knowledge and skills, so that they are work ready at each exit point of the programme.

To provide flexibility to the students by means of pre-defined entry and multiple exit points.

To integrate NSQF within the undergraduate level of higher education in order to enhance employability of the graduates and meet industry requirements. Such graduates apart from meeting the needs of local

and national industry are also expected to be equipped to become part of the global workforce.

To provide vertical mobility to students coming out of 10+2 with vocational subjects.

OBJECTIVES OF THE B.Voc. COURSE IN FOOD PROCESSING TECHNOLOGY

To empower the students with the professional competence and expertise of food processing technology.

To enable the students to understand food composition and its physicochemical, nutritional, microbiological and sensory aspects.

To familiarize the students about the processing and preservation techniques of food products.

To emphasize the importance of food safety, food quality, food plant sanitation, food laws and regulations, food engineering and packaging in food industry.

ELIGIBILITY

A pass in plus-two (General group) or equivalent examinations (V.H.S.C.) recognized by the University.

DURATION OF THE COURSE

The course will be a **six semester full time programme** extending **three academic years** consisting of 90 working days of instruction in each semester including examination.

PROGRAMME

The programme is grouped under the Model III - New Generation Courses.

COURSE STRUCTURE

The curriculum is a suitable mix of **General Education** and **Skill Development** components. The General Education components emphasize and offer courses which provide holistic development. The focus of Skill Development components is to equip students with appropriate knowledge, practice and attitude, so as to become work ready. While designing the curriculum of Skill Development components, adequate attention has been given to practical work, industrial visit, internship, development of student portfolios and project work.

COURSE

The diploma **has 26 skill development courses, 20 general education courses, one choice based course, one open course, 6 skill development internships and one skill development project. The total credits is 180 for the entire programme**.

(*One Credit is equivalent to 18 periods of 60 minutes each, for theory, workshops/labs and tutorials. For internship/field work, the credit weightage for equivalent hours shall be 50% of that for lectures/workshops.*)

COURSE CODE

The following methodology is adopted for course codes.

(FPT-Food Processing Technology, HOR- Horticulture, EES-Energy and Environmental Studies, 1-First

Semester, S-Skill Development, 1T-First Theory Paper, 2T- Second Theory Paper, P-Practical, G-General Education, I-Internship / training.)

EXAMINATIONS

The evaluation of each course shall contain two parts such as internal or In-Semester Assessment (ISA) and External or End-Semester Assessment (ESA). The external examination of all semesters shall be conducted at the end of each semester. Internal evaluation is to be done by continuous assessment. The ratio between internal and external examinations shall be 1:4. There shall be a maximum of 80 marks for external evaluation and maximum of **20** marks for internal evaluation. For all courses (theory & practical), grades are given on a 07-point scale based on the total percentage of marks. ***(ISA+ESA)*** as given below.

Percentage of Marks	Grade	Grade Point
90 and above	A+ - Outstanding	10
80-89	A-Excellent	9
70-79	B-Very Good	8
60-69	C-Good	7
50-59	D-Satisfactory	6
40-49	E-Adequate	5
Below 40	F-Failure	4

Note : Decimal are to be rounded to the next whole number

Marks distribution for external and internal assessments and the components for internal evaluation with their marks are shown below :

For All course without practical:

Marks of external Examination : 60
Marks of internal evalution : 40

Components of Internal Evaluation	Marks
Attendance	10
Assignment/Seminar/Viva	10
Test Paper(s) **(1 or 2)** **(1 x 10 = 10; 2 x 5 = 10)**	20
Total	**40**

For all course with practical:

Marks of theory – External Examination : 60
Marks of theory – Internal Evaluation : 10

Components of Theory- Internal Evaluation	Marks
Attendance	3
Assigngment	2
Test paper(s) **(1 or 2)** **(1 x 5 =5; 2 x 2.5 = 5)**	5
Total	**10**

Marks of Practical – External Examination : 40
Marks of Practical – Internal Evaluation : 20

Components of Practical- Internal Evaluation	Marks
Attendance	4
Record	10
Lab involvement	6
Total	**20**

Attendance Evaluation:

For all course without practical

% of attendance	Marks
90 and above	5
85-89	4
80-84	3
76-79	2
75	1

For all courses with practical:

% of Attendance	Marks of Theory
90 and above	3
80-89	2
75-79	1

% of Attendance	Marks for Practical
90 and above	4
85-89	3
80-84	2
75-79	1

Assignments :

Assignments are to be done from 1st to 4th Semesters. At least one assignment should be done in each semester.

Project Evaluation : (Max. marks 100)

Components of Project- Evaluation	Marks
Internal Evaluation	20
Dissertation (External)	50
Viva – Voce (External)	30
Total	**100**

Credit Point and Credit Point Average:

Grades for the different Semesters and overall Programme are given based on the corresponding CPA, as shown in below.

Credit point (CP) of a Course is calculated using the formula

CP = C X GP, where C = Credit; GP = Grade Point

Credit Point Average (CPA) of a Semester or Programme etc. is calculated using the formula.

CPA = $\frac{TCP}{TC}$, **Where TCP = Total Credit Point:**

TC = Total Credit

GUJARAT VIDYAPITH – AHMEDABAD

Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar

Department of Home Science

Bachelor of Vocational (Food Processing Technology)

REVISED COURSE STRUCTURE

(In Force from June-2018)

Course-B-VOC-FPT	Sem-1	Sem-2	Sem-3	Sem-4	Sem-5	Sem-6
CORE	FPT-101	FPT-201	FPT-301	FPT-401	FPT-501	FPT-601
	FPT-102	FPT-202	FPT-302	FPT-402	FPT-502	FPT-602
	FPT-103	FPT-203	FPT-303	FPT-403	FPT-503	FPT-603
			FPT-304	FPT-404		FPT-604
	13.5	13.5	18	18	13.5	13.5
DISCIPLINE SPECIFIC ELECTIVE			DSE 301: FOOD SCIENCE	DSE 401: BASIC BIO CHEMISTRY	DSE 501:FOOD BIO CHEMISTRY	DSE 601: NUTRITION HEALTH COMMUNICATION
			4.5	4.5	4.5	4.5
GENERIC ELECTIVE	GE 101 HINDI VINEET	GE 201 FOOD AND NUTRITION				
	GE 102 HUMAN NUTRITION	GE 202 FOOD PRESERVATION TECHNIQUES				

GANDHIAN THOUGHT	GT 101 GANDHIAN THOUGHTS	ENV 201 ENVIRONMENTAL STUDY				
	2					
ABILITY ENHANCEMENT	ENG 101	ENG 201	ENG 301	ENG 401	ENG 501	ENG 601
	2	2	2	2	2	2
SKILL ENHANCEMENT	UDY 101	UDY 201	UDY 301	UDY 401	UDY 501	UDY 601
	2	2	2	2	2	2
	23.5	23.5	26.5	26.5	22	22

GENERIC ELECTIVE

GE-101-HINDI VINEET

GE-102-HUMAN NUTRITION

GE-201-FOOD AND NUTRITION

GE-202-PRESERVATION TECHNIQUES

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-I
FPT-101 BASIC PRINCIPLES OF FOOD PROCESSING
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :3)

Objectives
To deliver a sequence of steps to produce an acceptable and quality food product from raw materials.
Study of scientific and technological advancements in food processing.

Unit-1. Classification of Food
Definition of food, classification of foods- based on origin, pH, nutritive value, functions of food, Health food, ethnic food, organic food, functional food, nutraceuticals, fabricated foods, convenience foods, GM food and space foods.

Unit-2. Fundamentals of Food Processing
Steps involved in converting a raw harvested food materials to a preserved product with sound quality- harvesting, storage, manufacturing, preservation, packaging, distribution and marketing.

Unit-3. Post Harvest Management
Chemical, enzymatic, physical and biological deterioration, implications and prevention. Banana products- banana puree, banana chips, banana powder, Banana figs, banana flour; Tapioca products- Tapioca chips, tapioca powder; Fermented Products- Dosa, Idli, Appam, Vada. Pasta, Macaroni, Noodles, Mayonnaise, Salad Dressing, Margarine, Potato wafers, Potato chips, Corn flakes, Popcorn.

Text Books:

Brian E. Grimwood, Coconut Palm Products: Their Processing in Developing Countries, 1979.
Hui, Y H and Associate Editors; Hand Book of Food Products Manufacturing Vol I, Wiley- Interscience, New Jersey 2007.
Hui, Y H and Associate Editors; Hand Book of Food Products Manufacturing Vol II, wiley- Interscince, New Jersey 2007.
Manay, N.S, Shadaksharaswamy, M., Foods- Facts and Principles, New Age International Publishers, New Delhi, 2004.
Potter, N. N, Hotchkiss, J. H. Food Science. CBS Publishers, New Delhi. 2000.
Srilakshmi, B. Food Science (3rd edition), New Age International (P) Limited Publishers, New Delhi, 2003.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-I
FPT-101 BASIC PRINCIPLES OF FOOD PROCESSING- Practical
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :1.5)

Objectives
To deliver a sequence of steps to produce an acceptable and quality food product from raw materials.
Study of scientific and technological advancements in food processing.

FPT-101

- Grouping of Food – Discussion on Nutritive Values.
- Techniques in measurements of Food Staff use of standard we raring caps and spoons, wrights volume, relationships.
- Survey locally available foods and identify and find the cost of food staff.
- Find the edible and non edible portions of Food.
- Give the energy and protein value per 100 gm of food selecting from all food groups.
- Prepair the following food and its processing.
- Ethnic food – Banana Products.
- Mordern Food – Pasta Marconi
- Tapioca Food

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-I
FPT-102 -BASIC PRINCIPLES OF FOOD PRESERVATION
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :3)

Objectives

To enable the students to acquire knowledge on different preservation techniques used to enhance the shelf span of food product.

To study the different mode of spoilage in foods and minimize the contamination by different preservation technology.

Unit-1. Food Spoilage, Basic Principles of Food Preservation

Food spoilage- definition, types of spoilage- physical, chemical and biological. Definition, principles and importance of food preservation, general classification on the methods of food preservation, class I and class II preservatives, combination of preservatives, preservation by irradiation and fermentation.

Unit-2. Preservation by use of High, Low Temperature

Pasteurization, sterilization, canning- history and steps involved, types of cans and bottles.

Spoilage encountered. Refrigeration- Advantages, mechanism of refrigeration factors to be considered during chilling, difference between refrigeration and freezing, methods of freezing, steps involved in freezing, types of freezing, common spoilage during freezing.

Unit-3. Preservation by Removal of Moisture

Drying and dehydration-merits and demerits, factors affecting drying, preparation of food for drying, Freeze drying, dehydrofreezing-advantages, mechanism of freeze drying and dehydrofreezing, Concentration, principles and types of concentrated foods.

Text Books:

Subalakshmi, G and Udipi, S.A. Food processing and preservation. New Age International Publishers, New Delhi, 2001.

Srilakshmi, B. Food Science. New Age International Publishers, New Delhi, 2003.

Potter, N.N. and Hotchkiss J. H. Food Science. CBS publishers and distributors. 1996.

Srivastava, R.PO and Kumar, S. Fruit and vegetable preservation, International Book distribution Company, Lucknow, 1994.

MC.Williams, M and Paine, H. Modern Food preservation. Surjeet Publications, Delhi, 1984.

Cruess, W.V. Commercial fruits and vegetable products, Anees Offset press, New Delhi.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-I
FPT-102 -BASIC PRINCIPLES OF FOOD PRESERVATION- (Practical)
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :1.5)

Objectives

To enable the students to acquire knowledge on different preservation techniques used to enhance the shelf span of food product.
To study the different mode of spoilage in foods and minimize the contamination by different preservation technology.

Prepair Following receipes.
Jam, Jellies
Tomato Ketchup and tomato Sauce.
Mango Pickle, Lime Pickle, Mixed Vegetable Pickle.
Crushes, Squashes and Syrups.
Papad, Dehydrated Vegetables.

Food Spoilage :
Find the properties Physical, Chemical, Biological
Give the Irradiation, Fermentation.
Preservation by High Temprature.
Sterilization
Canning
Bottles
Preservation by Low Temprature.
Refrigation.
Types of Freezing.
Preservation of Food Samples arising humectants.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-I
FPT-103 - FOOD CHEMISTRY
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :3)

Objectives
To acquaint various functional chemical constituents of food.

To build a relationship between the dynamic forces of food and the dynamic forces of digestion and growth.

Unit-1. Introduction, Carbohydrates and its classification
Introduction to chemistry of foods composition and factors affecting foods, chemistry of water, water activity, moisture determination. Properties and classification, starch, cellulose, pectic substances, enzymes and its use in foods, gel formation and starch degradation, dextrinization,

Unit 2. Enzymes, Vitamins & Minerals
Browning reactions – Enzymatic & Non-enzymatic browning. Classification- Fat soluble & water soluble, structure, sources, functions, causes for losses of vitamins in foods, bioavailability. Minerals, classifications, sources, functions.

Unit-3. Proteins, Oils and Fats
Classification, physical and chemical properties of proteins and amino acids, confirmation, functional properties, hydrolysis of proteins, changes of proteins during processing. Classification, composition, physical and chemical properties, hydrolysis, hydrogenation, rancidity and flavor reversion, winterization, refining of oils, rendering, emulsions.

Text books:

Campbell, M K and Farrell, S O-Biochemistry 5th edition-international student, 2006

Damodaran,S., Parkin , K L.,Fennema, O R., Fennema's Food Chemistry- 4th edition, CRC press Taylor and Francis Group, New York 2008.

Fennema, O R. -Food Chemistry 3rd edition, Marcel Dekker Inc, New York., 1996.

Manay, N.S, Shadaksharaswamy, M., Foods- Facts and Principles, New Age International Publishers, New Delhi, 2004.

Meyer, L H-Food Chemistry. CBS publishers & distributors, New Delhi. 2002

Potter, N. N, Hotchkiss, J. H. Food Science. CBS Publishers, New Delhi. 2000.

Srilakshmi, B. Food Science (3rd edition), New Age International (P) Limited Publishers, New Delhi, 2003.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-I
FPT-103 - FOOD CHEMISTRY (Practical)
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :1.5)

1.Standardization of Solutions
Standardization of Fehling's solution.

Standardization of Sodium hydroxide with standard oxalic acid.

2.Estimation of Sugar Solutions
Estimation of Glucose by Lane and Eynon's method.

Estimation of **Sucrose by Lane and Eynon's method.**

Estimation of Aldose by Willstalter's Iodometric titration

Estimation of starch.

3.Estimation of Protein

Kjeldhal method.

Biuret method

Lowry's method

4.Estimation of Vitamin.

Estimation of vitamin C

5.Qualitative Test **2 Hrs**

Qualitative tests for carbohydrates

•Qualitative tests for proteins. **3 Hrs**

Text books:

Nielsen, S.S. Introduction to the chemical analysis of foods. Jones and Bartlett Publishers, Boston, London. 2003

Sadasivam,S. Manickam, A. Biochemical Methods, 2nd edition. New Age International

(P) Limited, New Delhi. 2001

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-I

GT 101- Gandhian Thoughts

Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 30 , Credit :2)

એકમ ૧ મંગલપ્રભાત **6 કલાક**

૧.૧ વ્રત એટલે શું? વ્રતની આવશ્યકતા

૧.૨ એકાદશ વ્રત

શાશ્વત વ્રત - યમ: સત્ય, અહિંસા, અસ્તેય, બ્રહ્મચર્ય, અપરિગ્રહ

દેશકાળની પરિસ્થિતિ પ્રમાણે ઉમેરેલા વ્રતો - નિયમ: અસ્વાદ, સર્વધર્મસમભાવ, જાતમહેનત, અભય, અસ્પૃશ્યતા નિવારણ, સ્વદેશી

૧.૩ જીવનમાં વ્રતનું મહત્વ

એકમ ૨ રચનાત્મક કાર્યક્રમ 10 કલાક

૨.૧ રચનાત્મક કાર્યક્રમ એટલે શું?

૨.૨ રચનાત્મક કાર્યક્રમની પ્રસ્તુતતા

૨.૩ ખાદી:

ખાદીનો ઈતિહાસ

ચરખા અને અંબર ચરખાનો પરિચય,

ખાદીનું મહત્વ (શ્રમનું ગૌરવ, ગરીબો અને ખેડૂતોની જીવાદોરી, ગ્રામોધ્ધાર માટે ખાદી, ખાદી અને પર્યાવરણ, ખાદી અને આરોગ્ય)

૨.૪ વ્યસનમુક્તિ

વ્યસન એટલે શું? વ્યસનના પ્રકાર, વ્યસનની આરોગ્ય પર અસર,

વ્યસનની સામાજિક અસર

વ્યસન મુક્તિના કાર્યક્રમો

એકમ ૩ આચારની કેળવણી **5 કલાક**

૩.૧ આચારની કેળવણી અને તેનું મહત્વ

૩.૨ કુટુંબમાં સમૂહજીવનનો આચાર

૩.૩ શૈક્ષણિક સંસ્થાઓમાં સમૂહજીવનનો આચાર

૩.૪ જાહેર સ્થળોના રખ-રખાવ અને સ્વચ્છતા

૩.૫ સામાન્ય વિવેક

એકમ ૪ ઉર્જા અને તેનું મહત્વઃ 9 કલાક

૪.૧ ઉર્જા એટલે શું?

૪.૨ ઉર્જાના સ્વરૂપઃ યાંત્રિક ઉર્જા, ઉષ્મા ઉર્જા, રાસાયણિક ઉર્જા, ગુરુત્વાકર્ષણીય ઉર્જા, નાભીય ઉર્જા, સૌર ઉર્જા, વિદ્યુત ઉર્જા

૪.૩ ઉર્જાના સ્ત્રોતઃ પુનઃપ્રાપ્ય અને પુનઃઅપ્રાપ્ય ઉર્જા સ્ત્રોત

૪.૪ ઉર્જા બચત અને ગાંધીવિચાર

૪.૫ બિનપરંપરાગત ઉર્જાના સાધનોઃ સૂર્યકુકર, સોલાર હીટર, સોલાર ડ્રાયર, પવનચક્કી, સૌર તળાવ, સૌરલાઈટ, બાયોગેસ, બાયોમાસ વગેરે

૪.૬ ઉર્જા સંરક્ષણ

સંદર્ભ પુસ્તિકાઓ

૧ સમૂહ જીવનનો આચાર, બબલભાઈ મહેતા

૨ આરોગ્યની ચાવી, ગાંધીજી

૩ ખાદી શા માટે?, ગાંધીજી

૪ સમયનો તકાદોઃ પુનઃપ્રાપ્ય ઉર્જા, પાંચમી આવૃત્તિ, જેડા, વડોદરા.

૫ મંગલપ્રભાત - ગાંધીજી

૬ રચનાત્મક કાર્યક્રમો આજના સંદર્ભમાં- દશરથલાલ શાહ

૭ રચનાત્મક કાર્યક્રમોઃ તેનું રહસ્ય અને સ્થાન – ગાંધીજી

૮ પર્યાવરણ સાથી- રમેશ સાવલિયા, CEE

૯ ગાંધીના પાવન પ્રસંગો- લલ્લુભાઈ મકનજી દેસાઈ

૧૦ “ચુપ નહિ રહેવાય” (ટોલ્સટોય ના નિબંધોનો અનુવાદ) નવજીવન પ્રકાશન મંદિર, અમદાવાદ

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-I
ENGLISH-101
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 30 , Credit :2)

Objectives:

To read simple passages to find out information contained it.

To familiarize students with vocabulary used in the passages.

To familiarize students with the functions of tenses generally used in daily life.

To help students in writing short descriptive paragraphs based on pictures.

Unit 1: Comprehension and Vocabulary (50%; 12 Hours)

The Kite Maker by Ruskin Bond

The Portrait of a Lady by Khushwant Singh

Print Advertisement – Admission Announcement

Print Advertisement – Sales Advertisement

Exercises:

Short questions

Fill in the blanks

Multiple choice questions based on the text

Antonyms/Synonyms

Match words with their meanings

NB: Short questions as well as other exercises should be informative in nature.

Unit 2: Grammar (30%: 6 Hours)

Noun: Number and Gender

Articles

Simple Present Tense

Present Continuous Tense

Simple Past Tense

Past Continuous Tense

Subject-Verb Agreement

NB: Unit 2 should be done along with Unit 1 so that students can see how these grammatical categories actually work to produce meaning

Unit 3: Writing Skills (20%; 3 Hours)

1. Picture Reading (Use of Simple Present Tense and Present Continuous Tense)

NB: Use at least five pictures in the classroom for demonstration as well as practice.

Unit 4: Academic Skills: Reference Skills (2 Hours)

Types of dictionaries

Functions of a dictionary

How to use a dictionary?

Optimum utilization of dictionary

Dictionary and pronunciation

How to use a thesaurus?

Online dictionaries and thesaurus

Inbuilt dictionaries in Word Processors

Mobile dictionaries

Guessing meaning from the context

NB: This unit is not to be asked in the examination.

List of Reference Books:

Tickoo, M. L. *et al.* Eds. *I Am The People: English Reader.* Delhi: CBSE, 1996.

Achar, Deeptha *et al.* Eds. *English for Academic Purposes Book – 1.* Gandhinagar: University Granthnirman Board, 2011.

Achar, Deeptha *et al.* Eds. *English for Academic Purposes Book – 2.* Gandhinagar: University Granthnirman Board, 2011.

GUJARAT VIDYAPITH – AHMEDABAD

Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-I
GE- 102 HUMAN NUTRITION
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 30 , Credit :2)

Unit 1: Basic Concepts in Human Nutrition

Basic terms used in nutrition • Understanding relationship between food, nutrition and health • Functions of food-Physiological, psychological and social • Basic food groups and concept of balanced diet

Unit 2: Nutrients, Vitamins and Minerals

Energy- Functions, sources and concept of energy balance. Functions, Recommended Dietary Allowances, dietary sources, effects of deficiency and/ or excess consumption on health of the following nutrients:

- Carbohydrates and dietary fibre,
- Lipids
- Proteins
- Fat soluble vitamins-A, DX and K
- Water soluble vitamins – Thiamin, Riboflavin, Niacin, Pyridoxine, Folate Vitamin B12 and Vitamin C
- Minerals – Calcium, Iron, Zinc and Iodine

RECOMMENDED READINGS

- Wardlaw and Tnsel MG, Insel PM (2004). Perspectives in Nutrition. Sixth Edition, McGraw Hill.
- Srilakshmi B (2012). *Nutrition Science.41* Revised Edition, New Age Interntional Publishers.
- Khanna K, Gupta 5, Seth R, Passi SJ, Mahna R, Pun 5 (2013). Textbook of Nutrition and Dietetics. Phoenix Publishing House Pvt. Ltd.
- ICMR(2010) Recommended Dietary Allowances for Indians. Published by National Institute of Nutrition, Hyderabad.
- Chadha R and Mathur P eds. *(2015).* Nutrition : A Lifecycle Approach. Orient Blackswan, New Delhi.
- *Seth V* and Singh K (2006). *Diet Planning through the Life Cycle: Part 1 Normal Nutrition.* A *Practical Manual.* Elite Publishing House Pvt. Ltd. New Delhi.
- Gopalan C, Rama Sastri BV, Balasubramanian SC (1989) *Nutritive Value of Indian Foods.* National Institute of Nutrition, ICMR, Hyderabad.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-II
FPT-201 BASIC PRINCIPLES OF FOOD ENGINEERING
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :3)

Objectives

Students will be able to apply material balances and energy balances to the field of food engineering.

Students will be able to understand equipment used in the food industry.

Unit-1. Engineering Units

Dimensions – Primary, secondary, engineering units- Base units, derived and supplementary units System – state of system, extensive properties, Intensive properties.

Unit 2. Heat Transfer in Food Processing

Modes of heat transfer –conductive heat transfer, convective heat transfer, radiation heat transfer Systems for heating and cooling food products, plate heat exchanger, tubular heat exchanger, scraped surface heat exchanger, steam infusion heat exchanger.

Unit-3. Mechanical Operations and Sepration, Irradiation

Mixing-different type of mixers used in food in industry, Clarification and concentration process-evaporation, diffusion concentration. Sedimentation, centrifugation, distillation, Filtration- batch filtration, continuous filtration, ultra filtration, reverse osmosis.Definition, principle, advantages and disadvantages, application of radiation in food industry, doses, effect of radiation in food- direct and indirect.

Text books:

Dincer, I. Heat Transfer Food Cooling Applications. Taylor and Francis Publishers, USA. 1997.

Heldman, D. R. and Lund, D.B. Handbook of Food Engineering 2nd edition. CRC press, Newyork. 2007.

Singh, R.P. Introduction to Food Engineering 3rd edition. Academic Press, London. 2004

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-II
FPT-201 BASIC PRINCIPLES OF FOOD ENGINEERING (Practical)
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :1.5)

Objectives

Students will be able to apply material balances and energy balances to the field of food engineering.

Students will be able to understand equipment used in the food industry.

- Heat Transfer of Modes
- Machanical peraitons with Equipment
- Visit and Field Trip of Related Industry.

GUJARAT VIDYAPITH – AHMEDABAD

Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar

Department of Home Science

B.Voc. (Food Processing Technology) SEMESTER-II

FPT-202 FOOD ADDITIVES

Revised Course Structure - (In force from June 2018)

(External Evaluation 60% + Internal Evaluation :40%)

(Total Teaching hours= 45 , Credit :3)

Objectives

To attain knowledge regarding the use of additives in the food industry, laws related to food additives and to prevent the involuntary infringement of analytical procedures.

Unit-1. Introduction, Major Food Additives

Food additives, definition, objectives, functional classification, natural and synthetic additives, health and safety aspects of food additives. Preservatives- class I&II, antioxidants, Sweetners- natural and artificial, permitted food colours- natural and artificial, Food flavours – natural and artificial, Stabilizers and thickeners

Unit 2. Minor Food Additives.

Aerating agents, Antistaling agents, Bodying agents, Clouding agents, Curing agents, Clarifiers, Dietary supplements, Dietary fibre, Emulsifiers, Enzymes, Fat replacers, Leavening agents, Surfactants, Tenderizers, Texurizers, Thickners, Viscosity modifiers, Whipping agents

Unit-3. Food Laws and Standards

Food standards – Voluntary and mandatory food laws and Food Safety and Standards Act of India, 2006. Permitted level of food additives, present status of various food additives, controversial food additives, GRAS

Text books:

Manay, N.S, Shadaksharaswamy, M., Foods- Facts and Principles, New Age International Publishers, New Delhi, 2004.

Meyer, L H-Food Chemistry. CBS publishers & distributors, New Delhi. 2002.

Potter, N. N, Hotchkiss, J. H. Food Science. CBS Publishers, New Delhi. 2000.

Srilakshmi, B. Food Science (3rd edition), New Age International (P) Limited Publishers, New Delhi, 2003.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-II
FPT-202 FOOD ADDITIVES (Practical)
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :1.5)

Objectives

To attain knowledge regarding the use of additives in the food industry, laws related to food additives and to prevent the involuntary infringement of analytical procedures.

- Presevatives
- Natural
- Artificial
- Visit to various food and laws
- Standards
- Seminar and Visit Preservation

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-II
FPT-203 BASIC FOOD MICROBIOLOGY
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :3)

Objectives

Acquire an elementary knowledge about micro organisms.
Develop an understanding of industry and in maintenance of health.

Unit-1. Introduction to microbiology
Microbiology in daily life, Characteristics and morphology of bacteria, fungi, virus, protozoa & algae. SCP- Microorganisms used, raw materials used as substrate,

Unit 2. Microbial Growth, Beneficial microorganisms
Condition for growth and production, nutritive value and use of SCP Microorganisms of industrial importance, biomass, fermentation, enzymes & hormones, Antibiotics & vaccines, Microorganisms & effluent treatment

Unit-3. Cultures and Media, Food Borne Diseases
Growth curve, Effect of pH, Water activity, O2 availability & temperature on the growth of microorganisms. Different type of media- Selective media and differential media; Preparation of media- PDA media, Nutrient agar, Mac Conkey agar, Culturing techniques- Spread plate and streak plate, pour plate. Food intoxication- Staphylococcal intoxication, botulism, Food infection- Salmonellosis, Clostridium perfringens, Bacillus cereus gastroenteritis, E. coli infection and others

Text books:

Frazier, W.C. Food Microbiology. 4th edition. Mc Graw Hill. New York, 2008

Khetarpaul, N. Food microbiology, Daya publishing house, New Delhi, 2009

Narayanan, L.M. and Mani,L. Microbiology.Saras Publications, Nagercoil.

Pelzar, H.J. and Rober, D. Microbiology 5th edition Mc Graw Hill. NewYork, 2009

Prescott, L.M., Harley, J.P. and Klein, D.A. Microbiology. 4th edition McGraw-Hill, NewYork. 1999

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-II

FPT-203 BASIC FOOD MICROBIOLOGY (Practical)

Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :1.5)

Objectives

To study the basic rules and requirements of a microbiology laboratory.

Give emphasis towards the preparation of biological stains, reagents, media and their composition.

To get thorough different methods for staining of microorganisms.

Microbiology laboratory basic rules and requirements

Laboratory rules- basic rules of a microbiology lab, basic requirements of a microbiological lab- common glass ware; test tube, culture tube and screw capped tubes, Petri dish, pipette, Pasteur pipette, glass spreader, inoculation needle, Bunsen burner, water bath, autoclave, laminar air flow, incubator, hot air oven, Quebec colony counter, centrifuge, microscope. Disposal of laboratory waste and culture.

Staining of microorganisms and Demonstration of techniques for pure culture of microorganisms, Composition, preparation and sterilization of media

Methods for detection of specific bacteria: wet mount preparation for motile bacteria, hanging drop mount method, Methods for staining of micro organism: Simple staining (Monochrome staining) Gram staining for differentiation of bacteria Negative staining of bacteria Endospore staining. Streak plate method, Pour plate method, Serial dilution agar plate method. PDA media Nutrient agar media Mac-Conkey agar media

Microbiology of milk:

Enzymatic test of milk by methylene blue reductase test, quality testing of milk by resazurin test, determination of phosphatase activity of milk, detection of mastitis through milk test.

Micribniology of Fruit, Vegetable, Canned Food, Spiees, Baverages,

Text Books:

Dubey, R.C. and Maheshwari, D.K. Practical microbiology. S.Chand and Company Limited, Ramnagar. New Delhi 2002.

GUJARAT VIDYAPITH – AHMEDABAD

Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar

Department of Home Science

B.Voc. (Food Processing Technology) SEMESTER-II

GE 201: FOOD AND NUTRITION

Revised Course Structure - (In force from June 2018)

(External Evaluation 60% + Internal Evaluation :40%)

(Total Teaching hours= 30 , Credit :2)

Objectives:

Student will able to understand nutrition and health.

To know about nutrients and dietary function of human body.

Unit 1:

Concept of food and Nutrition

Definition of terms nutrition, malnutrition, health and nutritional status, Functions of food, nutrients supplied by food, **Nutrients** (Sources, Functions, digestion, Absorption, assimilation and transport of carbohydrates, proteins and fats in human beings)

Unit 2:

Nutritive value of planned diet RDA (For Man and Women) of Nutrients , RDA (For Man and Women) Food stuffs, Sample meal plan for adult, Low cost snacks, Nutrition/ Health problems adolescents.

References

Gopalan, C, Balasubramanniam, S.C. Ramasastri, B.V. and Visweswara Rao, K, 1971. Diet Atlas by India, ICMR, India.

Bondy, P.K. and Rosenberg, I.E. 1974. Duncun's Diseases of Metabolism, 7th ed. Philadelphia Saunders.

Dickerson, J.W. and Lee, H.A. 1978. Nutrition in the clinical management of disease. London Arnold.

Davidson, N.S. , Passmore, R. Brock, J.K and Trowel, A.S. 1975. Human nutrition and dietetics. 6th edition Churchil Living Stone.

Expert Panel, Department of Health and Social Security. Recommended inatkes of nutrients for the United Kingdom. Rep No. 120. Her Majesty's Stationary Office, London, 1969.

FAO/WHO expert group calorie protein requirements, FAO nutrition meeting report series, FAO Rome, 1973.

Mehta Jaishree. 2014. Avishkar Publishers Distributers, Jaipur (Rajasthan) India.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-II
GE 202: PRESERVATION TECHNIQUES
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 30 , Credit :2)

Objectives

Student will able to understand preservation techniques
To know about food preservation and reduction of their waste.

Unit 1:

Importance of preservation.
Different Preservation Methods.
Role of food preservation in present Scenario.

Unit 2:

Different types of food preservation.
Natural.
Artificial.
Organic.
Inorganic .

Text Books:

Subalakshmi, G and Udipi, S.A. Food processing and preservation. New Age International Publishers, New Delhi, 2001.
Srivastava, R.PO and Kumar, S. Fruit and vegetable preservation, International Book distribution Company, Lucknow, 1994.
MC.Williams, M and Paine, H. Modern Food preservation. Surjeet Publications, Delhi, 1984.
Cruess, W.V. Commercial fruits and vegetable products, Anees Offset press, New Delhi.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-II
ENV 201: ENVIRONMENTAL STUDY
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 30 , Credit :2)

એકમ ૧ - પર્યાવરણ નો પરિચય ૧૦ કલાક

(અ) પર્યાવરણ: પર્યાવરણ એટલે શું? પર્યાવરણના પ્રકારો: ભૌતિક પર્યાવરણ, જૈવિક પર્યાવરણ, સામાજિક કે સંસ્કૃતિક પર્યાવરણ, જૈવાવરણ, જૈવાવારના વિવિધ વિભાગો, જૈવમંડળ: સ્થાલીય જૈવમંડળ, જલીય જૈવમંડળ.

(બ) પર્યાવરણમાં જૈવિક વિવિધતાનો પરિચય

જૈવિક વિવિધતા એટલે શું? જૈવિક વિવિધતાના પ્રકારો: પરિસ્થિતિ તંત્રની વિવિધતા, જાતિઓની વિવિધતા અને જનીનીય વિવિધતા, જૈવિક વિવિધતાનું મહત્વ, તેની સામેના ભયસ્થાનો

એકમ ૨ - કુદરતી સ્ત્રોતો: જમીન અને જંગલો ૧૦ કલાક

જમીન નિર્માણ અને તેના પર અસર કરતા પરિબળો, જમીન એટલે શું? તેના વિભાગો: સપાટીની જમીન અને અંતઃ જમીન, જમીનની સ્થાનિક પર્યાવરણ પર અસરો, જમીનના ગુણધર્મો: જૈવિક ગુણધર્મો, ભૌતિક ગુણધર્મો અને રાસાયણિક ગુણધર્મો, , સજીવ ખેતી, સજીવ ખેતીના પાંચ પગથિયા. જંગલોનું મહત્વ, જંગલ વિનાસના કારણો અને તેને નિવારવાના ઉપાયો.

એકમ ૩ કુદરતી સ્ત્રોતો: જળ અને હવા ૧૦ કલાક

(અ) જળ: જળનું મહત્વ, પાણીના ગુણધર્મો, પાણીના સ્ત્રોતો: જમીનમાં રહેલ પાણીનું વર્ગીકરણ, ભૂગર્ભ જળસપાટીની અસરો, લભ્ય પાણી, શુદ્ધ પાણી, જૈવિક ધોરણો, ઘરમાં પીવાનું પાણી શુદ્ધ રાખવાની સામાન્ય રીતો, પાણી અને રોગો, જળ પ્રદુષણ, પાણીની સમસ્યાના સંભવિત ઉપાયો

(બ) હવા: હવાનું મહત્વ, વાતાવરણ, વાતાવરનું બંધારણ, વાયુ પ્રદુષણ, ઓઝોન સ્તર, ગ્રીનહાઉસ અસર અને તેની પર્યાવરણ પર અસરો, વાયુ પ્રદુષણ અટકાવવાના ઉપાયો.

સંદર્ભ પુસ્તિકાઓ

1 પર્યાવરણ સાથી

2 પર્યાવરણ અધ્યયન (પર્યાવરણના અભ્યાસનું બહુવિદ્યાશાખીય સ્વરૂપ) –એ.જે.ભરૂચા

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-II
ENGLISH-201
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 30 , Credit :2)

Objectives

To read different kinds of simple material to find out information contained it.

To familiarize students with vocabulary used in the passages

To acquaint students with vocabulary having multiple meanings.

To familiarize students with the functions of some of the tenses.

To orient students towards electronic communication.

To develop among students the academic skills of locating books and journals.

Unit 1: Comprehension and Vocabulary (50%; 10 Hours)

To Sir, with Love by E. R. Braithwaite

My Struggle for an Education by Booker T. Washington

Sample of Invitation Cards

Sample of Notices

Comprehension Pattern:

Short questions

Fill in the blanks

Multiple choice questions based on the text

Antonyms/Synonyms (Based on the comprehension texts only)

Homophones and Homonyms

NB: Short questions as well as short notes should be informative in nature.

Unit 2: Grammar (20%; 5 Hours)

Pronouns (Detailed Study)

Present Perfect Tense

Present Perfect Continuous Tense

Past Perfect Tense

Past Perfect Continuous Tense

Unit 3: Writing Skills (30%; 06 Hours)

Writing Emails

Describing an Experiment

NB: Only those experiments are to be considered which students undertake in their laboratory.

Unit 4: Academic Skills: Reference Skills (02 Hours)

Accessing Books and Journals in a Library

Using Index of a book to locate specific information

NB: This unit is not to be asked in the examination.

List of Reference Books:

Achar, Deeptha et al. Eds. *English for Academic Purposes Book – 1*. Gandhinagar: University Granthnirman Board, 2011.

Achar, Deeptha et al. Eds. *English for Academic Purposes Book – 1*. Hyderabad: Orient BlackSwan, 2012.

Achar, Deeptha et al. Eds. *English for Academic Purposes Book – 2*. Gandhinagar: University Granthnirman Board, 2011.

Achar, Deeptha et al. Eds. *English for Academic Purposes Book – 2*. Hyderabad: Orient BlackSwan, 2013.

Tickoo, M. L. et al. Eds. *I Am The People: English Reader*. Delhi: CBSE, 1996.

Wren, P. C. and H. Martin. *High School English Grammar and Composition*. (Gujarati). Trans. Dr. Usha Upadhyay and Jegeesha Upadhyay. New Delhi: S. Chand, 2013.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-III
FPT-301 FOOD PROCESSING MACHINERIES
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :3)

Objectives

To study the design of food process and food plant design, based on the established chemical process designed.

To discuss the various processing equipment on the basis of unit operations of mechanical processes.

Unit-1. Design and selection of food processing equipment,
Materials of construction-metals, steel, stainless steels, aluminium, copper, plastic, and glass, Fabrication of equipment-strength of construction, Fabrication and installation of equipment, hygienic design of food processing equipment.

Unit 2: Refrigeration and Freezing Equipment, Food Dehydration Equipment
Refrigeration –refrigeration cycle, compressors, evaporators, condensers, cooling equipment, hydrocooling, vacuum cooling, surface contact cooling, tunnel cooling, vacuum cooling freezing-air freezing, cold surface freezing, liquid freezing. Principles of drying, commercial food drying equipment-sun dryers, solar dryers, bin, silo and tower dryers, tray/cabinet dryers, tunnel dryers, rotary dryers, drum dryers, spray dryers, vacuum and freeze dryers.

Unit-3. Mechanical, Thermal processing equipment
Size reduction- cutting, crushing and grinding, size enlargement - agglomeration, homogenization-pressure homogenization, colloid mills, ultrasonic homogenizers, forming-extrusion and forming equipment. Canning-basic canning operations, batch sterilizers-still retorts, batch rotary sterilizers, crateless retorts, retorts for glass and flexible containers, continuous flow sterilizers-direct heating and indirect heating

Text books:

Dincer, I. Heat Transfer Food Cooling Applications. Taylor and Francis Publishers, USA. 1997.

Heldman, D. R. and Lund, D.B. Handbook of Food Engineering 2nd edition. CRC press, Newyork. 2007.

Singh, R.P. Introduction to Food Engineering 3rd edition. Academic Press, London. 2004.

Saravacos,G D and Kostarapoulos A E.Handbook of Food Processing Equipment.2006.Brijbasi Art Press Ltd,New Delhi.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-III
FPT-301 FOOD PROCESSING MACHINERIES (Practical)
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :1.5)

Objectives

To study the design of food process and food plant design, based on the established chemical process designed.

To discuss the various processing equipment on the basis of unit operations of mechanical processes.

- Hygienic Design of Good Processing Equipment
- Thermal Processing
- Referigeration and Freezing
- Commercial Food Drying Equipments
- Dehydrated Process During Practical.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-III
FPT-302 BAKERY AND CONFECTIONERY TECHNOLOGY
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :3)

Objectives

To highlight the processing methods used in confectionary and culinary industries

Unit-1. Manufacture of Sugar, Bread Cake & Biscuit manufacturing

Sugarcane, gur, khandasari sugar, raw sugar, refined sugar, white sugar, beet sugar. Ingredients, role of ingredients, dough development, molding, proofing, knock-back, baking, packing. Processing of cake and biscuit- Ingredients, role of ingredients, development of batter,
baking, packing.

Unit-2. Classification of confectionery

Sugar boiled confectionery- crystalline and amorphous confectionery, rock candy, hard candy, lemon drop, china balls, soft candy, lollypop, marshmellows, fondant, fudge, cream, caramel, toffee, lozenges, gumdrops, honeycomb candy.

Unit 3. Cocoa processing

Processing of cocoa, manufacture of chocolate- conching, enrobing, milk chocolate, white chocolate, dark chocolate, cocoa butter, wafer coated chocolate, fat bloom, cocoa powder.

Text books:

Manay, N.S, Shadaksharaswamy, M., Foods- Facts and Principles, New Age International Publishers, New Delhi, 2004.

Potter, N. N, Hotchkiss, J. H. Food Science. CBS Publishers, New Delhi. 2000

Srilakshmi, B. Food Science (3rd edition), New Age International (P) Limited Publishers, New Delhi, 2003.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-III
FPT-302 BAKERY AND CONFECTIONERY TECHNOLOGY (Practical)
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :1.5)

Objectives

To highlight the processing methods used in confectionary and culinary industries

- Process of Sugar
- Cake and Bread Making
- Biscuit Packing.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-III
FPT-303 FOOD ADULTERATION TESTING
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :3)

Objectives

To enable the students
To understand different sampling techniques employed in chemical analysis of foods.
To learn various chemical methods of food analysis.
To be familiar with adulteration test used for quality control

Unit-1. Food Adulteration
Definition, classification – intentional & incidental, health hazards caused by various adulterants and the critical level of metals in various foods, common adulterants in food and their testing.

Unit 2. Sampling techniques and Chemical analysis of moisture,
Population and sampling, importance of sampling, types of sampling, sampling plan, preparation of samples, problems in sampling. Moisture assay – oven drying methods, Karl Fischer titration, Toluene distillation method

Unit-3. Carbohydrates and protein, Chemical analysis of fat, vitamin C and minerals
Carbohydrate- starch, crude fiber Protein- Kjeldhal method, Biuret method, Lowry's method. Fat- soxhlet method, gerber method. Analysis of vitamin C. Estimation of minerals by ashing - dry, wet and low temperature plasma ashing.

Text books:

Kalia, M. Food Analysis and Quality Control. Kalyani Publishers, New Delhi. 2002.

Winton, A.L and Winton, K.B. Techniques of food analysis. Allied Scientific Publishers, New Delhi. 1999.

Nielsen, S.S. Introduction to the chemical analysis of foods. Jones and Bartlett Publishers, Boston, London. 2003.

Connell, J.J. Control of fish quality. Blackwell Scientific Publications, Cambridge. 2000.

PFA ACT.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-III
FPT-303 FOOD ADULTERATION TESTING (Practical)
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :1.5)

Objectives

To enable the students

To understand different sampling techniques employed in chemical analysis of foods.

To learn various chemical methods of food analysis.

To be familiar with adulteration test used for quality control

Food Testing

- Chemical
- Moisture
- Carbohydrate
- Protein
- Common

Adulteration Testing

- Food and Their Testing

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-III
FPT-304 FOOD PRODUCT DEVELOPMENT
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :3)

Objectives

- To learn various processing aspects of food products having economic importance

Unit-1 :
Detail Techniques of Processing Aspects.

Unit-2:
Milk and milk Processing, Fruit Product Detail and Write methods of Jack Fruit Products.

Unit-3:
Method of Making peanut butter importance of peanut butter and nutritive value.
New Inovation of Preparation of 5 product development list.

Text books:

Manay, N.S, Shadaksharaswamy, M., Foods- Facts and Principles, New Age International Publishers, New Delhi, 2004.

Potter, N. N, Hotchkiss, J. H. Food Science. CBS Publishers, New Delhi. 2000.

Srilakshmi, B. Food Science (3rd edition), New Age International (P) Limited Publishers, New Delhi, 2003.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-III
FPT-304 FOOD PRODUCT DEVELOPMENT (Practical)
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :1.5)

Objectives

- To learn various processing aspects of food products having economic importance

1. Manufacture of bread, biscuit and different types of cake.
2. Manufacture of different milk products.
3. Manufacture of jack fruit products.
4. Preparation of mayonnaise.
5. Preparation of peanut butter.
6. Preparation of potato chips and tapioca chips.
7. Preparation of RTS.
8. Preparation of new product development.

GUJARAT VIDYAPITH – AHMEDABAD

Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar

Department of Home Science

B.Voc. (Food Processing Technology) SEMESTER-III

DSE-301: Food Science

Revised Course Structure - (In force from June 2018)

(External Evaluation 60% + Internal Evaluation :40%)

(Total Teaching hours= 45 , Credit :3)

Objectives:

Unit I: Introduction to food science, Chemistry, Microbiology

- Definition, importance and applications
- Basic terminology used in food science
- Sources, chemistry and functional properties of Carbohydrates, Lipids and Proteins.
- Colloidal chemistry: Definition, classification, properties and applications of sols, gels, foams and emulsions.
- Introduction to yeast, mold and bacteria - Characteristics and their role in preservation and spoilage of food.
- Hygiene and sanitation practices in food processing and waste disposal.

Unit II: Preservation techniques, principles and their applications

• High temperature, low temperature, removal of moisture, irradiation and additives. • Food packaging and labeling: FSSAI, Codex

Text Book :

- Frazier W. C. and Westhoff D. C. (1988). Food Microbiology, 4th Edition.

• Manay S. and Shadaksharaswamy M (2002). Foods - Facts and Principles. Wiley Eastern Ltd. • Potter H *(1995).* Food Science, 5th Edition. CBS Publishers & Distributors.

- Srilakshmi (2007). Food Science, 4th Edition. New Age International Ltd.
- www.fssai.gov.in

• Raina U, Kashyap 5, Narula V, Thomas 5, Suvira, Vir 5, Chopra S (2010). Basic Food Preparation: A Complete Manual, Fourth Edition. Orient Black Swan Ltd.

• Sethi Mohini and Rao E (2011). Food Science (Experiments and Applications), 2nd Edition. CBS Publishers & Distributers Pvt. Ltd.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-III

DSE-301 Food Science (Practical)

Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :1.5)

Objectives:

Applications and factors affecting formation of Sols, gels, foams and emulsions ii. Study of microscopic structure of different food starches and their gelatinization properties

- Slide preparation and identification of bacteria yeast and mold ii. Assessment of hygienic practices of food handlers
- Preservation of food using different methods (Blanching, Dehydration, Freezing) Basic principle involved in food preservation using additives
- Sensory evaluation methods and their applications. Food analysis: Moisture, pH, acidity, Total soluble solids by refractometer.
- Evaluation of Food labels
-

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-III
ENG-301 ENGLISH
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 30 , Credit :2)

Objectives

To familiarize students with different genres of writings.

To develop among students the comprehensive understanding of comprehension passages.

To develop among students the skill of writing short notes which are informative in nature.

To develop vocabulary which is used to describe a feature of a person or thing.

To develop understanding of function of tenses in paragraphs.

To develop official written communication skills needed by students and young scholars.

To develop academic skills of comprehending texts and lectures/presentations.

Unit 1: Comprehension and Vocabulary (50%: 10 Hours)

The Lucheon by W. Somerset Maughm

Vanar Jatakam by T. Vijayendra

The Fast by M.K. Gandhi

Comprehension:

Short questions

Short notes

Fill in the blanks

Antonyms/Synonyms (Based on the Comprehension texts)

One Word Substitutes

NB: 1. Short questions as well as short notes should be informative in nature. 2. Teacher should provide a list of One Word Substitutes for the students.

Unit 2: Grammar (20%; 7 Hours)

Future Conditionals

Adjectives (Detailed Study)

Adverbs (Detailed Study)

Prepositions

Unit 3: Writing Skills (30%; 4 Hours)

Leaving Short Messages (On Paper)

Composing SMS on Cell Phone

Formal Letter Writing (Asking for Leave, Scholarship, Complaint)

Formal Emails (Asking for Leave, Scholarship, Complaint)

Unit 4: Academic Skills (20%; 3 Hours)

Note-taking

Note-making

Summarizing

List of Reference Books:

Achar, Deeptha et al. Eds. *English for Academic Purposes Book – 1*. Gandhinagar: University Granthnirman Board, 2011.

Achar, Deeptha et al. Eds. *English for Academic Purposes Book – 1*. Hyderabad: Orient BlackSwan, 2012.

Achar, Deeptha et al. Eds. *English for Academic Purposes Book – 2*. Gandhinagar: University Granthnirman Board, 2011.

Achar, Deeptha et al. Eds. *English for Academic Purposes Book – 2*. Hyderabad: Orient BlackSwan, 2013.

Gandhi, M. K. Gandhi. *An Autobiography Or The Story of My Experiments with Truth.* Ahmedabad: Navjivan, 2011.

Tickoo, M. L. et al. Eds. *I Am The People: English Reader.* Delhi: CBSE, 1996.

Vijayendra, T. *An Intelligent Bird's Guide to the Birdwatcher and Other Stories.* Udupi: Sangatya, 2014.

Wren, P. C. and H. Martin. *High School English Grammar and Composition*. (Gujarati). Trans. Dr. Usha Upadhyay and Jegeesha Upadhyay. New Delhi: S. Chand, 2013.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-IV
FPT-401 FATS AND OIL PROCESSING TECHNOLOGY
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :3)

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
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.
Unit 3. Fat Characterization
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:

Manay, N.S, Shadaksharaswamy, M., Foods- Facts and Principles, New Age International Publishers, New Delhi, 2004.

Meyer, L H-Food Chemistry. CBS publishers & distributors, New Delhi. 2002

Potter, N. N, Hotchkiss, J. H. Food Science. CBS Publishers, New Delhi. 2000.

Nielsen, S.S. Introduction to the chemical analysis of foods. Jones and Bartlett Publishers, Boston, London. 2003

Lawson, G. L, Food oils and fats

Fereidoon Shahidi, Functional properties of proteins and lipids

Clyde, E. Stauffer, Fats and oils

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-IV
FPT-401 FATS AND OIL PROCESSING TECHNOLOGY(Practical)
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :1.5)

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.

- Processing of Oil
- Packaging Techniques
- Storage Techniques
- Visit of Various related institutes.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-IV
FPT-402 CEREALS AND PULSES TECHNOLOGY
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :3)

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,

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.

Unit 2. Wheat, Millets

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-3. 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:

David Dendy A.V, etal; Cereals and Cereal Products: Technology and Chemistry, - 2000

Manay, N.S, Shadaksharaswamy, M., Foods- Facts and Principles, New Age International Publishers, New Delhi, 2004.

Potter, N.N. and Hotchkiss J. H. Food Science. CBS publishers and distributors. 1996.

Srilakshmi, B. Food Science. New Age International Publishers, New Delhi, 2003.

Subalakshmi, G and Udipi, S.A. Food processing and preservation. New Age International Publishers, New Delhi, 2001.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-IV
FPT-402 CEREALS AND PULSES TECHNOLOGY (Practical)
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :1.5)

Objectives

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

- Nutritaive value with added of Swaminathan
- Breackfast
- Cereals
- Continjous Cooking
- Extrasion
- Related products with syllabus.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-IV
FPT-403 ORGANIC FOOD
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :3)

Objectives

To Learn organic Processing
To know the importance of organic processing
To be innovative in exploring various conventionel products.

Unit 1. Organic farmic

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

Unit 2. Conventional Farming

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

Unit 3. Certfication 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/

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-IV
FPT-403 ORGANIC FOOD (Practical)
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit :1.5)

Objectives

To Learn organic Processing
To know the importance of organic processing
To be innovative in exploring various conventionel products.

- Vermi Technology
- Vermi Craftwise
- List of Organic Products
- Pesticides

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-IV
FPT-404 DAIRY TECHNOLOGY
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit: 3)

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:

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.

Unit 3. Cheese, Ice cream and condensed milk

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:

Godbole, N.N; Milk – The Most Perfect Food ; Biotechnology books, 2007

Manay, N.S, Shadaksharaswamy, M., Foods- Facts and Principles, New Age International Publishers, New Delhi, 2004.

Potter, N. N, Hotchkiss, J. H. Food Science. CBS Publishers, New Delhi. 2000.

Spreer E and Mixa, A; Milk and Dairy Product Technology; Marcel Dekker, 2005

Srilakshmi, B. Food Science (3rd edition), New Age International (P) Limited Publishers, New Delhi, 2003.

Sukumar De; Outlines of dairy technology; Oxford University Press; 2001

Walstra A, Geurts T.J and Noomen, A; Dairy Technology – Principles of milk and Properties and Processes; Marcel Dekker, 2005.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-IV
FPT-404 DAIRY TECHNOLOGY (Practical)
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit: 1.5)

Objectives

To analyze the chemical constituents of milk as an agricultural commodity

To be innovative in exploring various traditional and nontraditional milk products

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**

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-IV

DSE-401 Basic Biochemistry

Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit: 3)

Objectives

To Enable the students
To understand the Basic biochemistry
To study importance of carbohydrates

Unit 1: Carbohydrate metabolism

Regulation of enzymes, Allosteric, covalent modification and gene expression, Carbohydrate Structures, Citric acid Cycle and ATP synthesis, Glucolysis and oxidation of pyruvate, Glyconeogenesis, Gluconeogenesis and the control of blood glucose.

Unit 2: Lipid Metabolism

Fatty acids, 13- oxidation of fatty acids, ketogenesis and ketosis

Text books

Harper's Illustrated Biochemistry 28th Ed. McGrawHill
Lehninger A,.L. Nelson D. L. and Cox M.M.(2009) Principals of Biochemistry, CBS publishers and Distributers.
Pushpa Sundararaj and Anupa Siddhu. Qualitative tests and Quantitative procedures in Biochemistry, A H Wheeler and Co Ltd. 2002 , New Delhi

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-IV

DSE-401 Basic Biochemistry (Practical)

Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit: 1.5)

Objectives

To Enable the students
To understand the Basic biochemistry
To study importance of carbohydrates

Carbohydrates:

- Qualitative tests for mono, di and polysaccharides and their identification in unknown mixtures
- Quantitative estimation of glucose, sucrose and lactose by titrimetric methods.

\

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-IV
ENGLISH 401
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 30 , Credit: 2)

Objectives:

To develop the analytical skill while comprehending texts.

To develop scientific vocabulary generally used at the undergraduate levels.

To familiarize the students with grammatical category generally used in scientific writing.

To develop the scientific writing skills.

To familiarize students with different kinds of reading strategies based on the reading needs.

Unit 1: Comprehension and Vocabulary (40%; 10 Hours)

A Letter to Indira on her Birthday by Jawaharlal Nehru

It Takes a Thief by Arthur Miller

Exercises:

Short questions

Short descriptive questions

Antonyms/Synonyms (Based on the text)

Use of Scientific Vocabulary and Phrases

NB: 1. The questions asked will be of informative kind as well as analytical kind where a student has to think through the question keeping in mind the context of the text. 2. Scientific vocabulary and phrases should be taken from what students are using in other papers.

Unit 2: Grammar (10%; 4 Hours)

1. Passive Voice

Unit 3: Writing Skills (30%; 6 Hours)

Reporting Events

Describing the Process

Describing Charts/Pie-charts/Tables

NB: These writing skills should be done keeping in mind grammatical categories of tenses, prepositions, passive voice as well as linking words. .

Unit 4: Academic Skills: Reading Skills (20%; 3 Hours)

Extensive Reading

Intensive Reading

Skimming

Scanning

SQ3R

NB: Each of the reading techniques is to be demonstrated by relevant reading material made available to the students beforehand.

List of Reference Books:

Nagraj, Dr. Geetha. *Comprehend and Compose.* New Delhi: Foundation Books, 2003.

National Open School. *English: Senior Secondary Course.* Despatch 8. New Delhi: National Open School, 1995.

National Open School. *English: Senior Secondary Course.* Despatch 9. New Delhi: National Open School, 1995.

Rizvi, M. Ashraf. *Effective Technical Communication.* New Delhi: Tata McGraw Hill Publishing Company Limited, 2005.

Wren, P. C. and H. Martin. *High School English Grammar and Composition*. (Gujarati). Trans. Dr. Usha Upadhyay and Jegeesha Upadhyay. New Delhi: S. Chand, 2013.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-V
FPT-501 FRUIT AND VEGETABLE PROCESSING TECHNOLOGY
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit: 3)

Objectives

To acquire knowledge about the selection of fruits for processing and value addition

To introduce the latest technologies , manufacturing processes and tools for effective control of safety and quality during processing

Unit-1. Introduction, Processing of juice, jam and jelly

Ripening and quality of fruits, harvesting and transportation, cold storage of fruits, selection and preparation of fruits for processing, deskinning, enzyme inactivation, packing and processing. Various fruit products- frozen whole fruits, slices, cubes, canned fruits, dehydrated fruits, fruit preserves, candied fruits. Fruit juice manufacture, Canning of fruit juices, freezing of fruit pulps. Asceptic processing of fruit juices. Packaging of asceptically processed juices and pulps. Concentrated fruit juices. Manufacture of jams. Theory of jelly formation, ingredients. Machinery. Jellies, marmalades, squashes, cordials, syrups, specifications.

Unit-2. Processing of tomato, apple and orange, Pineapple and Mango

Tomato juice, canned whole tomatoes, tomato ketchup, tomato jams, tomato puree, tomato powder. Apple and apple product- Clarified apple juice, aseptically packed apple puree, apple cider, orange products- orange juice, concentrated orange juice, orange squash, orange jams. Pineapple products- juice, jam, canning Mango and mango products- raw unripe mango products: brined mango slices, dried green mango slices and powder (Amchur), canned mango slices in syrup, canned or frozen mango pulp, mango juice or mango nectar, mango jam, mango squash, mango juice powder, mango freeze dried products, mango syrup.

Unit 3: Processing of vegetables

Processing of okra (ladies finger), potatoes, onions, carrots, green peas, procuring, transportation, storage, processing, packaging and ware housing.

Text books:

Siddappa and Bhatia, Fruits and Vegetable Processing Technology
Lea, R. A. W, Fruit juice processing and packaging
Hui, Y. H. Processing of fruits
Cash J. N. Processing of vegetables
Jongen, W. Fruit and vegetable processing

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-V
FPT-501 FRUIT AND VEGETABLE PROCESSING TECHNOLOGY- Practical
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit: 1.5)

Objectives:

To be innovative in exploring various processed and value added from agricultural Commodities

1. Dehydration of carrot.
2. Processing of mango squash and mango pickle.
3. Processing of pineapple jam.
4. Manufacture of tomato puree.
5. Manufacture of lemon pickle and lemon juice.
6. Manufacture of tomato ketchup and tomato sauce.
7. Manufacture of tutifruity.

GUJARAT VIDYAPITH – AHMEDABAD

Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar

Department of Home Science

B.Voc. (Food Processing Technology) SEMESTER-V

FPT-502- FOOD PACKAGING

Revised Course Structure - (In force from June 2018)

(External Evaluation 60% + Internal Evaluation :40%)

(Total Teaching hours= 45 , Credit: 3)

Objectives

To be familiar with different methods and materials used for packaging.

To understand the technology behind packaging.

Unit-1. Introduction to food packaging, Laws & Specifications

Definition, functions and requirements for effective packaging, packaging criteria, Classification of packaging- Primary, secondary and tertiary packaging, Flexible, rigid and Semi- rigid packaging.

Quality testing of packaging materials

Paper & paper boards-thickness, bursting strength, grammage, puncture resistance, Cobbs test, tearing resistance.

Flexible packaging materials (plastics)-yield, density, tensile strength, elongation, impact resistance, WVTR, GTR, Overall Migration Rate, seal strength.

Transportation hazards and testing.

Oxygen interactions, moisture interchanges and aroma permeability.

Unit 2. Materials for food packaging

Paper, Glass, Tin, Aluminium: TFS, Polymer coated tin free steel cans, cellophane, plastics-LDPE, HDPE, LLDPE, HMHDPE, Polypropylene, polystyrene, polyamide, polyester, polyvinyl chloride.

Unit-3. Different forms of food containers, Modern concepts of packaging technology

Boxes, jars, cans, bottle. Interaction of packages with foods-Global migration of plastics, packaging requirements for various products- fish, meat, spices, vegetables & fruits, canned foods, dehydrated foods. Aseptic packaging, Form–Fill–Seal packaging, Edible Films, Retort pouch packaging, Easy-Open–End, Boil–In-Bags, Closures, tetra-pack, vacuum-packaging, MAP & CAP, Hyper baric storage, insect resistant packaging, intelligent packaging.

Text books:

Cruess, W.V. Commercial Fruit & Vegetable Products. Allied Scientific Publishers, New Delhi. 2003

Davis, E.G. Evaluation of tin & plastic containers for foods. CBS Publishers, New Delhi. 2004

Gopal T.K.S. Seafood packaging, CIFT, Matsyapuri Cochin,2007

Potter, N. N, Hotchkiss, J. H. Food Science. CBS Publishers, New Delhi. 2000.

Sacharow, S., Griffin, R.C. Food Packaging. AVI Publishing Company, West Port, Connecticut. 2000

Srilakshmi, B. Food Science. New Age International Publishers, New Delhi, 2003

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-V

FPT-502- FOOD PACKAGING (Practical)

Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit: 1.5)

Objectives

To be familiar with different methods and materials used for packaging.

To understand the technology behind packaging.

- Food Technology Asepitic Packaging
- Quality Testing of Packaging Material
- Visit of Various Packing Industry

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-V

FPT-503- FOOD SAFETY

Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit: 3)

Objectives

To know about scope and mile stone of food safety.

Unit-1 :

Introduction to Microbiology: meaning, scope and milestone of microbiology: classification of micro-organisms- their taxonomy and nomenclature, kingdom, morphology, growth and growth rate; methods in microbiology cultivation, isolation, purification and preservation of micro organisms; types of micro-scopes and their use; microbes as friends and foes-its destruction through sterilization and disinfection; bacteria and other micro-organisms;

Unit-2 :

Food and water borne infections- bacterial, typhoid and para-typhoid fevers, cholera, shigellosis, food poisoning, poliomyetitis, giardiasis, intestinal helminthes; diseases transmitted through animal bites- Malaria, Filaria, Cat bite and rate bite fever, plague, Rabies, diseases through ARBO viruses; contact diseases

Text books:

Manay, N.S, Shadaksharaswamy, M., Foods- Facts and Principles, New Age International Publishers, New Delhi, 2004.

Meyer, L H-Food Chemistry. CBS publishers & distributors, New Delhi. 2002

Potter, N. N, Hotchkiss, J. H. Food Science. CBS Publishers, New Delhi. 2000.

Nielsen, S.S. Introduction to the chemical analysis of foods. Jones and Bartlett Publishers, Boston, London. 2003

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-V

FPT-503- FOOD SAFETY (Practical)

Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit: 1.5)

Objectives

To know about scope and mile stone of microbiology.

Microbiology laboratory instruments and their uses; practice of disinfection and sterilization methods; use of various microscopes and observation of various microorganisms; staining bacteria-simple staining method, differential staining method, negative staining method, special staining; isolation and identification of microorganisms.

Study of effect of ultra violet rays, PH, temperature, dyes, chemicals etc. on the growth of mirco-organism; antimicrobial effect of antibiotics-agar ditch method, agar cup method, paper disc method.

Examination of microorganisms in air, water, moldy bread, milk sewage; culture media;
Examination of pathogenic. Micro organics; hanging drop preparation; bacterial cultivation preparation and sterilization of media, nutrient agar, inoculation, incubation.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-V

FPT-504- FOOD ANALYSIS

Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit: 3)

Objectives

To know about scope and mile stone of microbiology.

Unit-1 :

Introduction to Microbiology: meaning, scope and milestone of microbiology: classification of micro-organisms- their taxonomy and nomenclature, kingdom, morphology, growth and growth rate; methods in microbiology cultivation, isolation, purification and preservation of micro organisms; types of micro-scopes and their use; microbes as friends and foes-its destruction through sterilization and disinfection; bacteria and other micro-organisms.

Unit-2 :

Food and water borne infections- bacterial, typhoid and para-typhoid fevers, cholera, shigellosis, food poisoning, poliomyetitis, giardiasis, intestinal helminthes; diseases transmitted through animal bites-Malaria, Filaria, Cat bite and rate bite fever, plague, Rabies, diseases through ARBO viruses; contact diseases

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-V
FPT-504- FOOD ANALYSIS (Practical)
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit: 1.5)

Objectives

To know about scope and mile stone of microbiology.

Microbiology laboratory instruments and their uses; practice of disinfection and sterilization methods; use of various microscopes and observation of variou8s micro-organisms; staining bacteria-simple staining method, differential staining method, negative staining method, special staining; isolation and identification of microorganisms;

Study of effect of ultra violet rays, PH, temperature, dyes, chemicals etc. on the growth of micro-organism: antimicrobial effect of antibiotics-agar ditch method, agar cup method, paper disc method;
Examination of microorganisms in air, water, moldy bread, milk sewage; culture media;
examination of pathogenic. micro organics; hanging drop preparation; bacterial cultivation-preparation and sterilization of media, nutrient agar, inoculation, incubation.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-V

DSE 501- Food Biochemistry

Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit: 3)

Objectives

Unit 1: Mechanism of enzyme action

Introduction to enzymes, Coenzymes, Regulation of enzymatic activity, enzyme kinetics, inhibition effects of pH, allosteric enzymes

Unit 2: Metabolism of proteins

Breakdown of proteins, transamination, deamination, decarboxylation, nitrogen fixation, Urea Cycle

Unit 3: Nucleic acid

Definition and composition of RNA and DNA, Structure of various components, viz. bases and sugars, hydrolysis of nucleic acid, structure of RNA and double helical structure of DNA

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-V
DSE 501- Food Biochemistry (Practical)
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45 , Credit: 1.5)

- Safety in biochemistry Laboratory
- To find specific activity of softening and sugar related enzymes from fruits
- Estimation of protein by lowery method
- Estimation of amino acid using biuret method

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-V
ENGLISH-501
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 30 , Credit: 2)

Objectives:

To appreciate literary writing and understand components of literary writings.

To develop skills of finding meaning from the context.

To develop the skill of oral presentation in formal setting.

To develop the skill of group discussion.

To develop the skill of different kinds of written business communications.

To develop the skill of writing project proposals.

To develop develop academic skills.

Unit 1: Comprehension and Vocabulary (30%: 09 Hours)

Sparrow by K. A. Abbas

The Model millionaire by Oscar Wilde

The Last Leaf by O. Henry

Exercises:

Short questions

Short notes

Antonyms/Synonyms

Guessing meaning from the context (Inferences)

Unit 2: Speaking Skills (20%: 06 Hours)

Delivering a Presentation

Group Discussion

Unit 3: Writing Skills (40%: 12 Hours)

Drafting Invitations – Formal and Informal

Preparing Travel Itinerary

Preparing Print Advertisements / Handbills

Designing a Brochure

Writing Project Reports

Unit 5: Academic Skills (10%; 03 Hours)

Preparing Bibliography

Rules of Citation

Concept of Plagiarism

List of Reference Books:

Rizvi, M. Ashraf. *Effective Technical Communication.* New Delhi: Tata McGraw Hill Publishing Company Limited, 2005.

Tickoo, M. L. et al. Eds. *Stories, Plays and Tales of Adventure.* New Delhi: NCERT, 1996.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-VI
FPT-601 FUNCTIONAL FOODS AND NEUTRACEUTICALS
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45, Credit: 3)

Objectives

To enable the students
To understand the basics of nutraceuticals and functional foods.
To study the significance of nutraceuticals and their role in disease prevention.
To identify new strategies for marketing of traditionally known nutraceuticals.

Unit-1. Nutraceuticals: Historical, Teleological Aspects and Classification,

Introduction – Historical Reviews - Teleology of nutraceuticals -Organization models for nutraceuticals – Classification of Nutraceuticals based on the sources–Animal, Plant and Microbial – Nutraceuticals in specific foods - Mechanism of Action -Chemical nature.

Unit 2. Flavonoids and Carotenoids as Antioxidants

General background on phytochemicals as antioxidants – Flavonoids and Lipoprotein oxidation – Evidence for specific Antioxidant mechanisms of Flavonoids – Anticancer and Cholesterol-lowering effect of citrus flavoniods – Dietary carotenoid and carotenoid absorption – Approaches to measurement of absorption – Metabolism of Carotenoids – Carotenoids as anticancer agents.

Unit-3. Omega – 3 Fatty Acids and CLA , Lycopene, Garlic, Olive Oil, Nuts, Probiotics and Prebiotics, Herbs as Functional Foods, Stability Testing and Marketing Issues for Nutraceuticals and Functional Foods

Introduction to Lipoprotein metabolism - PUFA and Cardiac Arrhythmias - Preventative role of n-3 fatty acids in cardiac arrhythmias – Mechanism, of action on n-3 PUFA's - ω – 3 fish oils and their role in Glycemic control- ω – 3 fatty acids and rheumatoid arthritis - Chemistry and Nomenclature of CLA – Analysis of CLA in food and biological samples – CLA in food products and biological samples – Biological actions and potential health benefits of CLA – Mechanisms of CLA action – Potential adverse effects of CLA. Lycopene overview – lycopene and disease - Garlic – Chemistry – Implication in Health - Olive oil – CHD – Cancer - Nuts – Nutrient components and Composition - Nut Consumption and CHD epidemiological evidence, Human nutritional studies on nut consumption and serum lipid changes, Mechanism of action- Probiotics- criteria – products on market – probiotic products –Microbiology of the gastrointestinal tract - Prebiotics – future for probiotics and Prebiotics.
Herbal medicine – Herbs as ingredients in functional foods – actions of herbal and evidence of efficacy - Kinetic modelling of chemical reactions – Accelerated shelf life testing – Cruciferous vegetables and cancer prevention – Dietary fiber and coronary heart disease - Evolution of marketing environment for Functional foods and nutraceuticals - Regulatory background - Introduction to consumer marketing issues for nutraceuticals - Potential product positioning.

Text books:

Robert E.C Wildman. Handbook of Nutraceuticals and Functional Foods, Ed., Robert E.C. Wildman, CRC Press LLC. ISBN – 0849387345, 2001.
Srilakshmi, B. Food Science (3rd edition), New Age International (P) Limited Publishers, New Delhi, 2003.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-VI
FPT-601 FUNCTIONAL FOODS AND NEUTRACEUTICALS (Practical)
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45, Credit: 1.5)

Objectives

To enable the students
To understand the basics of nutraceuticals and functional foods.
To study the significance of nutraceuticals and their role in disease prevention.
To identify new strategies for marketing of traditionally known nutraceuticals.

- Nutraceuticals Historical Reviews
- Specification of Food
- Omega
- Lycopene, Garlic, Olive Oils Nuts,
- Probiotics and Prebiotics
- Stability Testing

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-VI

FPT-602 TECHNOLOGY OF BEVERAGES

Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45, Credit: 3)

Objectives

To enable the students to get an up to date knowledge about fermented foods and beverages.

Unit-1. Introduction & Classification of Beverages

Introduction and classification of beverages, Mineral water-water source and deionization of mineral water, Water treatment process: Filtration, Adsorption, ion exchange, Chemical oxidation, Biological process, Remineralisation and microbiological treatments, Microbiology of bottled water.

Unit 2. Carbonated Beverages

Carbonated soft drinks- Ingredients and preservatives used in carbonation. Syrup room operation and equipments involved.

Unit-3. Tea & Coffee

Steps involved in processing of tea. Types of tea: Black tea, Green tea and Oolong tea. Manufacture of coffee, Types of coffee: Vaccum coffee, drip coffee, percolator coffee, steeped coffee, espresso coffee, iced coffee and Instant coffee. Decaffeination of coffee and types of decaffeination: Roselius process, Swiss water process, direct and indirect method, triglyceride method, carbondioxide method.

Text books:

Manay, N.S, Shadaksharaswamy, M., Foods- Facts and Principles, New Age International Publishers, New Delhi, 2004.

Nicholas Dege. Technology of Bottled water. Blackwell publishing Ltd, UK.,2011

Potter, N. N, Hotchkiss, J. H. Food Science. CBS Publishers, New Delhi. 2000.

Srilakshmi, B. Food Science. New Age International Publishers, New Delhi, 2003

Varnam A. H and Sutherland P.J., Beverages: Technology, Chemistry and Microbiology, Aspen Publications, 1999

GUJARAT VIDYAPITH – AHMEDABAD

Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar

Department of Home Science

B.Voc. (Food Processing Technology) SEMESTER-VI

FPT-602 TECHNOLOGY OF BEVERAGES (Practical)

Revised Course Structure - (In force from June 2018)

(External Evaluation 60% + Internal Evaluation :40%)

(Total Teaching hours= 45, Credit: 1.5)

Objectives

To enable the students to get an up to date knowledge about fermented foods and beverages.

- Classification of All Type Beverages
- Alcoholic Beverages
- Carbonated Beverages
- Black Tea, Geeen Tea
- Percolator Coffee
- Espresso Coffee
- Iced Coffee
- Instant Coffee

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-VI

FPT-603 DRYING TECHNOLOGY

Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45, Credit: 3)

Objectives

To be familiar with different methods of drying.

To understand the technology behind drying

Unit-1. Introduction, Packing

Food dehydration, dehydration principles, selection of methods based on characteristics of foods to be produced, heat and mass transfer, difference between drying and dehydration. Packaging materials for dried foods, storage, transportation.

Unit-2. Mechanism of drying, Driers used in food industry, Drying curve, constant rate period, falling rate period, dry and wet bulb temperature, factors affecting dehydration, Physical and chemical changes during drying, Effect of food properties on dehydration, cell structure, case hardening, control of changes Drying methods, equipments, sun drying, air convection driers, kiln drier, cabinet drier, tunnel drier, fluidized bed drier, spray drier, drum drier, vacuum drier, freeze drier, advantages and disadvantages of different methods.

Unit 3. Processing of some Dehydrated foods

Processing of milk powder, raisins, osmotic dehydrated foods, intermediate moisture food, dehydrofreezing.

Text books:

Manay, N.S, Shadaksharaswamy, M., Foods- Facts and Principles, New Age International Publishers, New Delhi, 2004.

Potter, N. N, Hotchkiss, J. H. Food Science. CBS Publishers, New Delhi. 2000.

Singh, R.P. Introduction to Food Engineering 3rd edition. Academic Press, London. 2004

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-VI
FPT-603 DRYING TECHNOLOGY (Practical)
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45, Credit: 1.5)

Objectives

- To be familiar with different methods of drying.
- To understand the technology behind drying
- Visit of Dairies and Food Industries
- Processing from dehydrade foods

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-VI
FPT-604 SENSORY EVALUATION
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45, Credit: 3)

Objectives

To understand different aspects of sensory science and its application.

Unit-1. Introduction, Testing conditions

Sensory evaluation: Definition & Importance of sensory evaluation; Practical requirements for conducting sensory tests, limitations of sensory evaluation.
General testing conditions - Testing area, testing set up, lighting, testing schedule, Preparation of samples, sample coding, evaluation card preparation.

Unit-2. Sensory assessment, Sensory Tests

Taste—Taste sensation on the tongue, Recognition test for the four basic tastes, Water quality for sample preparations, Standard compounds used for preparing basic tastes, Taste modifiers, Perception of sweet taste. Odour and Smell – Anatomy of nose, Smelling techniques, Vonskramlk, Test, Theories of olfaction Texture—Definition, Classification of textural characteristics, glossary of textural terms, Definition for mechanical properties, Texture measurement Colour vision and appearance measurement-Structure of eye, Visual perception and colour of foods. Flavour and aroma - aroma perception, Definition of flavour, Flavour profile methods, Flavour compounds Temperature sensation, pain sensation, touch sensation, kinesthetic sensations, and sound sensations.

Unit 3. Data analysis

Threshold test, Difference test, Ranking test, Hedonic test, Acceptance and Preference test, scoring test, Sensitivity test Application of sensory analysis in food industry, trained panel members. Importance of data analysis, tests of significance, null hypothesis, mean, median, variance, standard deviation, t-test, chi-square test.

Text books:

Jellinek, G., Sensory Evaluation of Food-Theory and Practice. Elis Horwood Ltd., England, 1985.

Lawless H.T, Sensory Evaluation of Food, Food Science Text series, Springer Science, 2010

Srilakshmi, B., Food Science., New Age International (P) Limited., New Delhi, 2001

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-VI
FPT-604 SENSORY EVALUATION (Practical)
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45, Credit: 1.5)

Objectives

To understand different aspects of various sensory parameters and its application in food quality analysis.

The following tests will be done.

Triangle test

Single sample test

Paired comparison test

Duo- trio test

Hedonic rating test

Numerical scoring test

Ranking test

Overall acceptability

Flavor profile

Descriptive test

GUJARAT VIDYAPITH – AHMEDABAD

Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-VI
DSE 601 NUTRITION HEALTH COMMUNICATION
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45, Credit: 3)

Objectives

To understand different aspects of sensory science and its application.

Unit 1: Concepts and Theories of Communication in Nutrition - Health , The Components and Processes of NHC

Definitions of concepts

• Formal - non-formal communication, Participatory communication • Theories of NHC

• History, need and relevance of NHC in India

• Concept of Behavior Change Communication (BCC) from imparting information to focusing on changing practices.

• Components of BCC: Sender, Message, Channel, Receiver

• Various types of communication - interpersonal, mass media, visual, verbal! non-verbal. • Features of successful BCC

• Market Research and Social Marketing

Unit 2: Programs and Experiences of NHC global and Indian perspective • Nutrition - Health - Communication in Government Programs and NGOs

NHC in developed and developing nations: some examples

• Evolution of NHC in India: traditional folk media to modern methods of communication.

• Traditional folk media in Gujarat and its influence on NHC.

• Communication for urban and rural environment; for target specific audience.

Unit 3

Evolution of NHC/ IEC in Government nutrition health programs - shift in focus from knowledge gain to change in practices.

• Overview of NHC/IEC in government programs (Activities, strengths and limitations) -

NHC in ICDS

Nutritional counseling in micronutrient deficiency control programs: control of IDA, IDD, VAD.

• Strengths and limitations of NHC imparted in NGO programs

Text Book :

• Field guide to designing communication strategy, WHO publication-2007.

• Behaviour change consortium summary(1999-2003) wwwl.od.nih.gov.behaviourchange • Communication strategy to conserve/improve Public Health., John Hopkins University-
Centre for Communication programmes.

• Michael Favin and Marcia Griffiths 1999, Nutrition tool kit-09-Communication for Behaviour change in Nutrition projects. Human Development Network-The World Bank-1999

• Harvard Institute of International Development (198 1) Nutrition Education in Developing Countries, New York: Oelgeschlager Gunn and Hain Publishers Inc.

• Hubley J (1993) Communicating Health. London: Teaching Aids at Low Cost,London, UK.

• Academy for Educational Development (1988). Communication for Child Survival,

AED,USA.
• Facts for Life (1990). A Communication Challenge. UNICEF / WHO / UNESCO / UNFPA, UK.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-VI
DSE 601 NUTRITION HEALTH COMMUNICATION (Practical)
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 45, Credit: 1.5)

Objectives

To understand different aspects of sensory science and its application.

Visit to an ongoing NHC program in ICDS: one rural, one urban. (eg: *matru mandal* meeting or *mahila mandal* meeting or nutrition week celebration.

Visit to a health centre (ANC clinic run by Government health department and observe quality of counseling imparted to pregnant women (especially awareness of anemia, importance of IFA). [All the above will be assessed by the students for the plus and minus points from the NHC perspective].

Visit to Mamta Day (one rural one urban) and observe quality of counseling being given to pregnant and lactating women, mothers of preschool children, use of Mamta card and other aspects.

To visit an NGO either rural or urban and observe one NHC program implemented for women, school children or adolescence (For all the above observation appropriate observation check lists will be made and used)

Improving the NHC-To conduct brief interviews with service providers in all the above programs and to compare the observations, discuss the strength and weakness of the NHC activities carried out.

Based on the above observations and interviews

To design and plan NHC sessions on a specific nutrition topic for any vulnerable group: children, adolescents, women taking into account all components of NHC.

Submit the visual, the script of the session: Hindi / Gujarati, the communication strategy and evaluation plan.

To implement one NHC session in the field and evaluate it as per guidelines provided.

GUJARAT VIDYAPITH – AHMEDABAD
Faculty of Science and Applied Science, Sadra, Dist. Gandhinagar
Department of Home Science
B.Voc. (Food Processing Technology) SEMESTER-VI
ENGLISH 601
Revised Course Structure - (In force from June 2018)
(External Evaluation 60% + Internal Evaluation :40%)
(Total Teaching hours= 30, Credit: 2)

Unit 1: Word Formation (20%; 6 Hours)

Affixes (Prefixes and Suffixes)

Clippings

Abbreviations

Compound Words

Blending

Unit 2: Speaking Skills (40%; 12 Hours)

Conducting Interviews

Appearing for Job Interviews

Telephonic Conversations

Unit 3: Writing Skills (40%; 12 Hours)

Job Application Letter

CV/Resume

Resignation Letter

Notice, Agenda, Minutes

List of Reference Books:

Rizvi, M. Ashraf. *Effective Technical Communication.* New Delhi: Tata McGraw Hill Publishing Company Limited, 2005.

Tickoo, M. L. et al. Eds. *Stories, Plays and Tales of Adventure.* New Delhi: NCERT, 1996.