



DEPARTMENT OF FOOD SCIENCE, NUTRITION AND DIETETICS

B.Sc.Food Science, Nutrition and Dietetics– (Full Time)
Curriculum and Syllabus
2018 Regulation

I SEMESTER

S.No	Sub.Code	Title of Subject	L	T	P	C
1	HBEN18F01	Technical English - I	2	0	0	2
2	HBEN18FL1	Communicative English Practical -1	0	0	2	1
3	HBFS18001	Food Science- I	4	0	0	4
4	HBFS18002	Principles of Nutrition	4	1	0	5
5	HBFS18003	Food Microbiology	4	1	0	5
6	HBFS18L01	Basic Bakery Science Practical	0	0	3	1
7	HBFS18L02	Food Science- I Practical	0	0	4	2
8	HBMG18FL1	Personality Development Practical I	0	0	3	1
TOTAL			14	2	12	21

II SEMESTER

S.No	Sub.Code	Title of Subject	L	T	P	C
1	HBEN18F02	Technical English - II	3	0	0	3
2	HBFS18004	Food Science - II	4	1	0	5
3	HBFS18005	Human Physiology	4	1	0	5
4	HBFS18006	Nutritional Biochemistry	4	1	0	5
5	HBEN18FL2	Communicative English Practical - II	0	0	2	1
6	HBFR18FL1	Communicative French Practical I	0	0	2	1
7	HBFS18L03	Human Physiology Practical	0	0	2	1
8	HBMG18FL2	Personality Development Practical II	0	0	3	1
TOTAL			15	3	9	22

III SEMESTER

S.No	Sub.Code	Title of Subject	L	T	P	C
1	HBFS18007	Diet in Health	4	1	0	5
2	HBFS18008	Food Service Management	4	1	0	5
3	HBFS18009	Food Preservation	4	1	0	5
4	HBFS18L04	Diet in Health Practical	0	0	4	2
5	HBFR18FL2	Communicative French Practical II	0	0	4	2
6	HBFS18L05	Internship (Food Industry)	0	1	3	2
TOTAL			12	4	11	21



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IV SEMESTER

S.No	Sub.Code	Title of Subject	L	T	P	C
1	HBFS18010	Therapeutic Nutrition	4	1	0	5
2	HBFS18011	Food Safety and Quality Control	4	1	0	5
3	HBFS18012	Nutritional Assessment and Surveillance	3	1	0	4
4	HBFS18013	Human Development	3	1	0	4
5	HBFS18L06	Therapeutic Nutrition Practical	0	0	4	2
6	HBFS18L07	Fundamentals of Computer Practical	0	0	4	2
TOTAL			14	4	8	22

V SEMESTER

S.No	Sub.Code	Title of Subject	L	T	P	C
1	HBFS18014	Sports Nutrition	4	1	0	5
2	HBFS18015	Research Methods	4	1	0	5
3	HBFS18016	Food Adulteration	3	1	0	4
4	HBFS18017	Preventive Nutrition	4	1	0	5
5	HBFS18L08	Internship (Health Sector)	0	0	0	3
TOTAL			15	4	0	22

VI SEMESTER

S.No	Sub.Code	Title of Subject	L	T	P	C
1	HBFS18018	Community Nutrition	4	1	0	5
2	HBFS18019	Food Fortification	3	1	0	4
3	HBFS18L09	Community Nutrition Practical	0	1	4	3
4	HBFS18P01	Project / Dissertation	0	0	0	10
TOTAL			7	3	4	22

CREDIT SUMMARY

SEMESTER - I	21
SEMESTER - II	22
SEMESTER - III	21
SEMESTER - IV	22
SEMESTER - V	22
SEMESTER - VI	22
Total	130



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L	T	P	C
2	0	0	2

SEMESTER I

TECHNICAL ENGLISH – I

Sub Code: HBEN18F01

Total no. of Hours: 50

COURSE OBJECTIVES

1. Equipping the students for effective interaction with people in all situations both academic and professional
2. Preparing them for placement interviews
3. Strengthening the vocabulary for use in both technical and business situations.

Unit – I

10 Hours

Vocabulary (meanings, synonyms, antonyms) – affixes (prefixes and suffixes) – word formation – nominal compounds, expanding using numbers and approximation – verbs (tenses, auxiliaries, modals) – concord – voice, impersonal passive voice – infinitives, gerunds – questions yes/no, tag)

Unit – II

10 Hours

Prepositions, prepositional phrases, preposition relative pronouns – phrasal verbs and idioms – adjectives, degree of comparison – connectives – ‘if’ clauses – cause and effect – imperatives and requests – letter writing, formal, seeking permission to undergo practical training ,letter to the editor, job application, calling for quotation ,placing orders and complaints.

Unit – III

10 Hours

LISTENING

Speech sounds, pronunciation, word stress, role play-buying and selling a product – making arrangements for a meeting – listening to monologues and short conversation based on a variety of sources including interviews, listening to people, listening to instructions, listening to longer texts to gather clues and prompts relating to purpose.



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Unit – IV

10 Hours

SPEAKING

Conducting and participating in meetings, comparing, welcome speech, vote of thanks, sums up the speech – greeting friends and strangers, situational conversations, asking for and giving information, agreeing and disagreeing.

Unit – V

10 Hours

READING AND WRITING

Reading articles from magazines and newspapers – extracting relevant information from the texts by skimming and scanning for specific information – Instruction, Recommendation – Comprehension – Précis – Interpretation tables & Flow charts

Text Books, Reference Books and Web Resources

- Mc Carthy, Michael et.al –English vocabulary in use-advanced-Cambridge University press
- Hancock, Mark English Pronunciation in use –Cambridge University Press, 2011
- Dutt P. Kiranmani Basic Communication skills, 2008
- BEC Preliminary, Cambridge University Press, Newyork, 2002
- Comfort Jeremy, et.al.-‘speaking effectively: Developing speaking skills for Business English.’ Cambridge University Press, Cambridge 1984
- Mohan, Krishna and Meera Bannerji’ Developing Communication skills, ‘Macmillan India Ltd., Chennai, 2001
- Richards, Jack’s ‘New Interchange English for International Communication, Foundation Books Put, Ltd., New Delhi, 2006.



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COMMUNICATIVE ENGLISH PRACTICAL – I

Sub Code: HBEN18FL1

L	T	P	C
0	0	2	1

Total no. of Hours: 50

The Language Practical I focus on the production and practice of sounds of language and familiarizes the students with the use of English in everyday situations and contexts.

COURSE OBJECTIVES

1. To make students recognize the sounds of English through Practice and Computer Software.
2. To help them overcome their inhibitions and self-consciousness while speaking in English and to build their confidence. The focus shall be on fluency and accuracy.
3. To enable them to speak English correctly with focus on stress and intonation.

Unit – I

1. Introduction to the Sounds of English- Vowels, Diphthongs & Consonants.
2. Introduction to Stress and Intonation.
3. Situational Dialogues / Role Play

Unit – II

1. Oral Presentations- Prepared and Extempore.
2. 'Just A Minute' Sessions (JAM).
3. Describing Objects / Situations / People.

Unit – III

1. Information Transfer
2. Debate
3. Telephoning Skills.
4. Giving Directions.
- 5.

Unit – IV

1. Anecdotes
2. Practice in welcome speech,
3. Role play activities using different speech functions



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Text Books, Reference Books and Web Resources

1. Spoken English (CIEFL) in 3 volumes with 6 cassettes, OUP.
2. English Pronouncing Dictionary Daniel Jones Current Edition with CD.
3. Spoken English- R. K. Bansal and J. B. Harrison, Orient Longman 2006 Edn.
4. A Practical course in English Pronunciation, (with two Audio cassettes) by J. Sethi, Kamlesh Sadanand & D.V. Jindal,
5. Prentice-Hall of India Pvt. Ltd., New Delhi.
6. A text book of English Phonetics for Indian Students by T.Balasubramanian (Macmillan)
7. English Skills for Technical Students, WBSCTE with British Council, OL

MARKING SCHEME FOR PRACTICAL EXAMINATION

Duration	03:00hrs
1. Uniform & Grooming	10
2. Courtesy & Manners	10
3. Speech and Communication	20
4. Technical Knowledge	30
5. Practical Situation Handling	20
6. Journal	10

	100 Marks

Note:

1. Speech Communication Courtesy and Manners should be observed throughout.
2. 50 technical questions to prepared in advance, covering the entire syllabus.
3. Practical situations – at least 10 situations be made representing all aspects of the syllabus.



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FOOD SCIENCE – I

Sub Code: HBFS18001

L	T	P	C
4	0	0	4

Total no. of Hours: 50

COURSE OBJECTIVES

1. Understand the scientific principles underlying food preparation
2. Develop skill and techniques in food preparation with conservation of nutrients and palatability using desirable cooking methods

UNIT – I: Cooking Methods and Food Groups

10 hours

Definition – Classification of foods, functions, need for grouping foods, application of food groups in planning adequate diets.

Cooking- objectives, Preliminary preparations, Different methods of cooking – Moist heat, dry heat– definition, merits and demerits of different methods of cooking. Microwave cooking – merits and demerits, recent methods of cooking – Ohmic Cooking, induction cooking.

UNIT – II: Cereals and Cereal Products

10 hours

Structure, Composition and nutritive value. Processing of cereals and cereals products Changes in nutritive value during cooking . Processing changes during storage of cereals and cereal products. Cereal cookery-cereal protein, cereal starch, effect of moist heat and dry heat on cereals. Fermented products of cereals.

UNIT – III: Pulses and Nuts

10 hours

Structure, Composition and nutritive value. Processing of pulses and nuts. Changes in nutritive value during cooking. Processing changes during storage of Pulses and Nuts. Toxic properties of pulses and nuts. Role of pulses and nuts in cookery



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UNIT – IV: Fruits and Vegetables

10 hours

Classification, Composition and nutritive value. Pigments, Enzymes, Organic acids and flavor compounds of vegetables and fruits, changes in nutritive value of Vegetables during cooking, Preservation of Fruits and Vegetables, changes during storage.

UNIT- V: Fats and Oils:

10 hours

Nutritional Importance, Composition and nutritive value. Changes in nutritive value during cooking. Processing changes during storage of Fats and Oils. Role of fats and oil in cookery

Text Books, Reference Books and Web Resources

- Swaminathan , M . : Hand Book of Food Science, Chemistry and Experimental Food texts
- Brown.A. Understanding Food, Wadsworth, Thomson Learning Publications, 2000.
- Paul, P.C., and Palmer, H.H., Food Theory and Applications. John Wiley and Sons, Newyork, 2000 Revised Edition.
- Swaminathan, M.1976 : Essentials of Food and Nutrition Vol I and Vol IINorman Potter, N : Food Science



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L	T	P	C
4	1	0	5

PRINCIPLES OF NUTRITION

Sub Code: HBFS18002

Total no. of Hours: 50

Unit – I 10 hours**Introduction** – Definition of the terms Health, Nutrition, Nutrients, Functions of Food to Man (physiological, Psychological and Social Function of food) in maintaining good health, classification of Nutrients and Foods.

Energy – Calorie – definition – energy requirements for various age groups – Concept of BMR, Factors affecting BMR, SDA .Concept of Energy Balance.

Unit – II 10 hours

Carbohydrates – Composition, classification (Mono, di and Polysaccharides) – Functions – Food sources – Significance of dietary fiber (prevention/treatment of disease) Daily requirements, excess and deficiency. Significance of dietary Fiber (Prevention/Treatment of disease) Functions of Dietary Fiber, Sources of Dietary Fibers Artificial Sweeteners.

Unit – III 10 hours

Proteins – Composition, Classification based on Structure, Characterization and function, Classification based on Amino acid composition (EAA, NEAA Complete and Incomplete Protein) Functions, Food sources and daily requirements – excess and deficiency.

Unit – IV 10 hours

Lipids – Composition, Classification – Functions – Food sources Fatty acids (Saturated and Unsaturated Fats) Essential and Non Essential Fatty Acids, PUFA, MUFA– Daily requirements, excess and deficiency, Cholesterol – Dietary Sources Lipids-Invisible & Visible Fats, Antioxidants.



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Water – Importance, water balance, Functions deficiency, ORT, Water- Daily Intake of water/Daily Loss of Body water – Daily Requirement – Dehydration – Oral Rehydration Solution (ORS)

Unit – V 10 hours

Vitamins Definition and Classification (Water & Fat Soluble Vitamins)

Food Sources, Functions, deficiency and significance of

1. Fat soluble Vitamins (Vitamins A, D, E, K.)
2. Water Soluble Vitamins (Vitamin B complex and Vitamin C)

Minerals – Definition and Classification (Major and Minor), Functions, Food sources deficiency and excess of Calcium, Iron, Iodine, Fluorine, sodium excess and deficiency.

Text Books, Reference Books and Web Resources

1. Davidson C.H. Normal and Therapeutic Nutrition Oxford IBH Publishing. Calcutta 1986.
2. N. Swamination – Essentials of Food & Nutrition.
3. Food Science- Sumathi R Mudambi
4. Dr. M. Swaminathan – Hand book of Food and Nutrition



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FOOD MICROBIOLOGY

Sub Code: HBFS18003

L	T	P	C
4	1	0	5

Total no. of Hours: 50

OBJECTIVES:

1. To know the important genera of microorganisms associated with food and their characteristics.
2. To understand the role of microbes in fermentation, spoilage and food borne diseases.

Unit- I

10 hours

Introduction to Food Microbiology- Definition and Scope of food microbiology, Inter-relationship of microbiology with other sciences Characteristics of Microorganisms in Food, Types of microorganisms associated with food, their morphology and structure, Significance of spores in food microbiology

Unit- II

10 hours

Microbial Growth in Food-Bacterial growth curve and microbial growth in food, Factors affecting the growth of micro organisms in food

Microbial Food Spoilage,Sources of Microorganisms in foods, Some important food spoilage microorganisms, Spoilage of specific food groups- Cereal and cereal products Milk and dairy products, Fruits and vegetables, Meat, poultry and sea foods, and Canned products

Unit - III

10 hours

Food Fermentations- Fermentation –definition and types, Microorganisms used in food fermentations, Dairy Fermentations-starter cultures and their types, concept of probiotics, Fermented Foods-types, methods of manufacture for vinegar, sauerkraut, tempeh, miso, soya sauce, beer, wine and traditional Indian foods



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Unit- IV

10 hours

Foodborne Diseases Types – foodborne infections, foodborne intoxications and toxic infections
Common and Recent Examples

Cultivation of Micro-organisms - Pure culture technique Methods of isolation and cultivation
Enumeration of Microorganisms- qualitative and quantitative

Unit- V

10 hours

Control of Microorganisms in Foods Principles and methods of preservation Physical Methods
of Food Preservation- Dehydration, Freezing, Cool Storage, Heat Treatment (esp. thermos
bacteriology), Irradiation, Bio preservatives esp. Bacteriocins Introduction to Hurdle concept and
Non Thermal methods

Trends in Food Microbiology Rapid Methods of Detection Recent Advances

Reference Books:

1. Adams M R and Moss M O, Food Microbiology, New Age International (P) Ltd, New Delhi, 2005.
2. Vijaya Ramesh K, Food Microbiology, MJP Publishers, Chennai, 2007.
3. Curricula on Food Safety, Directorate of General of Health Services, Ministry of Health and Family Welfare, Govt of India, New Delhi, 2003.
4. James M Jay, Modern Food Microbiology, Fourth edition, CBS Publishers and Distributors, New Delhi, 2005.
5. Frazier W, Food Microbiology, Mc Grawhill Co. Ltd, New Delhi, 2005.



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BASIC BAKERY SCIENCE PRACTICAL

Sub Code: HBFS18L01

L	T	P	C
0	0	3	1

Total no. of Hours: 50

Unit – I

Introduction & scope of Bakery & Patisserie - Organisation of Bakery department - Bakery terms - Structure of wheat grain - Milling of wheat and role of bran and germ - Flours: Constituents of flours, water absorption power of flour, gluten, grades of flour - Raw material required for bread making - Role of flour, water, yeast, salt sugar, milk and fats - Types of yeast - Bread making process - Characteristics of good bread - Bread faults and their remedies - Bread improvers and their role - Knowledge of oven and baking temperatures - Bakery layout.

Basic Breads white bread, brown bread, whole wheat bread, French baguette, garlic bread, bread sticks, masala bread, pizza base, raisin bread.

Bread rolls: soft rolls,

Buns: Fruit Buns; Chelsea buns

Rich doughs: Brioche, dough nuts, Danish; pastry; croissants; fruit savarin

Unit – II

Cake making ingredients – Flour, Sugar, Shortening and egg - Moistening agents - Fats and oil - Leavening agents and their role - Cake making methods - Characteristics of goods cakes - Cake faults and their remedies

Cakes & Gateaux: cakes by different methods (e.g., sponge cake; madeira cake; genoise; faultless sponge; rich cake; fruit cake, madeleine cake, cup – cakes) Birthday cake; cheese cakes; black forest; gateaux; apple strudel.

Pastry: pineapple pastry, chocolate pastry



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Unit – III

Principles of pastry making - Types of Pastries, method of preparation and their derivatives - Types of basic icings - Preparation of basic cookies and biscuits - Types of cookies – Uses of cookies – Common faults in cookie preparation - Knowledge of basic desserts.

Biscuits & Cookies: Plain biscuits; piping biscuits; cherry knobs; langue-de-chats; (cats tongue) salted biscuits; nut biscuits; coconut biscuits; melting moment; macaroons; tricolour; chocolate biscuits; marble biscuits; nan-khatai; short bread biscuits. Ginger biscuits; cheese biscuits; cream-fingers

Icing:basic cream icing, butter icing; ganache, Royal icing; meringue; marzipan; glace icing

Unit – IV

Introduction to pastes – Short crust paste preparation – Sweet paste preparation – Choux paste preparation – Puff pastry preparation – Basic faults in puff pastry preparation - history of chocolates – Process of making a chocolate – Types of chocolates – Tempering chocolates – Equipment's used in chocolate making.

Short crust pastry:lemon curd tart; jam tart.

Flaky/Puff pastry:khara biscuits; veg patties; chicken patties; mutton patties; cheese straws; pastry cases; mille feuille gateaux; apple flan; cream horns

Choux pastry:chocolate éclair; profitroll suchard; cream buns

Unit – V

Ice cream and frozen desserts – Equipment's used in frozen desserts

Basic Desserts:ginger pudding; cold lemon soufflé; chocolate mousse; charlottes royale; soufflé praline; fruit truffle, caramel custard, bread pudding

Reference books:

1. Food Production Operations –ParvinderS.Bali



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2. Quantity Food Production Operation - ParvinderS.Bali
3. International Cuisine & Food Production Management –Parvinder S. Bali
4. The Essential Culinary Guide – Chef Soundararajan
5. Theory of Catering – Kinton& Cesarani
6. Practical Professional cookery – H.O. Cracknel & R.J. Kavfmann
7. The Professional Pastry Chef – Bo Freberg
8. Modern Cookery for Teaching and Trade – Thangam Philip
9. Theory of Cooking – Krishna Arora



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FOOD SCIENCE I PRACTICAL

L	T	P	C
0	0	4	2

Sub Code: HBFS18L02

Total no. of Hours: 50

S. No	Topic	Method
1	I. Equipment's – Identification, Description, Uses & handling II. Hygiene – Kitchen etiquettes, Practices & knife handling III. Safety and security in kitchen	Demonstrations & simple applications by students
2	I. Vegetables – classification II. Cuts – julienne, jardinière, macedoines, brunoise, payssane, mignonnete, dices, cubes, shred, mirepoix	Demonstrations & simple applications by students
3	Identification and Selection of Ingredients – Qualitative and quantitative measures.	Demonstrations & simple applications by students
	I. Basic Cooking methods and pre-preparations	



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4	<p>II. Blanching of Tomatoes and Capsicum</p> <p>III. Preparation of concasse</p> <p>IV. Boiling (potatoes, beans, cauliflower, etc)</p> <p>V. Frying – (deep frying, shallow frying, sautéing) Aubergines, Potatoes, etc.,</p> <p>VI. Braising – Onions, Leeks, Cabbage</p> <p>VII. Starch cooking (Rice, Pasta, Potatoes)</p>	Demonstrations & simple applications by students
5	<p>I. Stocks – Types of stocks (White and Brown stock)</p> <p>II. Fish stock</p> <p>III. Emergency stock</p>	Demonstrations & simple applications by students
6	<p>Sauces – basic mother sauces</p> <ul style="list-style-type: none">• Béchamel• Espagnole• Veloute• Hollandaise• Mayonnaise• Tomato	Demonstrations & simple applications by students
7	<p>Egg cookery – Preparation of variety of egg dishes</p> <ul style="list-style-type: none">• Boiled (Soft & Hard)• Fried (Sunny side up, Single fried, Bull's Eye, Double fried)• Poaches• Scrambled• Omelette (Plain, Stuffed, Spanish)	Demonstrations & simple applications by students



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	<ul style="list-style-type: none">• En cocotte (eggs Benedict)	
8	<p>Simple Salads:</p> <ul style="list-style-type: none">• Cole slaw,• Potato salad,• Beet root salad• Green salad• Fruit salad• Preparation of salad dressings <p>Simple Egg preparations:</p> <ul style="list-style-type: none">• Assorted omelletes• Oeuf Florentine• Oeuf Benedict• Oeuf Farci• Oeuf Portugese• Oeuf Deur Mayonnaise <p>Simple potato preparation</p> <ul style="list-style-type: none">• Baked potatoes• Mashed potatoes• French fries• Roasted potatoes• Boiled potatoes• Lyonnaise potatoes• Allumettes <p>Vegetable preparations</p> <ul style="list-style-type: none">• Boiled vegetables• Glazed vegetables• Fried Vegetables• Stewed vegetables	Demonstrations & simple applications by students



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9	<p>Sauce: Béchamel sauce, Veloute Sauce, Tomato Sauce, Espagnole sauce, Hollandaise sauce and Mayonnaise sauce with two derivatives of each.</p> <p>Compound butters – 03 varieties Mint sauce, Horse radish sauce, Bread sauce and Apple sauce.</p> <p>Gravies: Brown gravy (thick and thin)</p>	Demonstrations & simple applications by students										
10	<p>Soups:</p> <table><tr><td>Purees</td><td>02 varieties</td></tr><tr><td>Cream</td><td>04 varieties</td></tr><tr><td>Consommés</td><td>02 varieties</td></tr><tr><td>Potages</td><td>02 varieties</td></tr></table>	Purees	02 varieties	Cream	04 varieties	Consommés	02 varieties	Potages	02 varieties	Demonstrations & simple applications by students		
Purees	02 varieties											
Cream	04 varieties											
Consommés	02 varieties											
Potages	02 varieties											
11	<p>Fish:</p> <table><tr><td>Baked</td><td>02 varieties</td></tr><tr><td>Grilled</td><td>02 varieties</td></tr><tr><td>Shallow fried</td><td>02 Varieties</td></tr><tr><td>Deep fried</td><td>03 Varieties</td></tr><tr><td>Poached</td><td>02 Varieties</td></tr></table>	Baked	02 varieties	Grilled	02 varieties	Shallow fried	02 Varieties	Deep fried	03 Varieties	Poached	02 Varieties	Demonstrations & simple applications by students
Baked	02 varieties											
Grilled	02 varieties											
Shallow fried	02 Varieties											
Deep fried	03 Varieties											
Poached	02 Varieties											
12	<p>Chicken & Meat :</p> <table><tr><td>Stews</td><td>02 Varieties</td></tr><tr><td>Roasts</td><td>02 Varieties</td></tr><tr><td>Grilled/Fried</td><td>02 Varieties</td></tr><tr><td>Chicken Sautés</td><td>05 Varieties</td></tr></table>	Stews	02 Varieties	Roasts	02 Varieties	Grilled/Fried	02 Varieties	Chicken Sautés	05 Varieties	Demonstrations & simple applications by students		
Stews	02 Varieties											
Roasts	02 Varieties											
Grilled/Fried	02 Varieties											
Chicken Sautés	05 Varieties											



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13	Entrees : 3 varieties <ul style="list-style-type: none">• Vegetables : Preparation and cooking of vegetables in season and their accompaniments – 10 varieties• Potatoes – 10 varieties• Egg , Cheese and Farinaceous dishes – 5 varieties• Omlettes , soft boiled eggs , hard boiled eggs , fried eggs , spaghetti and macaroni dishes – 02 varieties	Demonstrations & simple applications by students
14	Chinese : Soups 02 Varieties Noodle and Rice 04 Varieties Chicken 02 Varieties Meat 02 Varieties Prawns 02 Varieties Fish 01 dish	Demonstrations & simple applications by students
15	INDIAN : Rice 10Varieties Indian Bread 05 Varieties Dal 05 Varieties Vegetable 10 Varieties Chutney 05 Varieties Raita 05 Varieties Fish Dishes 05 Varieties Meat Dishes 05 Varieties Chicken Dishes 04 Varieties	Demonstrations & simple applications by students



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	Tandoori Dishes Tandoori , Fish , Naan, kulcha, tandoori roti ,Sheekh Kabab, Boti Kabab	
16	Breakfast : To include cereals , regional Indian Items like Poori, Bhajji , PooriChhole , Various Parathas , Vada, Idli , Dosa , Sambar, Upma , Uttapam etc.	Demonstrations & simple applications by students
17	Salads : To include basic simple salads and dressings : (i) Cole Slaw (ii)Russian Salad (iii) Potato Salad (iv)Fruit Salad (v)Waldrof Salad	Demonstrations & simple applications by students
18	Desserts :10 Indian Regional Varieties <ul style="list-style-type: none">• Caramel Custard• Bread and Butter Pudding	Demonstrations & simple applications by students



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DEPARTMENT OF FOOD SCIENCE, NUTRITION AND DIETETICS

Reference books:

1. Food Production Operations –ParvinderS.Bali
2. Quantity Food Production Operation - ParvinderS.Bali
3. International Cuisine & Food Production Management –Parvinder S. Bali
4. The Essential Culinary Guide – Chef Soundararajan
5. Theory of Catering – Kinton& Cesarani
6. Practical Professional cookery – H.O. Cracknel & R.J. Kavfmann
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PERSONALITY DEVELOPMENT PRACTICAL – I

Sub Code: HBMG18FL1

L	T	P	C
0	0	3	1

Total no. of Hours: 50

OBJECTIVES:

- Handling Transition from school to college – Necessary adaptation to be done in their attitude and behavior
- Developing Self motivation / self respect, self esteem, Self discipline, Social discipline
- Orientation to developing and maintaining holistic health
- Exposing students to study methodologies and study skills
- Understanding the Value of the course and its realistic prospectus
- Career mapping in the hospitality industry
- Morality development

Unit – I

DEVELOPING SOCIAL DISCIPLINE

The need to respect others, developing empathetic understanding, respecting and demonstrating your thankfulness to your parents / teachers and institutions, Breaking the communication barriers, Seeking support, understanding relationships, developing genuine and trust worthy relationships, handling infatuation, managing risk taking / self destructive behaviors, significance of team work, understanding the social and spiritual values.

Unit – II

SCOPE AND CAREER MAPPING

Prospectus in the hotel, tourism and affiliated industry, prospectus for entrepreneurship, understanding the career map (entry level to zenith), basics of equipping self for a career, opportunities and threats in various ancillaries of hotel industry, value of smart work and consistent efforts.



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Unit – III

DEVELOPING SELF CONFIDENCE SELF MOTIVATION AND SELF ESTEEM

Understanding oneself by introspection, honoring the self, understanding individuality, breaking free from the self imposed barriers, negative belief systems and self-limiting thinking, Methods of self appraisal, identifying a role model, developing passion, planning, goal setting, developing focus, setting deadlines, time management, study skills, learning from mistakes, Developing self acceptance, self control, self responsibility, living authentically and consciously, working towards self actualization. Understanding the primary concepts of holistic health the physical psychological social and spiritual health. Learning the methods of developing and maintaining holistic health.

Unit – IV

Personality definition and a clear understanding, Theories of personality, Personality development, Self concept (SWOT analysis), Developing self respect, self discipline, self confidence and self esteem

Unit – V

Developing emotional intelligence, Problem solving (creative, analytical, lateral thinking, 8Dmodel), Decision making, Crisis intervention and contingency management, Goal setting, systematic planning and execution

Reference Books:

- Human Behavior at work By: Keith Davis
- I'm OK, You're OK by Thomas A Harris
- Pleasure of your company By:-Ranjana Salgaocar
- How to get the Job you want By: Arun Agarwal
- Get that Job ,Rohit Anand & Sanjeev Bikhanchandani,Harper Collins



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MARKING SCHEME FOR PRACTICAL EXAMINATION

Duration	03:00hrs
1. Uniform & Grooming	10
2. Courtesy & Manners	10
3. Speech and Communication	20
4. Technical Knowledge	30
5. Practical Situation Handling	20
6. Journal	10

	100 Marks

Note:

1. Speech Communication Courtesy and Manners should be observed throughout.
2. 50 technical questions to prepared in advance, covering the entire syllabus.

Practical situations – at least 10 situations be made representing all aspects of the syllabus.



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SEMESTER II

TECHNICAL ENGLISH – II

Sub Code: HBEN18F02

L	T	P	C
3	0	0	3

Total no. of Hours: 50

OBJECTIVES:

1. To improve conversational skills among students
2. To develop interpersonal and social skills
3. To equip them to work successfully in global, professional and business situation

Unit – I

10 Hours

Verbal Analogy – cloze – completion of sentences suitably – Word, Phrase, Clause, Sentence – Definition and Usage – homophones – words often confused – collocation – register – (formal and informal) – using ellipses in dialogue – Subject & Predicate.

Unit – II

10 Hours

Sequencing jumbled sentences using linguistic clues (e.g. reference words and linkers) and following semantic clues for prepositional development – one sentence definition and extended definition – description – defining, describing an object/device/instrument/machine using appropriate discourse markers – editing a passage (correcting the mistakes in punctuation, spelling and grammar)

Unit – III

10 Hours

Paragraph writing (with due emphasis on features such as topic sentence and its role, unity, coherence and cohesive devices) – essay writing – newspaper report on accidents, theft and festivals – dialogue writing.



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Unit – IV

10 Hours

Inferential comprehension-predicting the content from the title – skimming the text, understanding the gist, identifying the topic sentence and its role in each paragraph, scanning, inferring/identifying lexical and contextual meaning, reading to identify the main content and answer comprehension questions – note making, understanding the discourse coherence and organization of texts, learning the use of words-comparing and contrasting-classifying the data, analyzing/interpreting the data in bar and pie charts using technical vocabulary

Unit – V

10 Hours

Group Discussions – presentation, different types, sales presentation, project presentation-preparation for meeting, writing agenda and writing minutes – preparing for Interviews, etiquette, Language matching the bodily expression – mock interviews – writing business reports on conferences and meetings.

References Books:

1. McCarthy, Michael et al-English Vocabulary in Use –advanced –Felicity O'Dell, Cambridge University Press, 2011
2. Hancock, Mark, English Pronunciation in use-, Cambridge Univ. Press, 2011
3. Dutt p. Kiranmani et al-Basic Communication skills Cambridge University Press, 2008
4. Wren & Martin, Grammar and composition -, Chand & Co, 2006
5. Bill Mascull. Business Vocabulary in Use' Cambridge University Press, Cambridge, 2002



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FOOD SCIENCE – II

Sub Code: HBFS18004

L	T	P	C
4	1	0	5

Total no. of Hours: 50

OBJECTIVES:

1. Understand the scientific principles underlying food preparation
2. Develop skill and techniques in food preparation with conservation of nutrients and palatability using desirable cooking methods

Unit – I: Sugars:

10 hours

Nutritive Value, Properties, Types, Stages of Sugar Manufacture, Stages of Sugar Cookery, crystallization, Sugar related Products

Unit – II: Milk and Milk Products:

10 hours

Composition and Nutritive Value, effect of heat, acid, phenolic compounds on milk, Types of Milk products

Unit – III: Meat, Fish, Poultry Egg:

10 hours

Structure, Composition and Nutritive Value of Egg, Meat, Fish and Poultry, Selection of Meat, Fish, Poultry Egg – Uses of Eggs in food preparation and storage of Eggs
Factors affecting tenderness of Meat, Cooking of fish and Poultry and storage of Meat, Fish, Poultry



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Unit –IV: Spices and Condiments: 10 hours

Types of spices and Condiments, Functions and Medicinal values of spices and condiments.

Unit –V: Beverages and Appetizers: 10 hours

Classification- Coffee, Tea, Cocoa, Fruit Beverages, Soups, Vegetable Juices, and Milk based Beverages, Malted Beverages, Carbonated and Non- Alcoholic Beverages, Alcoholic Beverages.

Reference Books:

1. Swaminathan , M . : Hand Book of Food Science, Chemistry and Experimental Food texts
2. Brown.A. Understanding Food, Wadsworth, Thomson Learning Publications, 2000.
3. Paul, P.C., and Palmer, H.H., Food Theory and Applications. John Wiley and Sons, Newyork, 2000 Revised Edition.
4. Swaminathan, M.1976 : Essentials of Food and Nutrition Vol I and Vol IINorman
5. Potter , N : Food Science



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HUMAN PHYSIOLOGY

L	T	P	C
4	1	0	5

Sub Code: HBFS18005

Total no. of Hours: 50

OBJECTIVES:

To enable the students

1. Understand the structure and functions of various organs of the body.
2. Obtain a better understanding of the principles of nutrition through the study of physiology.

Unit-I

10 hours

Cell - Structure and functions, **Tissues** - Structure and functions

Sense organs- Structure and function of eye, ear, nose, tongue and skin

Digestive system - Anatomical consideration – structure & functions, Brief study of the organization of the digestion, absorption and assimilation of food.

Unit-II

10 hours

Blood - RBC, WBC, Platelets and Lymph. Blood coagulation, blood grouping and Rh factor.

Circulatory system - Heart structure and functions - cardiac cycle.

Unit-III

10 hours

Respiratory system - Basic anatomy of the respiratory system, process of respiration, transport and exchange of oxygen and carbon di oxide in the body.

Endocrine glands - Structure and function of pituitary, thyroid, islets of langerhans and adrenal gland.



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Unit-IV

10 hours

Reproductive system - Anatomy of the male and female reproductive organs. Menstrual cycle. Spermatogenesis, fertilization, Development of Foetus.

Unit-V

10 hours

Excretory system - Excretory organs - structure of kidney and functions, formation of urine, composition of urine. Muscles – structure and physiology of muscular action.

Nervous system – Types of Nervous System, Physiology of the nerve cell, parts of the central nervous system and Peripheral Nervous System and functions.

Reference Books:

1. Chatterjee, C.C., Human Physiology, Vol-I&II Medical allied agency, Calcutta 1981.
2. Beat and Taylor, Living body. Mc.Graw hill company, Newyork.
3. Sathya Narayana, Essentials of Biochemistry(2000)
4. Saratha Subramanian, Text of Human Physiology(2000).
5. Stuart Ira Fox ,Human Physiology(2003)



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L	T	P	C
4	1	0	5

NUTRITIONAL BIOCHEMISTRY

Sub Code: HBFS18006

Total no. of Hours: 50

OBJECTIVES:

To enable the students to obtain depth in the study of Biochemistry

Unit I:10 hours

Introduction to bio chemistry and relation to nutrition, carbohydrates – Structural classification, metabolism of glucose - Glycolysis, krebs cycle, gluconeogenesis, glycogenesis, glycogenolysis, blood glucose maintenance and its regulation Inborn errors of metabolism with reference to Carbohydrates - Fructosuria, Pentosuria, Galactosemia and Glycogen Storage Disease

Unit II:10 hours

Proteins – Classification based on amino acid, primary, secondary and tertiary structure of proteins, hydrolysis of proteins, denaturation, precipitation and coagulation, deamination, transamination, decarboxylation – urea cycle and metabolic disorders of urea cycle Inborn errors of metabolism with reference to Protein: Albinism, Phenylketonuria, Hartnup disease

Unit III:10 hours

Lipids – chemical composition of Fats, metabolism – beta oxidation of fatty acids and bio-synthesis of fatty acids – ketone bodies, ketogenesis and ketosis, cholesterol – biosynthesis Inborn errors of metabolism with reference to Lipids: Gaucher's disease, Niemann – Pick disease, Tay – Soch's disease, Fabry's disease, Refsum's disease, Krabbe's disease

Unit IV:10 hours



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Nucleic acids and protein biosynthesis, nucleotides, nucleosides, nucleic acids – structure and function

Unit V:10 hours

Enzymes – classification, factors affecting enzyme activity, mechanism of enzyme action, enzyme inhibition, coenzymes and prosthetic group, Iso enzymes, diagnostic value of clinical enzymes

Reference Books:

1. Lehninger , A.L , Bio chemistry , worth Publishers FNC, Newyork, 2000
2. Ambiga Shanmugam, Fundamentals of Bio chemistry for medical students, Karthik printers 2002
3. Nutritional Bio chemistry, 2nd edition Tom Bridt, Academic Press 2006
4. Ranganatha Rao, k, Text book of Bio chemistry, Prentice Hall of India, New Delhi (2000)
5. Sathya narayanan .U , Chakrapani .U , Text book of Bio chemistry, 3rd edition , books and allied (p) Ltd, Kolkatta 2010



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L	T	P	C
0	0	2	1

COMMUNICATIVE ENGLISH PRACTICAL - II

Sub Code: HBEN18FL2

Total no. of Hours: 50

The Language Practical II focuses on the production and practice of sounds of language and familiarizes the students with the use of English in everyday situations and contexts.

OBJECTIVES:

The Syllabus aims

1. To make students improve their vocabulary and speaking skills
2. To help them shed off their shyness and fear and excel in communicative skills
3. To enable them to unlearn common errors and become communicatively competent

Unit – I

Listening to cultural awareness – Inferential Reading – Exclusive Reading Session – Listening to casual conversations, talks, interviews and lectures – Reading business articles – Thank you letters – Developing coherence and self expression, British and American Vocabulary, Error Detection, Punctuation

Unit – II

Listening to specific information relating to technical content – Reading Texts Expressing opinions – Listening for statistical information – Exercises related to articles (in magazines) and comparing Articles – Letter seeking permission to undergo practical training and undertake project work – Oral Summarizing.

Unit – III

Listening to specific information relating to technical content – Skimming and Scanning – Writing invitation letters – Giving Instructions – Exercises related to listening to interviews and presentations – Oral Exercises related to vocabulary and Grammar Developing coherence and self expression, making presentations.



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Unit – IV

Listening and retrieving Information – Initiating Conversation – Choice of Sentences – Re-positioning of the sentences in conversation – Exercises related to retrieving information – Reading advertisements – Letter to the Editor – industrial visits – Activities related to intonation and improving voice quality – Interpreting Business reports – Writing Proposals (Symposiums, seminars, conferences paralinguistic and extra linguistic features body language, short presentations).

Reference Books:

- A Course in Communication Skills (Anna University, Coimbatore edition) : Dutt,
- Rajeevan, Prakash. Cambridge University Press India Pvt. Ltd, 2007
- Meenakshi Raman and Sangeeta Sharma-'Technical Communication English
- Skills for Engineers'; Oxford University Press, 2008.
- Extensive Reading:

MARKING SCHEME FOR PRACTICAL EXAMINATION

Duration	03:00hrs
1. Uniform & Grooming	10
2. Courtesy & Manners	10
3. Speech and Communication	20
4. Technical Knowledge	30
5. Practical Situation Handling	20
6. Journal	10

	100 Marks

Note:

1. Speech Communication Courtesy and Manners should be observed throughout.
2. 50 technical questions to prepared in advance, covering the entire syllabus.
3. Practical situations – at least 10 situations be made representing all aspects of the syllabus.



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L	T	P	C
0	0	2	1

COMMUNICATIVE FRENCH PRACTICAL – I INTRODUCTION TO FRANCE AND THE FRENCH LANGUAGE

Sub Code: HBF18FL1

Total no. of Hours: 50

Unit – I

Communicative Objectives - Identifying the French language - How to greet each other and to take leave - Self Introduction	:	Objectifs communicatifs - Identifier la langue française - se saluer, prendre congé - se Présenter
Linguistic tools - French script - Alphabet - Accents & Punctuations	:	Outils linguistiques - L' écriture française - L'Alphabet - Les Accents et les Ponctuations

Unit – II

Communicative Objectives - Learning how to ask questions - Numbers - Time	:	Objectifs communicatifs - le savoir-faire du début - Les Nombres - L'Heure
Linguistic tools - 8 everyday questions & answers - Intonation - Rythme	:	Outils linguistiques - 8 questions & les réponses

Unit – III

Communicative Objectives - Discover & locate France - France in the world - GMT & France - To know about Francophony	:	Objectifs communicatifs - La France - La France dans le Monde - Le décalage horaire - Connaître la francophonie
Linguistic tools	:	Outils linguistiques



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- Identifying frontiers & learning
With maps in French
- comprendre les frontières

Unit – IV

- | | | |
|---|---|--|
| Communicative Objectives | : | Objectifs communicatifs |
| - Finding the place of France in the European Union | | - L'Union Européenne et La France |
| - Learning the frontiers with maps | | - Les cartes de l'Europe |
| - Knowing the civil life of France | | - Connaître la vie civile de la France |

- | | | |
|---|---|---------------------------------------|
| Linguistic tools | : | Outils linguistiques |
| - symboles of France | | - les symboles français |
| - the outline of the Republic of France | | - les grandes lignes de la République |

Unit -V

- | | | |
|---------------------------------|---|--------------------------------|
| Communicative Objectives | : | Objectifs communicatifs |
| - Sounds of the French Language | | - les sons français |
| - Reading practice | | - la pratique de lecture |

- | | | |
|---|---|--|
| Linguistic tools | : | Outils linguistiques |
| - consonants, vowels, semi-vowels, nasals | | - consonnes, voyelles, semi-voyelles, voyelles nasales |
| - syllabic division | | - division en syllabes |
| - Francophone countries through map reading | | - les pays Francophones par la carte |
| - Poems - 4, drama parts -4 & songs -4 | | - poèmes, pièces et chansons |

Référence Books :

- Dr. M. Chandrika V. Unni & Ms Meena Mathews :
- Parlez-vous français? Partie 1.

MARKING SCHEME FOR PRACTICAL EXAMINATION

Duration	03:00hrs
1. Uniform & Grooming	10
2. Courtesy & Manners	10
3. Speech and Communication	20
4. Technical Knowledge	30
5. Practical Situation Handling	20
6. Journal	10

	100 Marks

Note:

1. Speech Communication Courtesy and Manners should be observed throughout.
2. 50 technical questions to be prepared in advance, covering the entire syllabus.



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Practical situations – at least 10 situations be made representing all aspects of the syllabus.

L	T	P	C
0	0	2	1

HUMAN PHYSIOLOGY PRACTICAL

Sub Code: HBFS18L03

Total no. of Hours: 50

1. Microscopic Identification and Study of
 - a) Tissues - Epithelial , Connective , Muscular and Nervous Tissue
2. Study of Anatomy of Heart , Brain , Kidney and Digestive system using readymade models
3. Determination of Blood Count
4. Determination of bleeding and clotting time
5. Determination of Blood Group and Blood Pressure
6. Determination of Respiratory rate and Pulse rate
7. Estimation of Haemoglobin
8. Estimation of WBC
9. Estimation of RBC
10. Estimation of ESR



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L	T	P	C
0	0	3	1

PERSONALITY DEVELOPMENT PRACTICAL II

Sub Code: HBMG18FL2

Total no. of Hours: 50

OBJECTIVES:

- Handling Transition from school to college – Necessary adaptation to be done in their attitude and behavior
- Orientation to developing and maintaining holistic health
- Exposing students to study methodologies and study skills
- Understanding the Value of the course and its realistic prospectus
- Morality development

Unit- I

10 hours

Communication skills (verbal, non-verbal, body language), Art of effective conversation, Art of listening, Email & telephone communication etiquettes, Dressing, Grooming, Personal hygiene, Social etiquettes

Unit -II

10 hours

Time management, Kaizen's VAT and NVAT, overcoming procrastination and excuse making, Relationship management, Developing workable relationship with superiors, subordinates, customers



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Unit -III

10 hours

Basic concepts of recruitment and selection, Selection procedures, Types of interviews, preparing for an interview, writing resume, obtaining knowledge of company profiles, updating current affairs and preparing possible questions

Attending interviews, Effective participation in GD, Facing interview panel, Time keeping, Basic etiquettes, Self introduction, Panel addressing, Mental frame work during interviews, Manifesting clarity of thoughts and expression.

Unit -IV

10 hours

Understanding office dynamics and managing office politics, developing leadership skills, Team building, Team management, Enhancing inter & intra team coordination, Motivating the team, Assertiveness.

Mindfulness as a method manifesting efficiency, use of here and now techniques for effective functioning, Stress management

Unit -V

10 hours

Presentation skills, Seminar taking skills, Public speaking skills, Extempore speaking, Conducting /participating in meeting, Objective agenda orientation, Clarity of thought and expression, conduct during meeting, Making minutes



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L	T	P	C
4	1	0	5

SEMESTER III

DIET IN HEALTH

Sub Code: HBFS18007

Total no. of Hours: 50

OBJECTIVES :

- To enable the students to understand the role of nutrition in different conditions.
- To enable the students to develop competency in planning diets to meet the nutritional requirements of different socioeconomic levels.

Unit - I Introduction to Human Nutrition

10 Hours

Basic concepts of nutrition and health. Food guide pyramid, model food plate, five food groups. Meal planning, steps in meal planning. Dietary guidelines for Indians. Recommended Dietary Allowances (RDA)-Definition, Food composition table, food exchange list. Indian reference man and woman.

Unit - II Nutrition in Pregnancy and Lactation

10 Hours

Nutrition in Pregnancy-Nutritional status and general health, physiologic changes, nutritional requirements, dietary problems, complications.

Nutrition in Lactation -Physiological adjustments during lactation, let-down reflex, nutritional requirements, efficiency of milk production, diet of lactating women, galactogogues.

Unit- III Nutrition in Infancy and Preschool Age

10 Hours

Nutrition in Infancy - Growth and development during infancy, nutritional requirements, breast feeding, artificial feeding, weaning foods suitable for infants.



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Nutrition in Preschool Age - Growth and development of preschool children, nutritional requirements, food habits and nutrient intake of preschool children, nutritional problems

Unit-IV Nutrition in School Age and Adolescence

10 Hours

Nutrition in School Age -Physical development, food habits, nutritional requirements, nutritional status of school children, packed lunches and mid-day meal programmes.

Nutrition during Adolescence - Nutritional requirements, food habits, eating disorders.

Unit-V Nutrition for Adults and Old Age

10 Hours

Nutrition for Adults - Nutritional requirements, nutritional problems of adults.

Nutrition for Old age - Nutritional requirements, food habits, nutritional problems

Reference Books:

- Abraham. S (2016), Nutrition through Life Cycle, First Edition, New Age International (P) Ltd. Publishers, New Delhi.
- Bamji M.S., Krishnaswamy K and Brahmam GNV (2009), Text book of Human Nutrition- 3 rd Edition, Oxford and IBH Publishing Co .Pvt .Ltd. New Delhi.
- Chadha R and Mathur P (2015) , Nutrition : A Lifecycle Approach. Orient Blackswan, New Delhi.
- ICMR (2010) Nutrient Requirements and Recommended Dietary Allowances for Indians, Published by National Institute of Nutrition, Hyderabad.
- ICMR (2011) Dietary Guidelines for Indians, Published by National Institute of Nutrition, Hyderabad.
- ICMR (2017) Indian Food Composition Tables, Published by National Institute of Nutrition, Hyderabad.
- Khanna K, Gupta S, Seth R, Passi SJ, Mahna R, Puri S (2013), Textbook of Nutrition and Dietetics, Phoenix Publishing House Pvt. Ltd.
- Medeiros DM ,Wildman REC (2015), Advanced Human Nutrition,3rd Edition, Jones and Bartlette Learning, USA.
- 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.
- Srilakshmi B (2008), Nutrition Science, 3 rd Edition, New Age International (P) Ltd. Publishers, New Delhi.
- Swaminathan. M(2001), Principles of Nutrition and Dietetics, The Bangalore Printing And Pub. Co. Ltd. Bangalore.
- Wardlaw GM, Hampi JS, DiSilvestro RA (2004), Perspectives in Nutrition,6 th edition., McGraw Hill



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L	T	P	C
4	1	0	5

FOOD SERVICE MANAGEMENT

Sub Code: HBFS18008

Total no. of Hours: 50

OBJECTIVES :

- To enable the students to:
- To develop skills in menu planning for quantity preparation.
- To understand the different styles of food service in volume feedings.

Unit-I

10 Hours

Introduction to different food service outlets: Definition of catering industry, functions, types of catering establishments, commercial catering (hotels and restaurants), welfare catering (hospital), industrial catering and transport catering. Different food and beverage service outlet.

Unit-II

10 Hours

Menu planning: Sequence of course, Technique of writing menus, Functions of menu, Types of menu – Ala carte, Table d hote and combination menu, nouvelle cuisine, Different types of cuisines. Kitchen layout and types of kitchen.

Unit -III

10 Hours

Food service: Food service delivery systems (centralized and decentralized), types of foodservice systems (conventional, commissary, ready prepared, assembly), service styles (table, counter, tray, silver, plate, cafeteria, buffet). Specialized forms of food service (hospitals, airline, rail, home delivery, catering and banquet, room and lounge service)

Unit-IV

10 Hours

Financial Management system: Book keeping (single and double), books of accounts, Journal, Ledger, trial balance, balance sheet. Type and behavior of cost, profit analysis, food cost Control

Unit -V

10 Hours



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Staff organization of different outlets – manager, hostess, supervisor, steward, waiter. Uses of bills and checks on control system outlets.

Reference Books:

- Anderson, F. (1996), Home Appliance Servicing Taraporwals Sons. & Co.
- Arora, K., (2002), Theory of Cookery, Frank Bros. & Co., Ltd., New Delhi.
- Berry, M., (1995), Complete Cook Book, Dorling Kindersley Ltd., London.
- Hsiung, D.T., (1994), Chinese Cantonese Cooking, Parragon Book Service Ltd., England.
- Johnson, J.B, (1995), Equipment for Modern Living, Macmillan company Ltd
- Khan, M.A. (1987), Food Service Operations, Avi Publishing Company.
- Lillcrap, D.K., (1989), Food and Beverage Service, 2nd edition, BLBS.
- Shiring, S.B., Jardine, R.W. and Mills, R.J (2000), Introduction to Catering, Thomson Asia Ltd., Singapore.
- Kinton, R. and Cesarani, V. (1999), The theory of catering, ELBS publishing.
- Varghese, B. (1999), Professional Food and Beverage Service Management, Macmillan India Ltd.
- Sethi, M and Malhan, S (1991), Catering Management, Wiley Eastern Ltd,



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L	T	P	C
4	1	0	5

FOOD PRESERVATION

Sub Code: HBFS18009

Total no. of Hours: 50 **OBJECTIVES :**

- To study the different ways in which food spoilage occurs and the techniques to prevent it.
- To know the different spoilage agents and the ways in which they act on food.
- To understand the principles behind the various methods of food preservation.
- To know how to use these principles to preserve different types of foods.
- To study the method of action of different preservatives.

Unit -I

10 Hours

Food Spoilage

Definition, types of spoilage - physical, enzymatic, chemical and biological spoilage. Mechanism of spoilage and its end products, shelf life determination.

Unit -II

10 Hours

Preservation by using Preservatives Food preservation:

Definition, principles, importance of food preservation, traditional and modern methods of food preservation. Food additives – definition, types, Class I and Class II preservatives.

Unit -III

10 Hours



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Preservation by use of high temperature Pasteurization:

Definition, types, Sterilization, Canning - history and steps involved, spoilage encountered in canned foods, types of containers used for canning foods. Food irradiation – Principles, merits and demerits, effects of irradiation and photochemical methods.

Unit- IV

10 Hours

Preservation by use of Low Temperature

Refrigeration - advantages and disadvantages, freezing: Types of freezing, common spoilages occurring during freezing, difference between refrigeration and freezing.

Unit -V

10 Hours

Preservation by Removal of Moisture

Drying and dehydration - merits and demerits, factors affecting, different types of drying, Concentration: principles and types of concentrated foods.

Reference Books:

- Gould, G. W. (2012), "New Methods of food preservation", Springer Science & Business Media.
- Manay, N.S. Shadaksharaswamy, M. (2004), "Foods- Facts and Principles", New age international publishers, New Delhi.
- Srilakshmi, B.(2003), "Food Science", New Age International Publishers, New Delhi.
- Subalakshmi, G and Udipi, S.A.(2001), "Food processing and preservation". New Age International Publishers, New Delhi.



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DIET IN HEALTH PRACTICAL

L	T	P	C
0	0	4	2

Sub Code: HBFS18L04

Total no. of Hours: 50

Planning diets to meet the nutritional requirement for the following conditions:

1. Infancy (Collection of weaning recipes)
2. Pregnancy
3. Lactation
4. Preschool age
5. School Age
6. Adolescents
7. Adult
8. Old Age



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COMMUNICATIVE FRENCH PRACTICALS II

Sub Code: HBFR18FL2

L	T	P	C
0	0	4	2

Total no. of Hours: 50

OBJECTIVES :

- To help the students acquire reading and speaking skills
- To help the students comprehend situations in French in a French context.

Unit .1 SOPHIE, C'EST MOI.

COMPÉTENCES COMMUNICATIVES (a)

COMMUNICATION :

Se saluer, Prendre congé, se présenter , Présenter quelqu'un/ quelque chose

COMPÉTENCES COMMUNICATIVES (b)

LECTURE/PHONOLOGIQUE :

Poème –La Clef, Le son 'a » (ah) , Exercices de répétition , Lecture guidée – Les quartiers français

COMPÉTENCES LINGUISTIQUES (a)

LEXIQUE Salutations, Présentatifs, Détails d'identité, Professions , Quartiers



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COMPÉTENCES LINGUISTIQUES

(b)

GRAMMAIRE Les genres, Les nombres, Les articles, Les présentatifs ,
Quelques professions, Pluriel des noms – réguliers et irréguliers, C'est /il est,
Pronoms toniques

ÉLÉMENTS CULTURELS

Comportements de salutations, les quartiers, Salutations françaises, Le Peintre
Monet

UNIT. 2 COLETTE, C'EST MON AMIE

COMPÉTENCES COMMUNICATIVES

(a)

COMMUNICATION

Vie d'étudiant , Décrire la vie d'étudiant , Exprimer les liens familiaux , parler de
l'appartenance , Parler des habitudes

COMPÉTENCES COMMUNICATIVES

(b)

LECTURE/PHONOLOGIQUE

Paul Eluard - Les mots qui font vivre, Le son « eu » , Des énoncés à répéter ,
Lecture guidée, Prononciation de la conjugaison

COMPÉTENCES LINGUISTIQUES

(a)

LEXIQUE

La famille , S'exprimer la fréquence , Des habitudes

COMPÉTENCES LINGUISTIQUES

(b)

GRAMMAIRE

Articles contractés , Le présent de l'indicatif des verbes à terminaison-er, Mots
d'enchaînement, Verbes à changements orthographiques, Verbes pronominaux ,
Pronoms toniques, Adjectifs possessifs, Adjectifs qualificatifs, Locutions avec
« avoir »

ÉLÉMENTS CULTURELS

Le Centre Beaubourg, L'agenda , Les cours universitaires

UNIT . 3 HAY LIN, C'EST UNE JOLIE FILLE CHINOISE

COMPÉTENCES COMMUNICATIVES (a)

COMMUNICATION

Parler des voyages, Identifier les vêtements, Caractériser des personnes, Faire
des exclamations , S'informer sur la vie d'étudiant français

COMPÉTENCES COMMUNICATIVES (b)



DEPARTMENT OF FOOD SCIENCE, NUTRITION AND DIETETICS

LECTURE/PHONOLOGIQUE

Théophile Gautier -Le Printemps Le son « ee », Décrire des personnes, Prononcer le nom des pays et des nationalités, Appréciation/exclamation

COMPÉTENCES LINGUISTIQUES (a)

LEXIQUE

Transports et voyage, Les pays , nationalité, Les vêtements /mode , Les parties du corps

COMPÉTENCES LINGUISTIQUES (b)

GRAMMAIRE

Adjectifs de nationalité , Prépositions de lieu ,Verbes aller-, venir, Adjectifs qualificatifs m /f. Féminin des adjectifs réguliers, irréguliers, Conjugaison au présent des verbes à la terminaison –ir

ÉLÉMENTS CULTURELS

L'Aéroport de Roissy, A la douane, Les vêtements , La Mode à Paris, Quelques professions, Le sport et la santé, La Joconde, La BD

UNIT . 4 LA TOUR D'ARGENT, C'EST UN RESTO SYMPA !

COMPÉTENCES COMMUNICATIVES (a)

COMMUNICATION

Communication au restaurant ,Comment parler des recettes, Parler des goûts et des préférences

Identifier les types de restaurants, Comment monter un petit restaurant

COMPÉTENCES COMMUNICATIVES (b)

LECTURE/PHONOLOGIQUE

Madeline Ley – « Odelette »Le son « o » Répétition des énoncés simples comme questions et répliques , Identification des sons nasaux, Les Exercices de répétition

COMPÉTENCES LINGUISTIQUES (a)

LEXIQUE Les repas français, Recette, Types de restaurants français, La nourriture et l'alimentation, Des goûts, Activités sportives

COMPÉTENCES LINGUISTIQUES (b)

GRAMMAIRE

Quelques verbes irréguliers, Les prépositions « de » et « à » Adjectifs démonstratifs , Types de phrases, Conjugaison en français, l'impératif, Les articles partitifs Exprimer l'obligation , Interrogation ,Oui et si ,Exclamation et des activités graduées

ÉLÉMENTS CULTURELS



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les repas français , La restauration parisienne

UNIT.5 NICE, C'EST UN LIEU SUPER CHIC ! **COMPÉTENCES COMMUNICATIVES (a)** **COMMUNICATION**

Planifier des vacances, Parler des concours, Parler du tourisme, Parler du sport,

Parler du temps qu'il fait, S'exprimer au comparatif et au superlatif

COMPÉTENCES COMMUNICATIVES (b) **LECTURE/PHONOLOGIQUE**

Coucou Hibou, Le son « yu » Des énoncés à répéter Lire le nom de quelques villes

COMPÉTENCES LINGUISTIQUES (a) **LEXIQUE**

Activités de vacances , Mots de localisation, Lire le plan de Paris, Le climat et l'écologie , Concours international, Les saisons

COMPÉTENCES LINGUISTIQUES (b) **GRAMMAIRE**

Adjectifs de couleur, Nombres ordinaux , Conjugaison de quelques verbes irréguliers, 3 temps autour du présent « De » et « à » et des verbes, Les différentes formes du négatif, « il fait » , Le comparatif et le superlatif absolu

ÉLÉMENTS CULTURELS

Auberges de jeunesse, Les vacances , Plan de Paris et les arrondissements, Quelques monuments parisiens, un concours international, Tourisme fluvial français

Reference Books :

- Unni Chandrika and Mathews Meena : (2018) : Parlez-vous français – 1^{er} Global Publications, Chennai.
- Catherine Dollez, Sylvie Pons : (2014) Alter Ego 1 Hachette, Paris
- CLE INTERNATIONAL Lectures Cle en français facile. (2012) Hachette Paris



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(An ISO 9001-2008 Certified Institution)



DEPARTMENT OF FOOD SCIENCE, NUTRITION AND DIETETICS

INTERNSHIP (FOOD INDUSTRY)

Sub Code: HBFS18L05

L	T	P	C
0	1	3	2

Total no. of Hours: 50

An internship program for not less than 14 days at various food and allied industries (industrial/transport/airline/commercial).



DEPARTMENT OF FOOD SCIENCE, NUTRITION AND DIETETICS

SEMESTER IV

THERAPEUTIC NUTRITION

Sub Code: HBFS18010

L	T	P	C
4	1	0	5

Total no. of Hours: 50

OBJECTIVES:

- To impart knowledge on the clinical, biochemical changes and dietary management of various diseases
- Gain knowledge in planning and preparation of Therapeutic diets.
- Manage to make appropriate dietary modification for various disease conditions.
- Develop capacity and aptitude for taking up dietetics as a profession. Build awareness on Public Health nutrition problems.



DEPARTMENT OF FOOD SCIENCE, NUTRITION AND DIETETICS

Unit - I: Introduction to Dietetics

10 Hours

Meaning and scope of dietetics, Dietician: Classification, responsibilities of dietitians. Nutrition care process.

Therapeutic adaptation of normal diets, principles and classification of therapeutic diets

Diet therapy, diet counseling

a) Routine hospital diet- Clear fluid, full fluid, soft and normal diets

b) Special feeding methods-oral, enteral and parenteral feeding.

Unit -II: Fevers, GI disorders and liver disorders

10 Hours

Fevers - Classification and etiology of acute and chronic fevers. Medical Nutrition therapy in Typhoid, Tuberculosis, HIV/AIDS

Gastro intestinal disorders- Diarrhoea, Constipation, Peptic Ulcer.

Unit -III : Lifestyle Diseases / Non Communicable Diseases

10 Hours

- Weight Management: Classification, Etiology, Dietary Management of Obesity, Underweight
- Diabetes Mellitus- Prevalence, classification and etiology, symptoms, diagnosis and complications. Glycemic Index, Glycaemic load. Dietary Management of Diabetes Coronary Heart Diseases

(a) Atherosclerosis - Phases, Etiology, Symptoms, Complications, Nutritional Management.

(b) Hypertension- Classification of BP, Hypertension Stages, etiology, dietary management, DASH diet.

(c) Cancer- Etiology, Risk factors – Dietary and Non dietary, Nutritional requirements for Cancer patients. Dietary management in cancer.

Unit -IV : Hepatic Disorders

10 Hours

Liver disorders: Etiology, Risk factors, Clinical symptoms and Dietary Management of Hepatitis, Cirrhosis and Hepatic Coma

Unit -V: Kidney Disorders

10 Hours

Etiology, Clinical symptoms and Dietary Management of common renal disorders: Nephritis, Nephrotic Syndrome, Acute and chronic renal failure and urolithiasis

Reference Books:

- L.Kathleen Mahan and Sylvia Escott-Stump.(2007).Krause's Food Nutrition and Diet therapy-11 thEdition.Saunders.USA
- Whitney.E.N. Cataldo.C.B.. and Rolfes.S.R.(2002). Understanding Normal and Clinical Nutrition. Sixth Edn. Thomson LearningInc.USA.
- Srilakshmi.(2009). Dietetics IVth Edition. Newage International(P)Ltd. Publishers. New Delhi
- Bamji.M.S.. Krishnaswamy. K and Brahmam (Eds.).(2009). Textbook of Human Nutrition Third Edition. Oxford &IBH publishing Co.Pvt.Ltd.. New Delhi.



DEPARTMENT OF FOOD SCIENCE, NUTRITION AND DIETETICS

- Subhangini. A.Joshy (2010).Nutrition and dietetics. Third edition. Tata Mc. Graw. Hill Education Pvt. Ltd. New Delhi
- PaullInsel, Elaine Turner and Don Ross.(2004)Nutrition second edition. American Dietetic Association. Jones and Barlett publishers, London

FOOD SAFETY AND QUALITY CONTROL

Sub Code: HBFS18011

L	T	P	C
4	1	0	5

Total no. of Hours: 50

OBJECTIVES:

- Understand the common organisms associated with food borne illness
- Apply the principles and methods of storage and preservation of various foods.
- To study about the food safety methods.

Unit -I



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Food safety-basic concepts

10 Hours

Food safety and importance of safe food. Factors affecting food safety- physical hazards, biological hazards, chemical hazards.

Unit -II

10 Hours

Microbiology of natural products

Water: sources, bacteriology of water supplies, bacteriological examination and purification of water.

Unit -III

10 Hours

Spoilage of different groups of foods

Causes, Factors affecting spoilage- Cereals, vegetables and fruits, meat, eggs, fish, milk

Unit-IV

10 Hours

Food packaging

Packaging :concepts ,significance and functions. Classification of packaging materialsflexible packages, rigid packages, retail or shipping containers. Packaging methods. Factors affecting the selection of packaging materials.

Unit -V

10 Hours

Food laws and standards

Mandatory measures-FSSAI, PFA, Essential commodities act, 1955. Voluntary standards and certification system- Bureau of Indian standards, AGMARK. Consumer protection act, 1986. Food standardization and regulation agencies in India-CCFS, CFL. International standards- Codex alimentarius, ISO, WHO, FAO, WTO, HACCP.

Reference Books:

- Roday,S 1999. Hygiene and Sanitation in Food Industry. Tata Mc Graw Hill Publishing Company Ltd., New Delhi
- Frazier,W.C and Westhoff, D.C. Food Microbiology. Tata MC Graw –Hill Publishing Company Ltd., New Delhi, 5th Edition, 1997
- Adams,M.R and Moss ,M.O .Food Microbiology .New Age Intenational (P) Ltd., Publishers.1996
- Anna K.Joshua, Microbiology. Popular Book Dept. Publishers. 1994 New Delhi , 1996



DEPARTMENT OF FOOD SCIENCE, NUTRITION AND DIETETICS

- Potter, N. Hotchkiss, H.J. Food Science (5th edition) CBS Publishers and Distributors, New Delhi, 1996
- Srilakshmi B. Food Science. 4th Edition. New Age International Private Limited, New Delhi, 2008

NUTRITIONAL ASSESSMENT AND SURVEILLANCE

Sub Code: HBFS18012

L	T	P	C
3	1	0	4

Total no. of Hours: 50

Unit- I

10 Hours

Nutritional status Assessment and Surveillance

Meaning, need, objectives and importance. Community, regional, national and international surveillance systems.

Unit -II

10 Hours

Rapid Assessment Procedures

Need, importance, techniques, interpretation and steps in RAP. Sources of secondary health data – sources of relevant vital statistics, importance of infant, child, maternal mortality rates and epidemiology of nutrition related disease.

Unit-III

10 Hours

Growth Chart

Definition of Growth Chart, WHO Chart, and charts used in India, uses, meaning of reference curve and growth curve.

Unit -IV

10 Hours



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Nutritional Assessment – Anthropometry

Anthropometry: need, importance, standards for reference, techniques of measuring height, weight, head circumference, chest circumference, mid-arm circumference, skin fold thickness, waist hip ratio, calculation of BMI, interpretation of the measurements, use of growth charts for various groups.

Unit - V

10 Hours

Nutritional Assessment – Dietary, clinical and biochemical

Diet Surveys: need, importance, methods, interpretation, concept of conception unit, intra inter individual distribution in the family, verifying the adequacy of the diet with respect to RDA, concept of family food security.

Clinical signs, biochemical and biophysical methods: need, importance, identifying signs of deficiency diseases, interpretation of the clinical signs, biochemical and biophysical values in major diseases.

Reference Books:

- Park. K, (2005), Park's Textbook of Preventive and Social Medicine, 18th edition, Banarsidas Bhanot Publishers, Jabalpur.
- Srilakshmi.(2009). Dietetics Vth Edition. Newage International(P)Ltd. Publishers. New Delhi
- Jelliffe D, (1996): Assessment of Nutritional Status on the Community – WHO Monograph, Series No. 53, Geneva.
- Gupta P and Thakhar R, (2003): Nutritional Disorder and Community Health, Pointer Publishers, Jaipur.
- Dr. Swaminathan. M, Food and Nutrition, 2nd edition 1985, Reprint 2006. The Bangalore Printing and Publishing.
- Whitney, E.N. and Rolfes, S.R Understanding Nutrition, 10th edition 2005 Thomson/Wadsworth Publishing company, Belmont CA



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- Williams, R. Medications and older adults 2001. FDA Consumer magazine.

HUMAN DEVELOPMENT

Sub Code: HBFS18013

L	T	P	C
3	1	0	4

Total no. of Hours: 50

OBJECTIVES :

- To provide scientific knowledge about human development and behavior.
- To know the needs of children at different stages of development.
- To give an awareness of the needs and problems of exceptional children.

Unit -I

10 Hours

Principles of growth development

Stages of development, Importance of heredity and environment in the development of the child.

Unit -II

10 Hours

Prenatal and Neonatal period



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Prenatal period : Conception, stages of development, complications of pregnancy, factors influencing prenatal development, antenatal care.

Neonatal : Characteristics, abilities and adjustments.

Unit -III

10 Hours

Babyhood, Early childhood, late childhood

Physical, motor, emotional, social, moral, cognitive and language development. Discipline methods and effects..

Unit -IV

10 Hours

Pre- school education

Objectives and types of pre schools- nursery, balwadi, laboratory nursery school, kindergarten and Montessori

Unit -V

10 Hours

Adolescence and Adulthood

Adolescence : Characteristics, physical, social, emotional, cognitive and moral development, problems of adolescence. Sex education- need and significance.

Adulthood : Characteristics and problems.

Reference Books:

- Hurlock E.B., Child Development, Mc Graw Hill, Kogakurtia Ltd.
- Hurlock E.B., Child Growth and Development, Mc Graw Hill
- Hurlock E.B., Developmental Psychology, Mc Graw Hill
- Devadas R.P. and Jaya N. (1984) A Textbook on Child Development, Mac Millan, India Ltd.
- Suriakanthi A. (1989) Child Development, Kavitha Publication, Gandhigram.
- Stewart A.C. and Friedmans (1987) Child development: Infancy through Adolescence, Willy
- International.



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- Gaj G.T. (1989) Human Development, Prentice Hall, New Jersey.

L	T	P	C
0	0	4	2

THERAPEUTIC NUTRITION PRACTICAL

Sub Code: HBFS18L06

Total no. of Hours: 50

Unit-I

Deficiency Diseases

Plan and prepare diets for Deficiency Conditions.

- a. Iron deficiency anemia
- b. Kwashiorkor
- c. Night Blindness

Unit -II

Therapeutic Diets

Plan and prepare Diets for Disease Conditions

- a. Routine hospital diets
- b. Obesity



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- c. Underweight
- d. Diabetes mellitus
- e. Typhoid
- f. Tuberculosis
- g. Peptic ulcer
- h. Constipation
- i. Cirrhosis
- j. Acute glomerulo nephritis
- k. Renal calculi
- l. Hypertension.
- m. Atherosclerosis

FUNDAMENTALS OF COMPUTER PRACTICAL

Sub Code: HBFS18L07

L	T	P	C
0	0	4	2

Total no. of Hours: 50

Unit – I

10 Hours

Windows 8 - Operating System

Introduction to computer - Peripheral Devices: Input and Output Devices, Central processing Unit, Operating System - At a glance, Features of Windows Operating System, Different versions of Windows – Windows 8 - an Operating System at a glance.



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The Desktop, The Taskbar and Other Desktop Components, Control Panel - usage and features - Adding, Removing Programs, Adding, Deleting Fonts, Customize your Desktop display, Mouse, Printer Settings

Managing Files (with Windows Explorer or My Computer) - Creating, Opening, Deleting, Copying, Moving, Searching for Files and Folders, Formatting a disk, Creating Shortcuts

Using Windows Accessories - Calculator, Notepad, WordPad, and Paint.

Unit – II

10 Hours

Microsoft word 2010

Create a New word document, Using Office Button to Open, Save, Print a word document, Editing a Document - Select, Cut, Copy, Paste, Find & Replace, Formatting a Document using Font Setting, Paragraph Alignment, and Styles.

Different types of Pages & Tables, Picture, Clip Art, Smart art & Chart, Creating Header & Footer, Word Art & Symbols, Text Box, Date & Time, and Objects in a word document.

Changing the themes, Orientation, Page Setup - Margins, Size, Columns, Number, Page Background - Watermark, Page color, Page Border

Different types of document Views - Print Layout, web Layout, Showing, Hiding and Zoom a document, Viewing different types Windows - New Window, Arrange All, Split, View side by side, Creating a Macro

Unit – III

10 Hours

Microsoft Excel 2010

An Introduction – Spreadsheet, Getting acquainted with Ms-Excel, Understanding the Excel Screen format

Workbook - Create, Save, Open ,Print, Close, Switching between Sheets, Entering and Editing Data, Using Formulas, Sort & Filter, Macro.



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Worksheet - Inserting, Deleting, Renaming, Creating Headers, Footers and Setting Page Numbers, Cutting, copying, moving and pasting cells – Different methods, Inserting and deleting Cells, Rows and Columns, Hide, Unhide Rows, Columns Formatting - Format Cells Dialog Box

Inserting Tables, Text, Date & Time, Formula Auditing, Calculation, Picture, Clip Art, Smart art, Chart, link.

Unit IV

10 Hours

Microsoft PowerPoint 2010

Why Pictorial Presentation - Getting Into Power Point-Creating, Opening and Saving Presentations

Types of Views- Normal Slides, Outline, Slide Sort, Note Page, Slide show, Handout Master, Notes Master,

Making a New Slide -Move, Copy or Duplicate Slides-Delete a Slide, One Presentation to another-Go to Specific Slide-Change the Layout of a Slide-Zoom In or out of Slide,

Working with Text in Power Point-Cutting Text, Copying and Pasting-Formatting Text, Embossing-Alignment the Text-Left, Center, Right and Justify- Inserting Clipart Picture, Photo album, Shapes, Smart Art, Chart, Table, Media Clips – Movie, Sound in Presentation, Inserting Slide Number, Date & Time, Header & Footer

Custom Animation of Presentation- Transition to this Slide - Transition Scheme, Advance Slide, Arranging, Previewing & Rehearsing-Creating Animated Slides- Manually Advancing Slides-Adding and Removing Transitions, Running a Presentation Continuously-Printing the Presentation Elements

Unit – V

10 Hours

INTERNET – The basics

Basics of Networking -Introduction to Internet, The features of the Internet, Connecting to Internet & Microsoft Outlook, Surfing the net using Browser, Google drive, Google docs, creating an E-mail Account, Receiving and sending E-mail.

References:

1. Using Windows 8 – Kevin Wilson
2. Windows 8 step by step – Ciprian Adrian Rusen
3. Microsoft Office Professional 2010 step by step – Joan Lambert
4. Learning Microsoft Office 2010 – Ramesh Bangia
5. The Internet , The Basics – Jason Whittaker
6. Rajkamal, Internet and web Technologies, Tata McGraw Hill



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SEMESTER V

SPORTS NUTRITION

Sub Code: HBFS18014

L	T	P	C
4	1	0	5

Total no. of Hours: 50

OBJECTIVES:

- Understand the components of health and fitness and the role of nutrition in these.
- Enable students to make nutritional, dietary and physical activity recommendations to achieve fitness and well-being.
- Develop ability to evaluate fitness and well-being.
- Understand physiological changes and nutritional requirements during sports events.
- Knowledge of human body composition pattern and prescribe ways to regulate body composition level required for various sports performance.
- Formulate and apply appropriate strategies for the measurement and monitoring of the nutritional status of athletes.



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Unit-- I

10 Hours

Sports physiology

Introduction to physical fitness and its objectives. Role of nutrition in stress, fracture and injury.

Unit-II

10 Hours

Body Composition and Weight Management in Sports

Body build, size and body composition, levels of body composition, methods to measure body composition (Underwater Weighing, Air Displacement Plethysmography, DEXA(Dual Energy X-ray Absorptiometry), Bioelectrical Impedance, Skinfold Assessment), effective weight loss, Weight gain.

Unit-III

10 Hours

Exercise Performance and Nutrition

Energy expenditure during physical activity, Carbohydrates and performance, Fat metabolism and performance , Effect of exercise on protein requirements, Vitamins and Minerals , Fluid and electrolyte loss and replacement in exercise.

Unit-IV

10 Hours

Nutrition in Sports

Nutritional requirements in Sports events-Team, Power and Endurance events, Pre-game and Post game regime .Carbohydrate loading, Water and electrolyte balance.

Unit-V

10 Hours

Nutritional Ergogenics

Ergogenic aids and Supplements-Types, Potential and concerns. Measures of performance and physical fitness - work capacity, measures of performance and physical fitness.

Reference Books:

- Bamji S.M.,Rao NP and Reddy V(1998).Text book of Human Nutrition. Oxford and IBH Publishing C. New Delhi.
- Fink H.H.,Mikesky E.A and Burgoon A.L.(2012).Practical Applications in Sports Nutrition.3 rd ed.Jones and Barlett Learning.USA.
- Gibney J.M. Macdonald A.I and Roche M.H(2003).Nutrition and Metabolism. Blackwell Publishing. Maurice B Shils,Moshe Shike.A,Catherine Ross,Benjamin Cabellero,Robert J Cousins. 2006.Modern Nutrition in Health and Disesease edited by Lippincott Williams al Wilkins
- Melvin Williams. 2007. Nutrition for Health, Fitness and Sport, eighth edition, by McGraw-Hill.
- Cherie Moore .2004.Practical Nutrition for a Fit Life, by, Kendall-Hunt Publishers



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- WHO.1995.Physical Status:The Use and interpretation of Anthropometry.Report of a WHO Expert Committee,Geneva.

L	T	P	C
4	1	0	5

RESEARCH METHODS Sub Code: HBFS18015

Total no. of Hours: 50

OBJECTIVES :

- To understand the significance of research methods and statistics in Home Science research.
- To understand the types, tools and methods of research and develop the ability to construct data gathering instruments appropriate to the research design.
- To understand and apply the appropriate statistical techniques to analyze numerical data and draw inferences.

Unit-I

10 Hours



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Introduction to Research. Definition, Objectives and Characteristics of research, Types of Research – Basic, Applied and Action research, Exploratory and Descriptive, Ex-post facto research.

Unit- II

10 Hours

Identification of Research Problem. Sources of research problem, Criteria for the selection of research problem. Research design-Need and features. Variables – independent and dependent, control and intervening variables. Hypothesis – Meaning and importance, types of hypotheses.

Unit-III

10 Hours

Sampling Population and Sample, Sampling techniques, Merits and Limitations of sampling, Sampling and Non sampling errors. Research methods and tools: methods – Survey, observation, interview, experimental, clinical methods; tools – Questionnaire, Schedule (for interview and observation)

Unit-IV

10 Hours

Organization of Data, Classification and Tabulation. Primary and Secondary Data, Classification-Objectives of Classification, Tabulation-General rules of tabulation, Tables, Parts of a table, Types of tables, Representation of data-significance of diagrams and graphs, Types of diagrams and graphs-advantages and limitations.

Unit- V

10 Hours

Parts of dissertation: Introduction, Review of literature, Methods, Results and discussion, Summary and conclusion, abstract, Bibliography.

Reference Books:

- Bandarkar, P.L. and Wilkinson T.S. (2000) : Methodology and Techniques of Social Research, Himalaya Publishing House, Mumbai.
- Batnagar, G.L. (1990) : Research Methods and Measurements in Behavioural and Social Sciences, Agri. Cole Publishing Academy, New Delhi.
- Dooley, D. (1995) : Strategies for Interpreting Qualitative Data: Sage Publications, California.
- Gay, L.R. (1981, 2nd Ed) : Educational Research, Columbus, Ohio.
- Stranss, A. and Corbin, J. (1990) : Basis of Qualitative Research: Grounded Theory Procedures and Techniques, Sage Publications, California. APA (1994). Publication Manual of American Psychological Association (4th Edition), Washington : APA.
- Cooper, H.M. (1990) Integrating research: A guide for literature reviews (2nd Edition). California : Sage.
- Garg, B.L., Karadia, R., Agarwal, F. and Agarwal, U.K., 2002. An introduction to Research Methodology, RBSA Publishers.



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- Panneerselvam, R., Research Methodology, Prentice-Hall of India, New Delhi, 2004
- Kothari, C.R., 1990. Research Methodology: Methods and Techniques. New Age International. 418p. 3.
- Sinha, S.C. and Dhiman, A.K., 2002. Research Methodology, Ess Ess Publications. 2 volumes.
- John W. Best, James V. Kahn Research in Education (10th Edition) 2005 Eastern Economy Edition
- Richardson, L. (1990) Writing strategies. Reaching diverse audience. California: Sage.

FOOD ADULTERATION
Sub Code: HBFS18016

L	T	P	C
3	1	0	4

Total no. of Hours: 50

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DEPARTMENT OF FOOD SCIENCE, NUTRITION AND DIETETICS

OBJECTIVES :

To enable the students to:

- To study different food adulterants and its impacts
- To identify the hazards from adulterants

Unit-I

10 Hours

Introduction to Adulteration – Food adulteration –definition, types, natural toxins- naturally occurring toxicants in plants, mycotoxins, metal contaminants, pesticide residues, presence of extraneous material, residue from processing and packaging material.

Unit-II

10 Hours

Adulterants - Common adulterants and its detection in food grains, wheat flour, Bengal gram flour, dhal, milk and milk products, edible oils, ghee or butter, sugar, jaggery, honey, tea, coffee, spices and condiments.

Unit -III

10 Hours

Food additives–BHA or BHT, MSG, hydrolysed vegetable protein or autolysed yeast extract, potassium bromate, propyl gallate, sulfites, sodium nitrate, sodium benzoate, hydrogenated or partially hydrogenated oils.

Unit -IV

10 Hours

Food colourants and sweeteners –Detection and health hazards of brilliant blue, indigo, carmine, citrus red, fast green, erythrosine, allura red, tartarazine, sunset yellow, Food sweeteners: high fructose corn syrup (HFCS), aspartame, sucralose, saccharin, neotame, sorbitol.

Unit -V

10 Hours

Emulsifiers, stabilizers, thickening and gelling agents- : Tara gum, soyabean, hemicelluloses, sucroglycerides, stearyl tartarate, talc, gluconic acid, candelilla wax, carbamide, argon.

Reference Books:

- Duffus, J.H. and Worth, H.G. J. (2006) Fundamental Toxicology The Royal Society of Chemistry.
- George, A.B. (2004). Fenaroli's Handbook of Flavor Ingredients. CRC Press.
- Madhavi, D.L., Deshpande, S.S and Salunkhe, D.K. (2006). Food Antioxidants, Technological, toxicological and Health Perspective. Marcel Dekker
- Pomeroy, Y. and MeLoari, C.E. (2006), Food Analysis, Theory and Practice, CBS publishers and Distributor, New Delhi



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L	T	P	C
4	1	0	5

PREVENTIVE NUTRITION

Sub Code: HBFS18017

Total no. of Hours: 50

OBJECTIVES :

To enable the students:

- To understand the importance of preventive nutrition in the current scenario.
- To understand the role of Food security in National Development.

Unit-I

10 Hours

Functional foods- free radicals, antioxidants, phytochemicals, prebiotics, probiotics and symbiotic. Fibre – classification, role, physiological and metabolic effect, Role of fibre in prevention of diseases.

Unit-II

10 Hours

Food security- Food Security Bill, Role of PDS, Dietary diversification, Food Revolutions, agencies for control of food losses- FCI, SGC, SWC, CWC.

Unit- III

10 Hours

Food Allergy - Food Allergy, symptoms, common food allergens, food intolerance - food additives, carbohydrate intolerance, food elimination diet, risk factors for the development of food allergy.



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Unit -IV

10 Hours

Perspectives in preventive nutrition- fortification, enrichment, restoration, health supplements and proprietary foods, Nutrigenomics. Biomolecules as antibiotics, vitamins, pigments.

Unit -V

10 Hours

Immunization – Significance, immunization schedule for children, adults and for foreign travels, Importance of vaccination in adulthood, Role of individual, family and community in promoting health.

L	T	P	C
0	0	0	3

Reference Books:

- Wildman, R.E.C. (2007) Handbook of Nutraceuticals and Functional Foods, second edition. CRC Press.
- Park. K, (2005), Park's Textbook of Preventive and Social Medicine, 18th edition, Banarsidas Bhanot Publishers, Jabalpur.
- Lalitha. M, (1997), Major Issues in Food and Nutrition Science, Kanishka Publishers, New Delhi.

INTERNSHIP (HEALTH SECTOR)

Sub Code: HBFS18L08

Total no. of Hours: 50

Dietetics Internship

A summer internship program for not less than 24 days (144hrs) full time and 48 days (144hrs) part time at various professional health sectors.

OBJECTIVES:

- Get an exposure to the working situation of the dietary department of a reputed hospital / any health sector.
- Develop skills in Diet counseling and feeding of patients.
- Develop capacity for taking up dietetics as a profession.

A. Hospital internship in an established dietary for

Gain experience in:



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- Organization and layout of diet kitchen.
- Food purchase stores and issues.
- Food production and menu planning
- Food service and distribution.
- Calculation of diets and dietary management of patients.

B Case Study

1. Selection of two admitted patients from a hospital
2. Study the clinical, nutritional, biochemical and dietary profile on admission during hospital stay and at discharge.
3. Critically evaluate therapeutic modification of diet
4. Plan maintenance diet on discharge after diet counseling.
5. Writing of report.

SEMESTER VI

COMMUNITY NUTRITION

Sub Code: HBFS18018

L	T	P	C
4	1	0	5

Total no. of Hours: 50

OBJECTIVES:

To enable the students:

- To understand the importance of nutrition in national progress and the significance of the assessment of nutritional status.
- To find solutions to overcome problems of malnutrition in the community.

Unit -I

10 Hours



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Meaning of optimum Nutrition, Malnutrition – Under nutrition and over nutrition. Characteristics of IMR, MMR, morbidity and mortality. Relationship between nutrition and infection.

Unit -II

10 Hours

Epidemiology of Nutritional disorders Prevalence, Clinical signs, Classification, Aetiology Prevention and Control of–

- a) Protein Energy Malnutrition
- b) Vitamin A Deficiency
- c) Anaemia
- d) Iodine Deficiency Disorders
- e) Zinc Deficiency
- f) Fluorosis

Unit- III

10 Hours

Methods of assessment of nutritional status: Direct assessment and indirect assessment- Anthropometry, Biochemical, Clinical and Diet Surveys. Significance of nutritional assessment of community, improvement of nutrition of community.

Unit-IV

10 Hours

Nutrition Education. Definition, Significance, Planning and Implementation of Nutrition and Health Education Programme. Theories of Nutrition Education, Evaluation-Purpose and Types.

Unit -V

10 Hours

National and International Agencies and intervention programs in Community Nutrition. National Agencies - ICDS, NIN, CFTRI, ICMR, NNMB, NRHM, ICAR. International Agencies - FAO, WHO, UNICEF.

Reference Books:

- Dandiya, P.C, Zafer, Z.Y.K and (2003), Health education and community pharmacy, Vallabh Prakashan Printers, New Delhi.
- Khader, V. (2003), Foods – Nutrition and Health, Kalyani Publishers, New Delhi.
- Park. K, (2005), Park's Textbook of Preventive and Social Medicine, 18th edition, Banarsidas Bhanot Publishers, Jabalpur.
- Reddy, R.S. (1998), Nutrition Education, Commonwealth Publishers, New Delhi.
- Swaminathan, M. (2004), Food and Nutrition, Vol. II, 2nd edition, BAPPCO Publishers, Bangalore.
- Bamji, M.S, Rao, N.P and Reddy, V. (2003), Textbook of Human Nutrition, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
- Srilakshmi, B. (2004), Nutrition Science, New Age International Pvt. Ltd, New Delhi.
- Gibney, M.J, Margetts, B.M, Kearney, J.M and Arab, L. (2005). Public Health Nutrition, Blackwell Publishing, USA.
- Ramachandran, L. and Dharmalingam, T. (2005), Health Education, Vikas Publishing House Pvt. Ltd., New Delhi.



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- Maurice B Shils, Moshe Shike.A,Catherine Ross, Benjamin Cabellero, Robert J Cousins. 2006. Modern Nutrition in Health and Disesease edited by, Lippincott Williams and Wilkins .
- Nutrient Requirements and Recomendend Dietary allowances for Indians. A report of the expert group of the Indian Council of Medical Research ICMR 2010.
- Sheila ChanderVir.2011. Public Health Nutrition in Developing Countries Edited by Woodhead Publishing India,Part I & II.



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FOOD FORTIFICATION

Sub Code: HBFS18019

L	T	P	C
3	1	0	4

Total no. of Hours: 50

OBJECTIVES:

- To enable the students to
- To understand the role of fortification in national nutritional development.
- To acquire knowledge about advantages, techniques and limitations of food fortification.

Unit- I

10 Hours

Food fortification – Basic concepts, Selection and basis of fortificants, Advantages and disadvantages of fortification, Criteria for selecting vehicles for food fortification, Design of fortification programme.

Unit- II

10 Hours

Economic aspects of food fortification, Restoration and enrichment, Technological and cost limits of fortification, Enrichment and fortification programmes in India, Organic Vs inorganic salts, Newer trends and researches in food fortification.

Unit- III

10 Hours



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Fortification with vitamin A, Iron, Iodine, Safety in nutrient fortification, multiple nutrient fortification, Quality assurance and control in food fortification, Steps in implementation of food fortification quality assurance programme.

Unit- IV

10 Hours

Fortification of cereals: Characteristics of nutrients used in cereal fortification, Fortification of breakfast cereals.

Unit -V

10 Hours

Fortification of beverages: Importance of beverage fortification, Health benefits of beverage fortification. Fortification of Snack products: Rationale for micronutrient fortification of snack products, Merits and demerits of snack fortification.

Reference Books:

- Manay N.S, Shadaksharaswamy. M (2005) Foods – Facts and Principles. New Age International Publishers.
- Bamji M., Prahlad N., Vinodhini R (1998), Text Book of Human Nutrition. Oxford and IBH Publ. Co., New Delhi.
- Srilakshmi, B. (2005). Nutrition Science, 5th edition, New Age International Publishers, New Delhi.
- Potter N.N, Hotchkiss J.H (1996), Food Science C.B.S. Publication, New Delhi.

COMMUNITY NUTRITION PRACTICAL

Sub Code: HBFS18L09

L	T	P	C
0	1	4	3

Total no. of Hours: 50

OBJECTIVES:

- Develop skill in field level application of the techniques of assessing nutritional status
- Acquire skill in organizing and implementing community nutrition projects
- Create an insight into the various low cost ingredients available in market and prepare low cost nutritious dishes for vulnerable segments in the community
- Provide experience in working with community groups in field settings
- Sharpen skills and shape attitude towards working in the area of Public Nutrition

Unit - I

Techniques of nutritional assessment

- a) Anthropometry – Height, weight, MUAC, BMI, WHR
- b) Diet survey - 3 day weighment and 24 hour recall



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- c) Clinical assessment
- d) Biochemical assessment

Unit -II

Techniques of growth monitoring. Use and interpretation of Growth Charts.

Unit -III

Planning/ preparation of Nutritious recipes

- a) Low cost recipes b) One dish meal

Unit- IV

Field Study Assessment of nutritional status of a specific demographic group using direct parameters

Unit- V

Field Placement

- a) Formulating messages for Nutrition and Health Education
- b) Development of audio- visual aids for Nutrition and Health Education
- c) Planning, implementation and evaluation of a Nutrition and Health Education programme in the community

Unit -VI

Visit Study of any Community Agency

PROJECT / DISSERTATION

Sub Code: HBFS18P01

L	T	P	C
0	0	0	10

Total no. of Hours: 50

1. Development of research programme
2. Collection of Review
3. Conduct Pilot Study in the field
4. Conduct of work in the lab/ hospital/ community /industry
5. Analysis of Data
6. Writing for the thesis and submission