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UNIVERSITY OF MYSORE

Estd. 1916

VishwavidyanilayaKaryasoudha
Crawford Hall, Mysuru- 570 005

No.AC2(S)/151/2020-21

Dated: 26-10-2021

Notification

Sub:- Syllabus and Examination Pattern of Home Science (UG) with effective from the Academic year 2021-22 as per NEP-2020.

Ref:- 1. Decision of Board of Studies in Home Science (UG) meeting held on 04-10-2021.
2. Decision of the Faculty of Science & Technology Meeting held on 16-10-2021.
3. Decision of the Academic Council meeting held on 22-10-2021.

*****

The Board of studies in Home Science (UG) which met on 04-10-2021 has recommended & approved the syllabus and pattern of Examination of Home Science Programme with effective from the Academic year 2021-22 as per NEP -2020.

The Faculty of Science & Technology and Academic Council at their meetings held on 16-10-2021 and 22-10-2021 respectively have also approved the above said proposal and it is hereby notified.

The syllabus and Examination pattern is annexed herewith and the contents may be downloaded from the University Website i.e., www.uni-mysore.ac.in.

Registrar
Registrar
University of Mysore
Mysore

To:-

1. All the Principal of affiliated Colleges of University of Mysore, Mysore. Those who are running B.Sc Courses.
2. The Registrar (Evaluation), University of Mysore, Mysuru.
3. The Chairman, BOS/DOS, in Home Science, Manasagangothri, Mysore.
4. The Dean, Faculty of Science & Technology, DoS in Psychology, MGM.
5. The Director, Distance Education Programme, Moulya Bhavan, Manasagangotri, Mysuru.
6. The Director, PMEB, Manasagangothri, Mysore.
7. Director, College Development Council , Manasagangothri, Mysore.
8. The Deputy Registrar/Assistant Registrar/Superintendent, Administrative Branch and Examination Branch, University of Mysore, Mysuru.
9. The PA to Vice-Chancellor/ Registrar/ Registrar (Evaluation), University of Mysore, Mysuru.

Annexure- I

Contents of Courses for B.Sc. (Hons.) in Food Science and Nutrition as Major Subject
Model II A

Semester	Course No.	Course category	Theory/ Practical	Credits	Paper Title	Marks	
						S.A.	I.A.
I	FSNT1.1	DSC	Theory	4	Human Physiology	60	40
	FSNP1.1	DSC	Practical	2	Human Physiology	25	25
	FSNT1.2	OE	Theory	3	A) Basics of Food Science B) Basics of Nutrition	60	40
II	FSNT2.1	DSC	Theory	4	Fundamentals of Human Nutrition	60	40
	FSNP2.1	DSC	Practical	2	Fundamentals of Human Nutrition	25	25
	FSNT2.2	OE	Theory	3	A) Healthy Lifestyle B) Culinary Science	60	40
Exit Option with Certificate in Food Science and Nutrition (52 Credits)							
III	FSNT3.1	DSC	Theory	4	Principles of Food Science	60	40
	FSNP3.1	DSC	Practical	2	Principles of Food Science	25	25
	FSNT3.2	OE	Theory	3	A) Food Adulteration B) Common nutritional problems	60	40
IV	FSNT4.1	DSC	Theory	4	Life cycle Nutrition	60	40
	FSNP4.1	DSC	Practical	2	Life cycle Nutrition	25	25
	FSNT4.2	OE	Theory	3	A) Food Safety& Hygiene B) Indian traditional foods	60	40
Exit Option with Diploma (100 Credits)							
V	FSNT5.1	DSC	Theory	3	Principles of Food processing	60	30
	FSNP5.1	DSC	Practical	2	Principles of Food processing	25	15
	FSNT5.2	DSC	Theory	3	Principles of diet therapy	60	30
	FSNP5.2	DSC	Practical	2	Principles of diet therapy	25	25
	FSNT5.3	DSE/VOC	Theory	3	A) Food Additives B) Food and Nutrition Security	60	40
VI	FSNT6.1	DSC	Theory	3	Food Microbiology	60	40
	FSNP6.1	DSC	Practical	2	Food Microbiology	25	25
	FSNT6.2	DSC	Theory	3	Therapeutic Nutrition	60	40
	FSNP6.2	DSC	Practical	2	Therapeutic Nutrition	25	25

	FSNT6.3	DSE/VOC	Theory	3	A) Food Quality Control B) Assessment of Nutritional status	60	40
Exit Option with Bachelor of Science, B.Sc. Degree (144 Credits)							
VII	FSNT7.1	DSC	Theory	3	Food product Development and Sensory Science	60	40
	FSNP7.1	DSC	Practical	2	Food product Development and Sensory Science	25	25
	FSNT7.2	DSC	Theory	3	Nutritional Biochemistry	60	40
	FSN7.2	DSC	Practical	2	Nutritional Biochemistry	25	25
	FSNT7.3	DSC	Theory	4	Micronutrient Metabolism	60	40
	FSNT7.4	DSE/VOC	Theory	3	A. Food Fortification B. Public Health Nutrition	60	40
	FSNT7.5	DSE	Theory	3	Research Methodology	60	40
VIII	FSNT8.1	DSC	Theory	4	Food Laws and Food Safety	60	40
	FSNT8.2	DSC	Theory	4	Advanced Dietetics	60	40
	FSNT8.3	DSC	Theory	3	Sports Nutrition	60	40
	FSNT8.4	DSE	Theory	3	A) Entrepreneurship and Restaurant Startup B) Nutrition during Emergencies	60	40
	FSNT8.5			6 (3+3)	Research Project / Internship OR Any two of the electives A) Functional Properties of Food B) Storage and Handling of Food C) Application of Enzymes in Food Industry D) Nutrition Extension Education	140 60 60	60 40 40
Award of Bachelor of Science Honors, B.Sc. (Hons.) Degree in Food Science and Nutrition							

*In lieu of the research Project, two additional elective papers/ Internship may be offered

Abbreviation for FSNDSCT1.1 /FSNDSCP1.1

FSN – Food Science and Nutrition; DSC – Discipline Core; T – Theory/ P – Practical; 1 – First Semester; .1 – Course 1

B Sc Food Science & Nutrition

Semester 1

Course Title: **FOOD SCIENCE AND NUTRITION / HUMAN PHYSIOLOGY**	
Total Contact Hours: 56+56	Course Credits:4+2
Formative Assessment Marks: 40	Test1+Test2=2Hrs
Summative Assessment Marks: 60	Duration of ESA/Exam: 03Hrs

Course Pre-requisite(s): Students who have passed Pre-University Board of Examination or Equivalent board with science subjects are eligible for the undergraduate degree B.Sc in Food Science and Nutrition.

Course Outcomes (COs):

At the end of the course the student should be able to:

- Gain the basic knowledge of human anatomy and physiology.
- Define the main structures composing human body.
- Explains structure and functions of cells, tissues and organs, systems of the human body
- Relates structure and functions of tissue.
- Provides excellent preparation for careers in the health professions and/or biomedical research.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1 .Gain the basic knowledge of human anatomy and physiology	X											
2. Define the main structures composing human body	X											
3.Explains structure and functions of cells, tissues and organs, systems of the human body	X											
4. Relates structure and functions of tissue.	X											

5. Provides excellent preparation for careers in the health professions and / or biomedical research.		X										

Course Articulation Matrix relates course outcomes of course with the corresponding program outcomes whose attainment is attempted in this course. Mark 'X' in the intersection cell if a course outcome addresses a particular program outcome.

B. Sc Semester 1

Title of the Course: Food Science & Nutrition

Course 1 DSC HUMAN PHYSIOLOGY		**Course 2 OE: A) Basics of Food Science B) Basics of Nutrition**	
Number of Theory Credits	Number of lecture hours/semester	Number of Theory Credits	Number of lecture hours/semester
04	**56**	**03**	**42**

Content of Course 1 DSC I HUMAN PHYSIOLOGY	**(Credits 4 /week Total 56 hrs)**
Unit – 1 Introduction to Human Body	14 hrs
A Basic concepts of Organs, tissue and cell,	4
B Cellular organelles - structure and functions	3
C Musculo- Skeletal System	4
D Sense Organs	3
Unit – 2 Cardiovascular System and Respiratory Systems	14 hrs
A Blood - Composition, blood groups and Functions **B** Structure and Functions of lymph System	4
C Cardiovascular System - Structure and functions of heart, Properties of Cardiac Muscle and Functional Tissues.	3
D Cardiac Cycle, Heart Rate, Cardiac Output, Blood Pressure (Systolic & Diastolic Blood pressure), ECG	4
E Respiratory System - Physiological Anatomy of Respiratory Tract, Mechanism of Respiration, **F** Transport of Respiratory Gases in Blood, Gaseous Exchange in Lungs and tissues	3

Unit – 3 Digestive System and Excretory Systems	14 hrs
A Digestive System- Principal organs of the digestive system: structure & function – Mouth (tongue, Teeth), Esophagus, Stomach, Small Intestine, Large Intestine	5
B. Principal accessory organs: structure & function – Salivary glands, liver, gall bladder, Pancreas	3
C. Excretory System- Structure & Function – Excretory system, Kidney, Nephron	3
D. Urine Formation, Glomerular Filtration Rate (GFR), Composition of Urine.	3
Unit-4. Neuro-Endocrine and Reproductive System	14 hrs
A. Nervous System - Structure and functions of Neuron, Brain	7
B. Central nervous system, peripheral Nervous System,	
C. Endocrine Systems- Structure and Functions - Pituitary, Thyroid and Parathyroid, Adrenals and Gonads	2
D. Endocrine Functions of Pancreas, Heart, Liver, Kidney	3
E. Reproductive System	2

References Books

- Chatterjee C.C (2016), Human Physiology Volume I, Medical Allied Agency, Kolkata
- Chatterjee C.C (2004), Human Physiology Volume II, Medical Allied Agency, Kolkata.
- Sembulingam, K. (2000) Essentials of Medical Physiology, Jaypee Brothers Medical Publishers(P) Ltd., New Delhi
- Chaudhri, K. (1993) Concise Medical Physiology, New Central Book Agency (Parentral) Ltd., Calcutta.
- Kathleen J. W. Wilson, Anne Waugh, Allison Grant. Ross and Wilson Anatomy (2014),
- Physiology in Health and Illness. 12th Edition, Elsevier Publication, New Delhi
- Jain A K (2012) Text Book of Physiology volume 1 and Vol.2, APC publications New Delhi.

Pedagogy

Regular lectures, demonstrations, Exercises on observation and follow up with group Discussions, case studies, ICT enabled teaching and learning experiences in terms of video Lessons and documentary film shows.

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Class test/ Assignments/ Quiz-Assessment-1	20
Class test/ Assignments/ Quiz -Assessment-2	20
Total	40

Content of Course 1 DSC I PRACTICALS - HUMAN PHYSIOLOGY	(Credits 2 / 4 hrs week)
1. Microscope and its uses 2. Histology of epithelial, connective, muscular and nervous tissues. 3. Enumeration of RBC and WBC count 4. Determination of pulse rate in resting condition and after exercise (30 beats /10 beats method) 5. Determination of blood pressure by Sphygmomanometer (Auscultator method). 6. Determination of Bleeding Time (BT) and Coagulation Time (CT). 7. Detection of Blood group (Slide method). 9. Measurement of Hemoglobin level (Sahli`s or Drabkin method). 10. Urine Analysis – Albumin & Glucose Test	**Total 56 hrs**

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Class test / Assignments / - Assessment-1	10
Class test / Assignments / - Assessment-2	10
Project/ visit report	05
Total	25

Course 2 OE A) Basics of Food Science

Basics of Food Science

Objectives

- Its scope is to help and gain knowledge on Food groups and food commodities,
- To Understand the nutritional composition of foods

Learning Outcomes

- It helps to know different types of food commodities and their importance
- To learn the macro and micronutrients content of food commodities

Course Articulation Matrix: Mapping of Course Outcomes (Cos) with Program Outcomes (Pos 1-12)

Course Outcomes (Cos) / Program Outcomes (Pos)	1	2	3	4	5	6	7	8	9	10	11	12
1. Gain knowledge on Food groups and food commodities		X										
2. Understand the nutritional composition of foods			X									

Content of Course 2 OE A-Basics of Food Science	Credits 3 / week, Total 42 hrs
Unit – 1 Introduction, Food groups, Food Pyramid, My Plate	04 hrs
Unit – 2 Cereals, millets & Legumes – type, composition and uses	12 hrs
Unit -3 Fruits, vegetables and Oil seeds – type, composition and uses	12 hrs
Unit – 4 a) Animal foods- Milk, Meat, Fish, Egg, and poultry b) Refined Products – Sugar, Jaggery, Fats and Oils	14 hrs

Suggested Reading

1. Srilakshmi. B. Food Science. New age international Pvt. Ltd. New Delhi, 2001.
2. Shakuntala Manay and Shadakshara Swamy M. foods – facts and principles, 1998.

Course 2 OE B) Basics of Nutrition

Objectives

- Its scope is to help and gain knowledge of Nutrients

Learning Outcomes

- It helps to know about the use of different nutrients and their functions

Course Articulation Matrix: Mapping of Course Outcomes (Cos) with Program Outcomes (Pos 1-12)

Course Outcomes (Cos) / Program Outcomes (Pos)	1	2	3	4	5	6	7	8	9	10	11	12
1. Gain knowledge on aims and objectives of nutrition education		X										
2. Understand the concept of Nutrition problems and intervention in India								X				

Content of Course 2 OE B-Basics of Nutrition	Credits 3 / week, Total 42 hrs
Unit – 1 Introduction to nutrition a. History of nutrition b. Relationship of food and health	6 hrs
Unit – 2 Nutrients – macro and micronutrients – functions, food sources and deficiency disorders.	20 hrs
Unit – 3 Nutrient requirements and desirable diets	16 hrs

Suggested Reading

1. Srilakshmi. B. Food Science. New age international Pvt. Ltd. New Delhi, 2001.
2. Shakuntala Manay and Shadakshara Swamy M. foods – facts and principles, 1998.

Pedagogy

Regular lectures, demonstrations, Exercises on observation and follow up with group Discussions, ICT enabled teaching and learning experiences in terms of video Lessons and documentary film shows

Course Title: **FOOD SCIENCE AND NUTRITION- Course 2.OE-A) Basics of Food Science and B) Basics of Nutrition**	
Total Contact Hours: 42	Course Credits:3
Formative Assessment Marks: 40	Test1+ Test 2=2Hrs
Summative Assessment Marks: 60	Duration of ESA/Exam: 03Hrs

B Sc Food Science & Nutrition

Semester 2

Course 3: FUNDAMENTALS OF HUMAN NUTRITION (credits 4+2)

Course Outcomes (Cos):

1. Gain knowledge in basic terminology, aspects of nutrition & functions of food in healthy life sustenance
2. Understand function of nutrients, dietary sources, consequences of deficiency and excess
3. Understand the food composition and concept of energy balance
4. Equip with knowledge and understanding on importance of water
5. Understand the nutritional management of deficiency disorders.

Course Articulation Matrix: Mapping of Course Outcomes (Cos) with Program Outcomes (Pos 1-12)

Course Outcomes (Cos) / Program Outcomes (Pos)	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1. Gain knowledge in basic terminology, aspects of nutrition & functions of food in healthy life sustenance	X											
2. Understand function of nutrients, dietary sources, consequences of deficiency and excess	X											
3. Understand the food composition and concept of energy balance					X							
4. Understand the nutritional management of deficiency disorders									X			

Title of the Course: Food Science & Nutrition

Course 3: FUNDAMENTALS OF HUMAN NUTRITION		**Course 4 .OE A) HEALTHY LIFE STYLE B) CULINARY SCIENCE**	
Number of Theory Credits	Number of lecture hours/semester	Number of Theory Credits	Number of lecture hours/semester
04	**56**	**03**	**42**

Content of Course 3 FUNDAMENTALS OF HUMAN NUTRITION (Credits 4/ Week, Total-56hrs)	
Unit – 1 Definition of food, nutrition, health	12 hrs
A. Introduction : Food & its relation to health, Objectives in the study of nutrition	2
B. Energy –Definition, forms of energy, units of measurement, physiological fuel vales of energy, determination of energy value of foods	4
C. BMR – definition, Determination and factors affecting, Factors affecting energy requirements, diet induced thermogenesis (SDA)	4
D. Water: Functions, requirements, sources	2
Unit – 2 Macro Nutrients	14 hrs
A. **:**Protein –Classification, functions, Digestion& absorption (in brief), RDA, sources and deficiencies	4
B. Carbohydrate – Classification, functions, Digestion & absorption (in brief), RDA, sources and deficiencies	5
C. Fat-Classification, functions, Digestion & absorption (in brief), RDA, sources and deficiencies	3
D. Dietary fiber- types and functions	2
Unit – 3Micronutrient – Vitamins and Minerals	16 hrs
A. Fat-soluble Vitamins (A, D, E & K)- Function, RDA, sources and deficiency and excess.	4
B. Water soluble vitamins: Thiamin, Riboflavin, Niacin, B12, Folic acid, Biotin and Vitamin C: functions, RDA, food sources, deficiencies and excess.	4
C. Macro minerals- Calcium, Phosphorus and magnesium, Sodium, Potassium, Chlorine: Functions, absorption, RDA, sources and deficiencies.	5
D. Micro Minerals- Iron, Zinc, Fluorine and Iodine: function, absorption, RDA, sources and deficiency.	3
Unit – 4 Nutritional management	12 hrs
A. Definition, importance of balanced diet, RDA for various nutrients - age, gender, physiological state, food group system, factors affecting meal planning,	4
B. Nutritional deficiency diseases –Causes, symptoms, treatment, Protein Energy Malnutrition (PEM), Vitamin A Deficiency (VAD), Iron Deficiency Anemia (IDA), Iodine Deficiency Disorders (IDD), Zinc Deficiency,	5

Flurosis C. National Nutrition Policy and Program – Integrated Child Development Services (ICDS) Scheme, Mid-day Meal Program (MDMP), National programs for prevention of Anemia, Vitamin A deficiency, Iodine Deficiency Disorders. D. National and International agencies in uplifting the nutritional status –WHO, UNICEF, CARE, ICMR, ICAR, CSIR, CFTRI. Various nutrition related welfare program, ICDS, SLP, MOM, and others (in brief).	3 2

Course 3: **FOOD SCIENCE AND NUTRITION /FUNDAMENTALS OF HUMAN NUTRITION**	
Total Contact Hours: 56+56	Course Credits:4+2
Formative Assessment Marks: 40	Test1+Test2=2Hrs
Summative Assessment Marks: 60	Duration of ESA/Exam: 03Hrs

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Class test /Seminar /Assignments-Assessment 1	20
Class test /Seminar /Assignments-Assessment 2	20
Total	40

PRACTICAL-FUNDAMENTALS OF HUMAN NUTRITION (2 credits / 4hrs / week=56 hrs/semester)

Content of Course 3 DSC II PRACTICALS – FUNDAMENTALS OF HUMAN NUTRITION	**(Credits 2 / 4 hrs week)**
1. Weights and measures –Household and standard measures used in food science laboratory. 2. Calculation of mean nutritive value of foods 3. Standardization of recipes. 4. Recommended Dietary Allowances/Nutritive values of foods. 5. Enhancing the traditional recipes with specific nutrients (protein, carbohydrate, fat, vitamin A, vitamin C, calcium and iron).	**Total -56 Hrs**

Formative Assessment	
Assessment Occasion/ type	**Weightage in Marks**
Class test /Seminar /Assignments-Assessment 1	10
Class test /Seminar /Assignments-Assessment 2	10
Project/ Vist report	05
Total	25

Books for reference:

- Food & Nutrition - Dr. M. Swaminathan
- Food facts & principles – Manay & Shadakshara Swamy
- Food science – Sumathi Mudambi
- Fundamentals of food and nutrition, Mudambi & Rajgopal 4th edition 2001
- Principles of Food Science by Borgstrom and Macmillon
- Food Science by Potter & Hotchkiss Judith E. Brown, Nutrition Now, 3 rd edition. Wads worth, Thomas learning, 10 Davis drive Belmont C A 94002-3098 USA, 2002
- Barbara A. Bowmaw and Robert M. Russell, Nutrition, Eighth Edition, ILSI press, Washington, DC, 2001.
- C. Gopalan, B.V. Ramasastri and S.G. Balasubramaniam, Nutritive value of Indian foods, NIN, ICMR, Hyderabad, 500007, INDIA, 2007.
- Mehtab S Bamji, N Pralhad Rao, Vinod Reddy, Text Book of Human Nutrition, oxford IBH publishing Co. Pvt. Ltd., New Delhi, Calcutta.
- Sir Stanley Davidson, R Passmore, Human Nutrition and Dietetics. The English language book society and Churchill hivingstome 1969.
- Kathleen Mahan L., Sylnia Escott-Stump, Krause's food, nutrition and diet therapy (11th edition). Saunders Company, London.
- Passmore R. and Davidson S. (1986) Human nutrition and Dietetics. Liming stone publishers.
- Shil's M.E., Alfon J.A., Shike M (1994), Modern nutrition in health and diseases eighth edition.
- William S.R., Nutrition and Diet Therapy fourth edition C.V. Mos Company

Pedagogy

• Regular class teaching, seminars and assignments and Record works related to their Practical works, field visits.

Course 4. Open Elective – A) HEALTHY LIFE STYLE

Course Outcomes (COs):

1. Gain knowledge on healthy life styles
2. Understand the relationship between different nutrients and their importance
3. Understand the personal hygiene; environmental Hygiene;

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
1.Gain knowledge on Healthy		X										

Life styles												
2. Understand the relationship between different nutrients and their importance	X											
3.Understand the personal hygiene; environmental Hygiene						X						

Content of Course 4 OE HEALTHY LIFE STYLE (Credits 3 / week, Total-42 Hrs)	
Unit – 1 EATING FOR HEALTHY LIFE	10 hrs
A. Definition of food, Nutrition, Health and fitness **B.** Interrelationship between Nutrition and health, Significance of balanced diet **C.** Concept of a desirable diet for nutrition, health and fitness **D.** Impacts of unhealthy foods on health	
Unit – 2 NUTRITION AND PHYSICAL FITNESS **A.** Exercise and fitness-Definition, benefits, components and indicators of fitness **B.** Nutrient requirement during Exercise- Micro nutrients, macro nutrients and Fluid balance, body adaptation **C.** Approaches to the management of fitness and health in weight management	12 hrs
Unit-3:**MENTAL HEALTH**	10 hr
A. Stress management and its challenges B. Addiction, drug abuse and alcoholism C. Healthy sleep D. Balanced life style	
Unit-4:**ALTERNATIVE SYSTEMS FOR HEALTH AND FITNESS**	10 hrs
A. Yoga and meditation, Reiki, B. Ayurveda, Herbal remedies, homeopathy. C. Accupunture, acupressure, Aroma therapy D. Hypnotherapy, psychotherapy, spiritual heal	

Books for reference:

- Food & Nutrition - Dr. M. Swaminathan
- Srilaksmi. B. Nutrition Science. New age international Pvt. Ltd. New Delhi, 2001.

- Robinson C. H. Basic Nutrition and Diet therapy, McMillan Pub.co, New York, 1989
- Food facts & principles – Manay & Shadakshara Swamy
- Food science – Sumathi Mudambi
- Fundamentals of food and nutrition, Mudambi & Rajgopal 4th edition 2001
- Barbara A. Bowmaw and Robert M. Russell, Nutrition, Eighth Edition, ILSI press, Washington, DC, 2001.
- C. Gopalan, B.V. Ramasastri and S.G. Balasubramaniam, Nutritive value of Indian foods, NIN, ICMR, Hyderabad, 500007, INDIA, 2007.
- 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.
- Chadha R and Mathur P eds. Nutrition: A Lifecycle Approach. Orient Blackswan, New Delhi. 2015

Course 4.OE- B) Culinary Science (credits 3/42hrs)

Course Outcomes (COs):

1. Gain knowledge on aims and objectives of cooking
2. Understand the Conservation of nutrients and their importance to life
3. Understand the personal hygiene; environmental Hygiene; food storage and causes of contamination

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1. Gain knowledge on aims and objectives of cooking		X										
2. Understand the Conservation of nutrients and their importance to life	X											

Content of Course 4.OE- B) **Culinary Science (credits 3 /** 42 hrs)	
Unit – 1 Introduction to cookery	14 hrs
A. Culinary history, aims and objectives of cooking- Origin of modern cookery; Continental cuisine: Indian cuisine	2
B. Pre- processing of foods- Techniques used in pre-preparation, advantages and disadvantages	2

C. Methods of cooking- Methods of heat transfer; Classification; Moist heat methods; Dry heat methods; fat as cooking media, Conservation of nutrients **D.** Personal Hygiene; Environmental Hygiene; Food storage and causes of contamination; Food borne illnesses; Food poisoning; Garbage disposal	5 5
Unit – 2 Food groups and their nutritional value	14 hrs
A. Cereals, pulses, fats and oils **B.** Fruits and Vegetables **C.** Animal foods and its products **D.** Spices and condiments	5 3 3 3
Unit – 3 Role of ingredients in cookery and methods of food service	14 hrs
A. Types & Uses: Fats and Oils, Salt, Raising Agents, Thickening Agents, Herbs, Flour, Rice, Cereals, Pulses, Milk and Milk Products **B.** Uses of sugar and eggs in cookery- bakery and confectionery **C.** Preserved products- jam, jelly, juice, pickle, sauce, ketchup etc **D.** Dining services methods, techniques & styles	5 3 2 4

REFERENCE BOOKS:-

- Food & Beverage Service – R. Singaravelavan - Oxford University Press
- Food & Beverage Service - Dennis Lillicrap, John Cousins – Bookpower
- Food & Beverage – F & B Simplified – Vara Prasad & R. Gopi Krishna – Pearson
- Food & Beverage Service - Vijay Dhawan
- The Steward - Peter Dias
- The Waiter - John Fuller & A.J. Currie – Shroff Publishers
- Parvinder S Bali, International Cuisine and food production management, 2012
- Avantina Sharma, text book of food science and technology, CBS publication, 2019

Pedagogy

Regular lectures, demonstrations, Exercises on observation and follow up with group Discussions, ICT enabled teaching and learning experiences in terms of video Lessons and documentary film shows

Course Title: **FOOD SCIENCE AND NUTRITION- Course 4.OE-**A) Healthy lifestyles and B) **Culinary Science**	
Total Contact Hours: 42	Course Credits:3
Formative Assessment Marks: 40	Test1+Test2=2Hrs
Summative Assessment Marks: 60	Duration of ESA/Exam: 03Hrs

ANNEXURE - II

Structure of B.A / B.Sc (Honours) in Family Resource Management

(Model II A for B A/B Sc. If needed Model II C for B. A)

Model Curriculum
Contents of Courses for BA / B Sc Family Resource Management
Model IIA/ C

Semester	Course No.	Course Category	Theory/ Practical	Credits	Paper Title	Marks	
						S.A	I.A
1.	HSFRMT1.1	DSC-A1	Theory	4	Introduction to Resource Management	60	40
	HSFRMP1.1		Practical	2	Introduction to Resource Management	25	25
	HSFRM1.2	OEC-1	Theory	3	Basics of art and design	60	40
2.	HSFRMT2.1	DSC-A2	Theory	4	Family finance and Consumer Economics	60	40
	HSFRMP2.1		Practical	2	Family finance and Consumer Economics	25	25
	HSFRMT2.2	OEC-2		3	Fundamentals of Resource Management	60	40
Exit Option with Certificate in Family Resource Management (52 Credits)							
3.	HSFRMT3.1	DSC-A3	Theory	4	Architectural Drafting	60	40
	HSFRMP3.1		Practical	2	Architectural Drafting	25	25
	HSFRMT3.2	OEC-3		3	Consumer Economics	60	40
4.	HSFRMT4.1	DSC-A4	Theory	4	Art of Entertainment and Etiquette	60	40
	HSFRMP4.1		Practical	2	Art of Entertainment and Etiquette	25	25
	HSFRMT4.2	OEC-4		3	Front office Management and house keeping	60	40
Exit Option with Diploma in Family Resource Management (100 Credits)							
5	HSFRMT5.1	DSC-A5	Theory	3	Interior Decoration	60	40
	HSRMP5.1		Practical	2	Interior Decoration	25	25
	HSFRMT5.2	DSC-A6	Theory	3	Fundamentals of CAD	60	40
	HSRMP5.2		Practical	2	Fundamentals of CAD	25	25
	HSFRMT5.3	DSEAE1	Theory	3	Advertising and labelling information	60	40
	HSFRMT5.4	VOC1	Theory	3	Energy conservation	60	40
6.	HSFRMT6.1	DSC-A7	Theory	3	Hospitality Management	60	40
	HSRMP6.1		Practical	2	Hospitality Management	25	25

	HSFRMT6.2	DSC-A8	Theory	3	Event Management	60	40
	HSRMP6.2		Practical	2	Event Management	25	25
	HSFRMT6.3	DSEAE2	Theory	3	Product development and packaging	60	40
	HSFRMT6.4	VOC2	Theory	3	Waste Management	60	40
Exit Option with Bachelor of Science Degree in Family Resource Management (144 Credits)							
7.	HSFRMT7.1	DSC-A9	Theory	3	Housing and Building Services	60	40
	HSRMP7.1		Practical	2	Housing and Building Services	25	25
	HSFRMT7.2	DSC-A10	Theory	3	Ergonomics	60	40
	HSRMP7.2		Practical	2	Ergonomics	25	25
	HSFRMT7.3	DSC-A11	Theory	3	Interior Product Design	60	40
	HSFRMT7.4	DSEAE3	Theory	3	Anthropometry and ergonomic assessment tool	60	40
	HSFRMT7.5			2	Internship	25	25
	HSFRMT7.6		Theory	3	Research Methodology	60	40
8.	HSFRMT8.1	DSC-A12	Theory	3	Designing and Furnishing for Life Space	60	40
	HSRMP8.1		Practical	2	Designing and Furnishing for Life Space	25	25
	HSFRMT8.2	DSC-A13	Theory	3	Human Resource Management	60	40
	HSRMP8.3	DSC-A14	Theory	3	Sustainable Buildings	60	40
	HSFRMT8.4	DSEAE4	Theory	3	Visual Merchandizing	60	40
	HSFRMT8.5			6	Research Project or A. Building materials and components B. Marketing Research	120	80
Exit Option with Bachelor of Science Honors in Family Resource Management (185 Credits)							

*In lieu of the research Project, two additional elective papers/ Internship may be offered.

Curriculum Structure for the Undergraduate Degree Program B.A/B.Sc.

Family Resource Management

Year of implementation: 2021-22

Name of the Degree Program: B.A / B.Sc. Honors. **Discipline/Subject:**

Family Resource Management as one Discipline A **Program Articulation**

Matrix:

This matrix lists only the core courses. Core courses are essential to earn the degree in that discipline/subject. They include courses such as theory, laboratory, project, internships etc. Elective courses may be listed separately

Semester	Title /Name of the course	Program outcomes that the course addresses (not more than 3 per course)	Pre-requisite course(s)	Pedagogy	Assessment
1	DSC A 1 Introduction to Family Resource Management	PO –4 PO -5 PO –7	12+/Equivalent Pass	• Demonstration • Lecture	Formative and Summative Assessment
	OEC 1 Basics of Art and Design	PO –5 PO -5 PO –7	12+/Equivalent Pass	• Demonstration • Lecture	Formative and Summative Assessment
2	DSC A2 Family Finance and Consumer Economics	PO –4 PO –6 PO –8	12+/Equivalent Pass	• Lecture • FieldVisit	Formative and Summative Assessment
	OEC 2 Fundamentals of Resource Management	PO –2 PO –9 PO – 10	12+/Equivalent Pass	• Lecture • FieldVisit	Formative and Summative Assessment

B.A/B.Sc. HOME SCIENCE

SEMESTER 1

Course Title: **Introduction to Resource Management (**DSC-A1)	
Total Contact Hours: 60 Hrs.	Course Credits: 6
Formative Assessment Marks: 40 marks	Duration of ESA / Exam: 3 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 60 Marks

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%

Course Outcomes (COs):

1. Explain the need for and importance of studying the concepts ofmanagement
2. Identify the components of ResourcesManagement.
3. Describe the characteristics and needs of resources at different stages in the Family lifecycle
4. Explain the broad theoretical perspectives and frameworks ofFamily Resources ofmanagement
5. Identify understand the importance of management in everydaylife
6. Application of Management process to resources- particularly time, and energy

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Summarize and critically discuss and understand the concept and components of Resource management		**X**		**X**	**X**						**X**	
Able to Describe the characteristics and needs of resources at different stages in the Family life cycle								**X**	**X**		**X**	
Understand the broad theoretical perspectives and frameworks of Family Resources of management								**X**		**X**		**X**
Understand the importance of management in everyday life							**X**	**X**		**X**		
Application of Management process to resources- particularly time, and energy				**X**			**X**	**X**				

B.A/B.Sc. Family Resource Management

SEMESTER 1

Title: Introduction to Resource Management

Course : DSC-A1	
Number of Theory Credits	**Number of lecture hours/semester**
4	**60**

CONTENT	**60 Hrs.**
Unit–1 Introduction to Family Resources of Management	**16hrs**
Chapter No. 1: **Resource Management:** Introduction and Classification of Resources. Characteristics of resources, Factors affecting the use of resources	6hrs
Chapter No. 2: **Concepts of management:** Definition and importance of management. Management Process, Planning – Types and Importance. Controlling – steps in controlling, Evaluation – Types and Importance, Styles in management.	10 hrs
Unit – 2 Decision Making in Management	**16hrs**
Chapter No. 3: Decision making in management: Definition and importance of decision making, Types of decision, Process of decision making, Methods of resolving conflicts,	8hrs
Chapter No. 4: Motivating factors in decision making – Values: meaning, Types of values. Parker values Goals: Meaning, Types of goals Standards: Meaning, Types of standards Inter relationship between Values, Goals and Standards	8hrs
Unit – 3 Management of Resources: Time and Energy	**16hrs**
Chapter No. 5. Time management: Importance of time, Tools in time management, Time management process.	8hrs
ChapterNo.6. Energy Management: Importance of energy, Types of efforts required for various activities, Fatigue – Types, methods of over- coming fatigue,	8hrs

Unit -4 Work simplification	12hrs
Chapter No. 7: Work simplification – Definition, Techniques, Mundell's classification	6hrs
Chapter No. 8: Ergonomics – Definition, scope, and objectives, Domains, Man, Machine and Environment (MME).	6hrs

Formative Assessment = Theory 100 marks + Practical 50 marks	
Assessment Occasion / type	**Weightage in Marks**
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Total	**60 marks + 40 marks = 100 marks**

Practical Course:2 Credits **60Hrs**

1. Decision Making –Identify a problem and solve it using steps in decision making
2. Plan a time and activity chart for 3 days – Evaluate and make suggestions for improvement
3. Energy Management
   a. Using factorial method calculate energy expenditure and physical activity level
   b. Calculate energy cost of selected activities using heart rate monitor
4. Work simplification techniques: Pathway chart, process chart
5. Application of management process for different activities

Formative Assessment = 25 marks + Summative Assessment = 25 Marks = 50 Marks	
Assessment Occasion / type	Weightage in Marks
Test 1	10
Test 2	10
Project	05
Total	25 marks + 25 marks = 50 marks

REFERENCES

1. Nickell and Dorsey – Management of Family Living (2002) 4Th Edition, CBS Publishers and Distributers, New Delhi.
2. Shashi k, Gupta, Neeti Gupta, (2004), Management Concepts and Strategies, Kalyani Publishers, New Delhi.
3. Sushma Gupta and Anita Aggrawal, (2005), Text Book of Family Resource Management – Hygiene and physiology, Kalyani Publishers, New Delhi.
4. Trupathi.P. C, Reddy. (2006), Principles of Management, Tata McGraw Hills Publishing company Limited, New Delhi.
5. Verghese. M.A, Saha, P.N. Atreya. N, (2000), Ergonomics of Women at Works, Allied Publishers, Mumbai.

Course Title: Basics of Art and Design (OE-1)	
Total Contact Hours: 45 Hrs.	Course Credits: 3
Formative Assessment Marks: 40 marks	Duration of ESA / Exam: 3 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 60 Marks

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%

Course Outcomes (COs):

At the end of the course the student should be able to:

1. Understand the design fundamentals in interiors.
2. Gain knowledge on application of elements of art and principles of design in Interiors.
3. Analyze the traditional and contemporary furniture designs and furnishing styles
4. Evaluate case studies on global market trends and techniques in the area of design.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program

Outcomes (POs 1-12)

Title: Basics of Art and Design	**Course : OE-1**
Number of Theory Credits	**Number of lecture hours/semester**
3	**45**

CONTENT	**45 Hrs**
Unit – 1 DESIGN Fundamentals	
Chapter No.1: Objectives of aesthetic planning – Beauty, Expressiveness, Functionalism, significance of good taste. Definition of Design, Characteristics and Types of Design – Structural and Decorative Design: Naturalistic, Stylized, Geometric and Abstract. **Chapter No. 2:** Elements of Art – Line, size, Shape, Form, Texture, Pattern, Space, Colour and Light. Principles of Design**:** Proportion, Balance, Rhythm, Emphasis, and Harmony.	**5 Hrs** **7 Hrs**
Unit – 2 Interior decoration	**15 Hrs**
Chapter No. 3: Fundamentals of Colour: Prang Colour Wheel, Dimensions of Colour, Colour Harmonies, Planning colour schemes for different areas. **Chapter No. 4: Decoration -** Flower arrangement, Rangoli and Floral Decorations and Accessories	**8 Hrs** **7Hrs**
Unit – 3 FURNITURE DESIGN 18 Hrs **Chapter No. 5: Window Treatments -** Types of Windows, Window treatment and Mechanics of Window Treatment. **Chapter No. 6:** History of Furniture Design, Types of Furniture, Factors to be considered in selecting furniture. Principles of furniture arrangement	**9Hrs** **9Hrs**

References

1**.** Ball, Victoria. K (2001), The Art of Interior Design, McMillan and Co, New York.

2. Bhatt. P.D, Goenka.S (2003). Foundation of Art Design, Lakshmi Book Depot, Mumbai.

3. GopalKrishna, K.R, (2006), Fundamentals of Drawing, Subhas Stores Book Corner, Bangalore.

4. Pratap Rao M, (2002) Interior Design, Principles and Practices, Standard Publishers and Distributors

5. John Pile and Judith (2013). A History of Interior Design, Wiley Publishers

6. Penny Spark (2009). Designing the Modern Interior, Berg Publishers

7. Choudhary, A.K.R. (2000). Modern Concepts of Colour and Appearance, Oxford and IBH Publishing Co. Pvt. Ltd. New Delhi.

8. Hilliard, E. (2000). Brilliant Colour at Home, Kyle Cathie Ltd, London

Semester 2

Course Title: Family Finance and Consumer Economics (DSC-A2)	
Total Contact Hours: 60 Hrs	**Course Credits: 6**
Formative Assessment Marks: 30	**Marks Duration of ESA / Exam: 3 Hrs**
	Summative Assessment Marks:60 Marks

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%
Course Outcomes (COs):

- Understand the need for and importance of studying the concepts of Income
- Identify the role of saving and Credit in financial Management.
- Impart Knowledge of Insurance and Investment.
- An insight into Consumer problems and Protection Identify understand the
- importance of management in everyday life
- Application of consumer information and education

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Title: Family Finance and Consumer Economics

Course : DSC-A2
Number of Theory Credits: 4 Number of lecture hours/semester: 60

CONTENT	60
Unit – 1 Income Management	16
Chapter No. 1: **Income** –Definition, Concepts, Sources, Types –Money Income, Real Income and Psychic Income. Means of supplementing Income. **Chapter No. 2**: **Budget:** Terminology –Budget, Budgeting, Budgetary control. Importance of Budgeting, Types of Budget – Balanced, Surplus and deficit, Steps in budgeting, Levels of involvements in Budgeting Process.	6 10
Unit – 2 Savings and Investments	16
Chapter No. 3: Savings and Credit – Need for saving, Saving Institute-Bank, Post office, UTI and Insurance - Definition and importance of Insurance. Principles of insurance, types of Insurance-Life and health. Credit –Source, types, credit instruments, use and abuse of credit, cost of credit, credit and debit cards **Chapter No. 4:** Investment-Principles of investment. Types of Investments-Shares, Debentures, bonds and Mutual funds.	8 8
Unit – 3 Consumer Problems and Protection	16
Chapter No. 5. Consumer- Definition, Concept, Consumer buying behaviour, Types of Consumer Problem **Chapter No. 6.** Consumer Protection - Government and Private. Consumer redressal, functioning of consumer courts.	8 8

Unit -4 Consumer information and education	12
Chapter No. 7: Consumer Education-, Consumer education and awareness Consumer rights and Responsibilities. **Chapter No. 8**: Consumer Aids – label, brand, trademark and other certification marks.	6 6

Formative Assessment = Theory 100 marks + Practical 50 marks	
Assessment Occasion / type	**Weightage in Marks**
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Total	**60 marks + 40 marks = 100 marks**

Practical: 2 Credits 60 Hrs

1. Plan a Budget for different Income groups. Prepare a detailed budget for one income group
2. Visit and prepare the Report on the different Saving Institutes - Bank, Post office, UTI and Life Insurance
3. Banking Process: Procedure for opening savings account Writing Cheques, Withdrawal, Demand draft, NEFT
4. Illustrate different types of consumer aids and Design a labels for consumer product
5. Outreach programs on consumer awareness.

Formative Assessment = 25 marks + Summative Assessment = 25 Marks = 50 Marks	
Assessment Occasion / type	Weightage in Marks
Test 1	10
Test 2	10
Project	05
Total	25 marks + 25 marks = 50 marks

REFERENCES:

1. Nickell and Dorsey – Management of Family Living (2002) 4Th edition CBS Publishers and Distributers, New Delhi.

2. Goel Sandeep –Financial Services (2012) PhL Learning Pvt Ltd., New Delhi.
3. Kothari Rajesh (2010) Financial services in India Sage Publication New Delhi
4. Mishra M.N –Insurance, Principles and Practices (1981) S Chand nd Co, New Delhi.
5. .Murthy D.K, Venugopal –Indian Financial System (2006) I K International Publishing House Pvt Ltd., New Delhi.
6. Nickell and Dorsey – Management of Family Living (2002) 4Th edition CBS Publishers and Distributers, New Delhi.
7. Stillman J Richard – Guide to personal finance (1984) Prentice Hall International Inc, New Jersey.

Course Title: Fundamentals of Resource Management (OE -2)	
Total Contact Hours: 45 Hrs	Course Credits: 3
Formative Assessment Marks: 40 marks	Duration of ESA / Exam: 3 Hrs
	Summative Assessment Marks: 60 marks

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%

Course Outcomes (COs):

1. Discuss the need for and importance of studying the concepts of management
2. Describe the characteristics and needs of resources at different stages in the Family life cycle
3. Explain the broad theoretical perspectives and frameworks of Family Resources of management
4. Identify understand the importance of management in everyday life
5. Application of Management process to resources- particularly time, and energy

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Title: Fundamentals of Resource Management

Course : OEC-2

Number of Theory Credits: 3 Number of lecture hours/semester: 45

CONTENT	**45 Hrs**
Unit – 1 Fundamentals of resource Management	**12Hrs**
Chapter No. 1: **Concepts of management:** Definition and importance of management. Management Process, Planning – Types and Importance. Controlling – steps in controlling, Evaluation – Types and Importance, Styles in management **Chapter No. 2**: **Resource Management:** Introduction and Classification of Resources. Characteristics of resources, Factors affecting the use of resources	**7** **5**
Unit – 2 Motivating factors and Decision making process	**15 Hrs**

Chapter No. 3: : Motivating factors in decision making – Values: meaning, Types of values. Parker values Goals: Meaning, Types of goals Standards: Meaning, Types of standards Inter relationship between Values, Goals and Standards **Chapter No. 4**: Decision making in management: Definition and importance of decision making, Types of decision, Process of decision making, Methods of resolving conflicts	**9** **6**
Unit – 3 Management of resources: Time and Energy	**18 Hrs**
Chapter No. 5: Time management: Importance of time, Tools in time management, Time management process. **Chapter No. 6:** Energy Management: Importance of energy, Types of efforts required for various activities, Fatigue – Types, methods of overcoming fatigue, Work simplification – Definition, Techniques, Mundell's classification,	**8** **10**

Formative Assessment = Th 100 marks
Assessment Occasion / type Weightage in Marks
Test 1 15
Test 2 15
Assignment + Project 5 + 5
Total 60 marks + 40 marks = 100 marks

REFERENCES

1. Sushma Gupta and Anita Aggrawal, (2005), Text Book of Family Resource Management – Hygiene and physiology, Kalyani Publishers, New Delhi.
2. Shashi k, Gupta, Neeti Gupta, (2004), Management Concepts and Strategies, Kalyani Publishers, New Delhi.
3. Trupathi.P.C, Reddy. (2006), Principles of Management, Tata McGraw Hills Publishing company Limited, New Delhi.
4. Verghese.M.A, Saha, P.N.Atreya.N,(2000), Ergonomics of Women at Works, Allied Publishers, Mumbai
5. Nickell and Dorsey – Management of Family Living (2002) 4Th edition CBS Publishers and Distributers, New Delhi.