KANNUR UNIVERSITY

(Abstract)

B Sc Home Science Programme-Scheme, Syllabus and Pattern of Question Papers of Core and Generic Elective Course under Choice Based Credit and Semester System (Outcome Based Education System-OBE) in Affiliated colleges with effect from 2019 Admission-Implemented-Orders issued.

Academic Branch

No.Acad.C2/12932/2019 Civil Station P.O, Dated 20/06/ 2019

Read:- 1. U.O.No.Acad.C2/429/2017 dated 10-10-2017

2. The Minutes of the Meeting of the Curriculum Restructuring Committee held on 28-12-2018.
3. U.O No. Acad.C2/429/2017 Vol.II dated 03-06-2019
4. The Minutes of the Meeting of the Board of Studies in Home Science (Cd) held on 13-06-2019
5. Syllabus of B.Sc.Home Science, Submitted by the Chairperson, Board of Studies in Home Science (Cd) dated 19-06-2019

ORDER

1. A Curriculum Restructuring Committee was constituted in the University vide the paper read (1) above to co-ordinate the activities of the Syllabus Revision of UG programmes in Affiliated colleges of the University.

2. The meeting of the Members of the Curriculum Restructuring Committee and the Chairpersons of different Boards of Studies held, vide the paper read (2) above, proposed the different phases of Syllabus Revision processes such as conducting the meeting of various Boards of Studies , Workshops and discussions.

3. The Revised Regulation for UG programmes in Affiliated colleges under Choice Based Credit and Semester System(in OBE-Outcome Based Education System) was implemented with effect from 2019 Admission as per paper read (3) above.

4. Subsequently, as per paper read (4) above, the Board of Studies in Home Science (Cd) finalized the Scheme, Syllabus & Pattern of Question Paper for Core & Generic Elective Course of B.Sc.Home Science Programme to be implemented with effect from 2019 Admission.

5. As per paper read (5) above, the Chairperson, Board of Studies in Home Science (Cd) submitted the finalized copy of the Scheme, Syllabus & Pattern of Question Papers of B.Sc.Home Science Programme for implementation with effect from 2019 Admission.

6. The Vice Chancellor after considering the matter in detail and in exercise of the powers of the Academic Council conferred under Section 11(1) of Kannur University Act 1996 and all other enabling provisions read together with accorded sanction to implement the Scheme, Syllabus & Pattern of Question Paper(Core/Generic Elective Course) of B.Sc.Home Science programme under Choice Based Credit and Semester System(in OBE-Outcome Based Education System) in the Affiliated colleges under the University with effect from 2019 Admission, subject to reporting before the Academic Council.

7. The Scheme, Syllabus & Pattern of Question Paper of B.Sc.Home Science Programme are uploaded in the University website (www.kannuruniversity.ac.in)

Orders are issued accordingly.

Sd/-
DEPUTY REGISTRAR (ACADEMIC)
For REGISTRAR

To

The Principals of Colleges offering B.Sc. Home Science programme

Copy to:-
1. The Examination Branch (through PA to CE)
2. The Chairperson, Board of Studies in Home Science (Cd)
3. PS to VC/PA to PVC/PA to Registrar
4. DR/AR-I, Academic
5. The Computer Programmer (for uploading in the website)
6. SF/DF/FC

KANNUR UNIVERSITY
CIVIL STATION P.O.
KANNUR
Pin-670 002
THAVAKKARA

Forwarded/By Order

SECTION OFFICER

KANNUR UNIVERSITY
BOARD OF STUDIES, HOME SCIENCE (Cd)

Scheme & Syllabus for Home Science UG Programme Core Courses and Generic Elective Courses

CHOICE BASED CREDIT AND SEMESTER SYSTEM - OUTCOME BASED EDUCATION (CBCSS-OBE)

(2019 ADMISSION ONWARDS)

KANNUR UNIVERSITY

VISION AND MISSION STATEMENTS

Vision:

To establish a teaching, residential and affiliating University and to provide equitable and just access to quality higher education involving the generation, dissemination and a critical application of knowledge with special focus on the development of higher education in Kasargode and Kannur Revenue Districts and the Manandavady Taluk of Wayanad Revenue District.

Mission:

- To produce and disseminate new knowledge and to find novel avenues for application of such knowledge.
- To adopt critical pedagogic practices which uphold scientific temper, the uncompromised spirit of enquiry and the right to dissent.
- To uphold democratic, multicultural, secular, environmental and gender sensitive values as the foundational principles of higher educationand to cater to the modern notions of equity, social justice and merit in all educational endeavors.
- To affiliate colleges and other institutions of higher learning and to monitor academic, ethical, administrative and infrastructural standards in such institutions.
- To build stronger community networks based on the values and principles of higher education and to ensure the region's intellectual integration with national vision and international standards.
- To associate with the local self-governing bodies and other statutory as well as non-governmental organizations for continuing education and also for building public awareness on important social, cultural and other policy issues.

KANNUR UNIVERSITY

PROGRAMME OUTCOMES (PO)

PO 1. Critical Thinking:

1.1. Acquire the ability to apply the basic tenets of logic and science to thoughts, actions and interventions.

1.2. Develop the ability to chart out a progressive direction for actions and interventions by learning to recognize the presence of hegemonic ideology within certain dominant notions.

1.3 Develop self-critical abilities and also the ability to view positions, problems and social issues from plural perspectives.

PO 2. Effective Citizenship:

2.1. Learn to participate in nation building by adhering to the principles of sovereignty of the nation, socialism, secularism, democracy and the values that guide a republic.

2.2. Develop and practice gender sensitive attitudes, environmental awareness, empathetic social awareness about various kinds of marginalisation and the ability to understand and resist various kinds of discriminations.

2.3. Internalise certain highlights of the nation's and region's history. Especially of the freedom movement, the renaissance within native societies and the project of modernisation of the post-colonial society.

PO 3. Effective Communication:

3.1. Acquire the ability to speak, write, read and listen clearly in person and through electronic media in both English and in one Modern Indian Language

3.2. Learn to articulate, analyse, synthesise, and evaluate ideas and situations in a well-informed manner.

3.3. Generate hypotheses and articulate assent or dissent by employing both reason and creative thinking.

PO 4. Interdisciplinarity:

4.1. Perceive knowledge as an organic, comprehensive, interrelated and integrated faculty of the human mind.

4.2. Understand the issues of environmental contexts and sustainable development as a basic interdisciplinary concern of all disciplines.

4.3. Develop aesthetic, social, humanistic and artistic sensibilities for problem solving and evolving a comprehensive perspective.

KANNUR UNIVERSITY

PROGRAMME SPECIFIC OUTCOME (PSO)

HOME SCIENCE PROGRAMME

PSO 1: Understand the basic concepts of Food Science, Nutrition, Food preservation, Microbiology, Clinical Nutrition and Dietetics.

PSO 2: Skill development for the management of family reources, housing and interior decoration.

PSO 3: Aquisition of knowledge regarding mental and physical development of human beings through the learning of Human Physiology, Child Development and General Psychology.

PSO 4: Understand the basic concepts of Textile Science, Apparal Designing and Fashion Designing.

PSO 5: Understand the role and practices of Mass Communication in Extension and the importance of Home Science extension.

CREDIT DISTRIBUTION FOR B.Sc. HOME SCIENCE PROGRAMME

Courses	Semester	Credits	Marks
Core Course	I, II, III, IV, V, VI	56	875
First Complementary Elective Course	I, II, III, IV	12	200
Second Complementary Elective Course	I, II, III, IV	12	200
Common Course - English	I, II, III, IV	22	300
Common Course - Additional Language	I, II, III, IV	16	200
Generic Elective Course	V	2	25
Total		**120**	**1800**

PREFACE

With the rapid change in the International and National scenario, the curriculum has been updated from time to time in an outcome based manner; however, the urgent need to update the UG curriculum seems inevitable. Home science is the subject which touch the entire part of the human life, from home to industries. On the basis of these facts the UG curricula need to be re-looked and refurbished to withstand the competition from other upcoming avenues of jobs as well as changing needs of society and job opportunities. As a discipline, Home Science integrates the ingredients of the sciences, social sciences and technology to facilitate the study to enhance the quality of human life. Its approach is therefore fundamentally interdisciplinary.

Home Scientists promote capacity building of individuals and communities for social and economic empowerment. They will be able to train community, women and youth from various strata of society for entrepreneurship. Home Science offers an in-depth knowledge on; Food and Nutrition, Human Development and Childhood Studies, Resource Management, Housing and Interior Designing, Communication and Extension Education, Textile Science and Fashion Designing and General Psychology.

The restructured curriculum is being submitted to the academic community with a view to create interest among students to pursue their studies in Home science and opening a window to the possibilities in this subject.

Aims and Objectives

Higher education learning in Home Science subjects provides students the opportunity to sharpen their capacities with a sense of social responsibility. The broad objective of studying Home Science in higher level is to enable the learners to improve the quality of their personal and professional life and contribute towards the betterment of the family and the community. Home Science curriculum has the power to empower the learners with all these necessary skills. In order to fulfill the above mentioned agenda we present the curriculum with the following specific objectives: To

- recognize their own strengths and weaknesses and work on them to achieve their maximum potential, and to develop in the learner an understanding of the need for healthy environment and skills to create and maintain it;
- develop in them the ability to take care of the nutritional needs of the family members and ensure good food handling practices and to impart in the learner the basic knowledge related to textiles used in the home, family resource management, interior decoration and develop skills for their optimum utilization;
- make learners aware of the rights and responsibilities of consumers and instill in them wise purchasing habits and to foster in learners understanding of human developmental process and use it to strengthen interpersonal relationships;
- orientated them with the educational and vocational scope of Home Science and the need to practice/develop entrepreneurship; and to develop sensitivity towards some of the major psychological and health problems of the community and the programs of the government to overcome these; and to
- provide Nutritionists, Fashion Designers, Interior Designers, Pshycologists, Academicians and Entreprenerurs to the soceity for manitaining its healthy and wealthy development.

Dr. Sr. Jessy Varghese
Chairperson, Board of Studies
Home Science (Cd)
Kannur University

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KANNUR UNIVERSITY

WORK AND CREDIT DISTRIBUTION STATEMENT

B.Sc. HOME SCIENCE PROGRAMME

(Common English: 22, Additional Common:16, Core:56,
First Complementary Elective: 12, Second Complementary Elective:12, Generic Elective:2)

Semester	Course Title	Credits	Hours per week	Total Credits	Total Hours
I	Common Course - English 1	4	5	17	25
	Common Course - English 2	3	4		
	Common Course - Additional Lang 1	4	4		
	Core course - Theory 1B01HSC	2	2		
	Core course – Practical 2B03HSC*	-	2		
	First Complementary Elective - Theory 1	2	2		
	First Complementary Elective - Practical**	-	2		
	Second Complementary Elective Theory 1	2	2		
	Second Complementary Elective - Practical**	-	2		
II	Common Course - English 3	4	5	19	25
	Common Course - English 4	3	4		
	Common Course - Additional Lang 2	4	4		
	Core course - Theory 2B02HSC	2	2		
	Core course – Practical 2B03HSC	2	2		
	First Complementary Elective - Theory 2	2	2		
	First Complementary Elective - Practical**	-	2		
	Second Complementary Elective - Theory 2	2	2		
	Second Complementary Elective – Practical**	-	2		
III	Common Course - English 5	4	5	15	25
	Common Course - Additional Lang 3	4	5		
	Core course - Theory 3B04HSC	3	3		
	Core course – Practical 4B06HSC*	-	2		
	First Complementary Elective – Theory 3	2	3		
	First Complementary Elective - Practical**	-	2		
	Second Complementary Elective – Theory 3	2	3		
	Second Complementary Elective – Practical**	-	2		

IV	Common Course - English 6	4	5	25	25
	Common Course - Additional Lang 4	4	5		
	Core course - Theory 4B05HSC	3	3		
	Core course – Practical 4B06HSC	2	2		
	First Complementary Elective – Theory 4	2	3		
	First Complementary Elective - Practical	4	2		
	Second Complementary Elective – Theory 4	2	3		
	Second Complementary Elective – Practical	4	2		
V	Core course - Theory 5B07HSC	5	5	19	25
	Core course - Theory 5B08HSC	4	4		
	Core course - Theory 5B09HSC	4	4		
	Core course - Theory 5B10HSC	4	4		
	Core course – Practical 6B15HSC*	-	3		
	Core course – Practical 6B16HSC*	-	3		
	Generic Elective Course	2	2		
VI	Core course - Theory 6B11HSC	5	5	25	25
	Core course - Theory 6B12HSC	4	4		
	Core course - Theory 6B13HSC	4	4		
	Core course - Theory 6B14HSC	4	4		
	Core course – Practical 6B15HSC	3	3		
	Core course – Practical 6B16HSC	3	3		
	Core course - Project Work 6B17HSC	2	2		
Total				**120**	**150**

*End Semester Evaluation of Core courses will be conducted in even semesters.
** End Semester Evaluation of Complementary elective courses will be conducted in IV Semester.

First Complementary Elective : CHEMISTRY

Second Complementary Elective : ZOOLOGY

KANNUR UNIVERSITY

WORK AND CREDIT STATEMENT

HOME SCIENCE CORE COURSES

Course Code	Course Title	Semester	Hours Per Week	Credit	Exam Hrs
1B01HSC	Human Nutrition	1	2	2	3
2B03HSC	Nutrition and Food Preservation – Practical I (Part 1)	1	2	-	-
2B02HSC	Food Preservation and Microbiology	2	2	2	3
2B03HSC	Nutrition and Food Preservation - Practical I (Part 2)	2	2	2	3
3B04HSC	Interior Decoration	3	3	3	3
4B06HSC	Interior Decoration and Family Resource Management - Practical II (Part 1)	3	2	-	-
4B05HSC	Family Resource Management	4	3	3	3
4B06HSC	Interior Decoration and Family Resource Management - Practical II (Part 2)	4	2	2	3
5B07HSC	Child Development	5	5	5	3
5B08HSC	Human Physiology	5	4	4	3
5B09HSC	Food Science and Nutrition	5	4	4	3
5B10HSC	Textile Science and Apparel Designing – I	5	4	4	3
6B15HSC	Food Science, Nutrition and Dietetics – Practical III (Part 1)	5	3	-	-
6B16HSC	Textile Science and Apparel Designing – Practical IV (Part 1)	5	3	-	-
6B11HSC	Extension Education	6	5	5	3
6B12HSC	General Psychology	6	4	4	3
6B13HSC	Clinical Nutrition and Dietetics	6	4	4	3
6B14HSC	Textile Science and Apparel Designing– II	6	4	4	3
6B15HSC	Food Science, Nutrition and Dietetics – Practical III (Part 2)	6	3	3	3
6B16HSC	Textile Science and Apparel Designing - Practical IV (Part 2)	6	3	3	3
6B17HSC	Project Work	6	2	2	-
Total Credits				**56**	

KANNUR UNIVERSITY

WORK AND CREDIT STATEMENT

HOME SCIENCE GENERIC ELECTIVE COURSES

(FOR STUDENTS OF OTHER DEPARTMENTS)

SN	Course Code	Title	Semester	Hours Per Week	Credit	Exam Hrs
1	5D01HSC	Applied Counselling	5	2	2	2
or						
2	5D02HSC	Nutrition for Wellness	5	2	2	2
or						
3	5D03HSC	Food Processing and Preservation	5	2	2	2
or						
4	5D04HSC	Traditional Embroideries in India	5	2	2	2
or						
5	5D05HSC	Parenting in Early Childhood	5	2	2	2

COURSE EVALUATION

The evaluation scheme for each course shall contain two parts

a) Continuous Evaluation (CE)

b) End Semester Evaluation (ESE)

20% weightage shall be given to the Continuous Evaluation(CE) and 80% weightage shall be for the End Semester Evaluation (ESE)

ASSESSMENT	WEIGHTAGE
Continuous Evaluation (Internal)	1
End Semester Evaluation (External)	4

Mark Distribution of Core & Generic Elective Courses

Continuous Evaluation (CE) and End Semester Evaluation (ESE)

Sem.	Course Code	Core & Open Courses	Theory/ practical	Mark Distribution			Exam hrs
				CE	ESE	Total	
I	1B01HSC	Human Nutrition	Theory	10	40	50	3
II	2B02HSC	Food Preservation and Microbiology	Theory	10	40	50	3
II	2B03HSC	Nutrition and Food Preservation – Practical I	Practical	10	40	50	3
III	3B04HSC	Interior Decoration	Theory	10	40	50	3
IV	4B05HSC	Family Resource Management	Theory	10	40	50	3
IV	5B06HSC	Interior Decoration and Family Resource Management - Practical II	Practical	10	40	50	3
V	5B07HSC	Child Development	Theory	10	40	50	3
V	5B08HSC	Human Physiology	Theory	10	40	50	3
V	5B09HSC	Food Science and Nutrition	Theory	10	40	50	3
V	5B10HSC	Textile Science and Apparel Designing – I	Theory	10	40	50	3
VI	6B11HSC	Extension Education	Theory	10	40	50	3
VI	6B12HSC	General Psychology	Theory	10	40	50	3
VI	6B13HSC	Clinical Nutrition and Dietetics	Theory	10	40	50	3
VI	6B14HSC	Textile Science and Apparel Designing -II	Theory	10	40	50	3
VI	6B15HSC	Practical III- Food Science, Nutrition and Dietetics	Practical	15	60	75	3
VI	6B16HSC	Practical IV - Textile Science and Apparel Designing.	Practical	15	60	75	3
VI	6B17HSC	Project	Project	5	20	25	2
V	5D01/2/3/4 /5HSC	Generic Elective Course	Theory	5	20	25	2

CONTINUOUS EVALUATION (CE)

Continuous Evaluation of Home Science core courses and Generic elective course shall be based on different components. The components with percentage of marks and the marks allotted are as follows:

Theory Courses (CE)

SN	Components	% of Marks allotted	Marks Allotted	
			Core courses	Generic elective course
1	Assignment/ Seminar/Viva voce	50	5	2.5
2	Test paper	50	5	2.5
Total		**100**	**10**	**5**

Practical Courses (CE)

SN	Components	% of Marks allotted	Marks Allotted	
			Practical I & II	Practical III & IV
1	Practical Test	20	2	3
2	Record	30	3	4.5
3	Lab Involvement	50	5	7.5
Total		**100**	**10**	**15**

Project (CE)

SN	Components	% of Marks allotted	Marks Allotted
1	Punctuality	20	1
2	Use of Data	20	1
3	Scheme/Organization of Report	30	1.5
4	Viva-Voce	30	1.5
Total		**100**	**5**

Assignment/ Seminar/ Viva-Voce

For each theory course, each student is required to submit an assignment or to present a seminar or to attend a viva-voce based on any topic related to the course concerned. Assignment/ seminar/viva-voce shall be evaluated on the basis of student's performance.

Written Tests

For each theory course there shall be a minimum of two written tests and the average mark of the two tests is to be considered for internal mark. Each test paper may have duration of minimum one hour.

END SEMESTER EVALUATION – (ESE)

Details regarding the End Semester Evaluation of Home Science core courses and Generic elective course are given below:

THEORY COURSES (ESE)

Pattern of Questions - Core courses

Part A -	**Short answer**	(6 questions x Mark 1each = 6)
	• ***Answer all questions***	(*6 questions x Mark 1each = 6*)
Part B -	**Short Essay**	(8 questions x Marks 2 each =16)
	• ***Answer any 6 questions***	*(6 questions x Marks 2 each=12)*
Part C -	**Essay**	(6 questions x Marks 3 each =18)
	• ***Answer any 4 questions***	*(4 questions x Marks 3 each=12)*
Part D -	**Long Essay**	(4 questions x Marks 5 each =20)
	• ***Answer any 2 questions***	*(2 questions x Marks 5 each=10)*

- **Total marks including choice - 60**
- ***Maximum marks of the course - 40***

Pattern of Questions - Generic elective course

Part A -	**Short answer**	(6 questions x Mark 1 each= 6)
	• ***Answer all questions***	(*6 questions x Mark 1 each = 6*)
Part B -	**Short Essay**	(6 questions x Marks 2 each =12)
	• ***Answer any 4 questions***	*(4 questions x Marks 2 each=8)*
Part C -	**Essay**	(2 questions x Marks 6 each =12)
	• ***Answer any 1 question***	*(1 question x Marks 6 each=6)*

- **Total marks including choice - 30**
- ***Maximum marks of the course - 20***

PRACTICAL COURSES (ESE)

Practical I – 2B03HSC: Nutrition and Food Preservation (ESE)

- *Maximum Marks* - *40 Marks*
- *Duration of examination* - *3 Hrs.*
- Mark Distribution for Practical Examination

SN	Components	Marks
1	**Food Analysis** Principle - 2 Procedure - 4 Calculation - 5 True value - 3 Result – 1	15
	or	
	Estimation of Nutrients Minerals - 4 Carbohydrates - 6 Proteins - 4 Result – 1	15
2	Food Preservation	15
3	Practical Record	10
Grand Total		**40**

Practical II– 4B06HSC: Interior Decoration and Family Resource Management (ESE)

- *Maximum Marks* - *40 Marks*
- *Duration of examination* - *3 Hrs*
- Mark Distribution for Practical Examination

SN	Components	Marks
1	Interior Decoration	15
2	Family Resource Management	10
3	Practical Record and Report of Residence Course	15
Total		**40**

Practical III– 6B15HSC: Food Science, Nutrition and Dietetics (ESE)

- *Maximum Marks* - *60 Marks*
- *Duration of examination* - *3 Hrs.*
- Mark Distribution for Practical Examination

SN	Components	Marks
1	**Food Science**	15
2	**Diet Planning and Preparation** Menu planning **-** 10 R. D.A / Discussion - 3 Calculation of Nutritive value (2 nutrients of 2 food stuffs) - 2 Preparation - 20 (Taste-8, Adequacy-5, Presentation-4, Appearance-3)	35
3	Practical Record	10
	Grand Total	**60**

Practical IV- 6B16HSC: Textile Science and Apparel Designing(ESE)

- *Maximum Marks* - *60 Marks*
- *Duration of examination* - *3 Hrs*
- Mark Distribution for Practical Examination

SN	Components	Marks
1	Fibre Identification	4
2	Weave Identification	4
3	Fashion Sketching	6
4	Garment Construction Draft -10 Construction-15 Embroidery-5	30
5	Practical Garments submitted	6
6	Practical Record	10
	Total	**60**

6B17HSC: Project (ESE)

The project evaluation with viva-voce shall be done by the external examiner based on the assessment of following components. This will be done along with the Practical Examination.

SN	Components	% of Marks allotted	Marks Allotted
1	• Relevance of the Topic • Statement of Objectives • Methodology • Reference/ Bibliography	20	4
2	• Presentation • Quality of Analysis/Use of Statistical Tools • Findings and Recommendations	30	6
3	Viva-Voce	50	10
Total		**100**	**20**

SYLLABUS & QUESTION PATTERN

HOME SCIENCE CORE COURSES

Theory – 1

HUMAN NUTRITION

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
I	1B01HSC	2	36	2	3

COURSE OUTCOME

CO 1: To enable the students to understand Nutrition science and its relevance.

CO 2: To enable the students to obtain an insight into the chemistry of major nutrients and physiologically important compounds.

CO 3: To enable the students to understand the importance and functions of nutrients.

CO 4:. To enable the students to know the deficiency diseases.

Module	Content	Hrs
I **Introduction to Nutrition Science**	**Definitions –** Nutrition - Nutrients, Health (WHO) Nutritional Status – Good and poor nutritional status. Classification of nutrients. Malnutrition – different forms. Nutritional classification of foods- balanced diet – food pyramid, food plate - basic four food groups (ICMR).	4
II **Carbohydrates and Energy value of foods**	**Carbohydrates:** classification, functions, digestion, absorption and metabolism, deficiency - PEM, dietary sources. Dietary fibre: types, Physiological functions of dietary fibre, Potential health benefits, Sources and requirement. **Calorific value of foods**: definition of energy, units, components of energy expenditure. Basal metabolic rate (BMR): factors influencing, measurement. Thermic effect of food.	9
III **Proteins and Lipids**	**Proteins**: classification, functions, digestion, absorption and metabolism, sources, deficiency, toxicity. **Lipids**: classification, EFA, PUFA, functions, digestion absorption and metabolism, sources, deficiency. Role of fat in the diet, visible and invisible fat.	6
IV **Vitamins (fat soluble and water soluble)**	**Vitamins A, D, E and K:** Functions, Deficiency and Sources. **Vitamin C and B vitamins:** Functions – Deficiency (Thiamin, Riboflavin, Niacin), Food source.	6
V **Macro minerals, micro minerals and**	**Macrominerals:** Calcium, phosphorus, magnesium, sodium, potassium – functions, factors influencing mineral absorption, Calcium homeostasis, Sources, deficiency **Microminerals**: Iron, iodine, fluorine and zinc: an overview. – Food sources, Functions, Deficiency,	11

Water	Requirements. **Body Water:** Functions, distributions and compartments, Factors influencing water distribution, Regulation of water balance, Requirements of water, Disturbances in balance, Dehydration, Oedema.	

Books for Study

1. Srilakshmi, B, Nutrition Science, 3rd edn, 2008, New Age International (p) Ltd. Publishers, New Delhi.

Books for Reference

1. Bamji M.S., Krishnaswamy, K., and Brahmam G.N.V., Textbook of Human Nutrition, 3rd edn. 2009, Oxford and IBH Publishing Co.Pvt.Ltd., New Delhi.
2. Park, K.,Park's Textbook of Preventive and Social Medicine, 18th edn 2005, M/s Banarsidas Bhanot Publishers, Jabalpur, India.
3. Swaminathan, M. Principles of Nutrition and Dietetics, 2001, The Bangalore Printing and Pub, Co, Ltd, Bangalore.
4. Gopalan, B.V. Ramasastri and S.C. Balasubramanian (2007) Nutritive value of Indian Foods. NIN, ICMR Hyderabad 500 007.

Module wise distribution of Marks

Module	Marks
1	6
2	15
3	12
4	12
5	15

Pattern of Questions

Part A - **Short answer** (6 questions x Mark 1each = 6)
- ***Answer all questions*** (*6 questions x Mark 1each = 6*)

Part B - **Short Essay** (8 questions x Marks 2 each =16)
- ***Answer any 6 questions*** *(6 questions x Marks 2 each=12)*

Part C - **Essay** (6 questions x Marks 3 each =18)
- ***Answer any 4 questions*** *(4 questions x Marks 3 each=12)*

Part D - **Long Essay** (4 questions x Marks 5 each =20)
- ***Answer any 2 questions*** *(2 questions x Marks 5 each=10)*

- **Total marks including choice - 60**
- ***Maximum marks of the course - 40***

Practical - I (Part-1)

NUTRITION AND FOOD PRESERVATION*

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
I	2B03 HSC	2	36	-	-

COURSE OUTCOME

CO 1: To enable the students for learning by doing the qualitative tests for nutrients

CO 2: To enable the students for doing the quantittatve measurements of Vitanin C and Calcium in food stuffs

Module	Content	Hrs.
I	Qualitative tests for carbohydrates	15
II	Qualitative tests for protein, calcium, phosphorous and Iron	8
III	Quantitative tests for a. Vitamin C in food stuffs b. Calcium in food	13

*A record of the entire practical should be maintained. Practical examination and the valuation (internal and external) of practical record shall be done in semester 2, core course 2B03 HSC.

Theory - 2

FOOD PRESERVATION AND MICROBIOLOGY

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
II	2B02 HSC	2	36	2	3

COURSE OUTCOME

CO 1: To know the basics of preservation and processing technology.

CO 2: To impart knowledge regarding the physical and chemical principles in food processing and ways of quality control, waste disposal and sanitation in food industries.

CO 2: To understand the economic importance of microorganisms.

CO 3: To understand the principles of various methods used in the prevention and control of microorganisms.

Module	Content	Hrs.
I **Food Preservation**	**Introduction** to food preservation, Importance of food preservation. Aims, principles and methods of food preservation. ➢ Preservation by high temperature: Principles, Pasteurisation, Canning. Spoilage of canned foods, Advantages and disadvantages. ➢ Preservation by low temperature: Principles, chilling and freezing, Advantages and disadvantages. ➢ Preservation by dehydration: Principles, sun drying, mechanical drying, freeze drying, osmotic drying and other methods, Advantages and disadvantages. ➢ Preservation by osmotic pressure (salt and sugar): Principles, Methods, Advantages and disadvantages. ➢ Preservation by irradiation: Principles, Application of irradiation, Effect of radiation on foods.	10
II **Food Additives, Food Adulteration and Food Laws**	Food additives commonly used in food industries. Adulterants in common foods – detection, prevention. FPO, ISI, AgMark, ISO, Food Safety and Standards Act, Mark for vegetarian and non vegetarian food. HACCP, GRAS	9
III **Introduction to Food Microbiology**	Basic concepts - classification of microorganisms in brief. Factors affecting growth of microorganisms – intrinsic and extrinsic factors. Contamination of food through soil, water, air and during handling and processing. Sterilization and disinfection.	5
IV **Food Spoilage and Poisoning**	Microbial spoilage of foods: meat, milk, fruits and vegetables. Causes of food spoilage, Microorganisms in food spoilage, bacteria, yeast and moulds. Food borne illness and infections: Types, causes and symptoms. Microorganisms causing food poisoning, symptoms and prevention, Mycotoxins- toxic effect prevention.	8
V **Food Fermentation and Beneficial Organisms**	Principles, methods, Fermented dairy, vegetable and meat products. Advantages and disadvantages. Probiotics, Antimicrobial compounds. Bacteriocins and their applications.	4

Books for Study

1. Srilakshmi B. 2001. *Food Science*. New Age International.
2. Manay N.S and Shadaksharaswamy M, Foods, Facts and Principles, New Age International, New Delhi.
3. Frazier WC & Westhoff DC. 1991. *Food Microbiology*. 3 rd Ed. Tata McGraw Hill.

Books for Reference

1. Desrosier NW & Desrosier JN. 1977. *The Technology of Food Preservation*. AVI Publ.

2. Frank AP. 1987. *Modern Processing, Packaging and Distribution System for Foods*. AVI Van nonstand Reinhold Co.
3. McWilliams M. 1993. *Foods - Experimental Perspectives*. Macmillan.
4. Potty VH & Mulky MJ. 1993. *Food Processing*. Oxford & IBH.
5. Swaminathan MS. 1993. *Food Science and Experimental Foods*. Ganesh & Co.
6. Bibek Ray.1996. *Fundamentals of Food Microbiology*. CRC Press.
7. George J Banwart. 1989. Basic Food Microbiology. AVI.
8. James M Jay. 1987. Modern Food Microbiology. CBS.
9. Peppler HJ & Perlman D.1979. *Microbial Technology*. 2 nd Ed. Academic Press.

Module wise distribution of Marks

Module	Marks
1	12
2	14
3	12
4	14
5	8

Pattern of Questions

Part A - **Short answer** (6 questions x Mark 1each = 6)
- ***Answer all questions*** (*6 questions x Mark 1each = 6*)

Part B - **Short Essay** (8 questions x Marks 2 each =16)
- ***Answer any 6 questions*** *(6 questions x Marks 2 each=12)*

Part C - **Essay** (6 questions x Marks 3 each =18)
- ***Answer any 4 questions*** *(4 questions x Marks 3 each=12)*

Part D - **Long Essay** (4 questions x Marks 5 each =20)
- ***Answer any 2 questions*** *(2 questions x Marks 5 each=10)*

- **Total marks including choice - 60**
- ***Maximum marks of the course - 40***

Practical - I (Part 2)

NUTRITION AND FOOD PRESERVATION

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
II	2B03 HSC	2	36	2	3

COURSE OUTCOME

CO 1: To enable the students to understand the food preservation by drying

CO 2: To enable the students to prepare fruit beverages, squash, jam jelly etc.

CO 3:. To enable the students to develop skills in the preparation of pickles, wine etc.

Module	Content	Hrs.
I	Preservation by drying	10
II	Preparation of fruit beverages RTS, Squash	6
III	Preparation of jam and jelly	6
IV	Preparation of pickle	6
V	Preparation of fermented products – wine	8

*A record of the entire practical should be maintained and it shall be evaluated internally and externally.

Theory - 3

Core Course III : INTERIOR DECORATION

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
III	3B04 HSC	3	54	3	3

COURSE OUTCOME

CO 1: To identify the elements and principles of design.

CO 2: To determine the application of colour and light in interior decoration.

CO 3: To state the role of accessories, furniture and furnishings in interior decoration.

CO 4: To explain the aspects of housing and interior-exterior space organisation.

Module	Content	Hrs.
Unit I **Introduction to Interior Design**	Design: definition, types, requirements of a good structural and decorative design. – Importance of Good Taste. – Elements of design: line, form, shape, texture, colour, pattern, light and space. – Principles of design: proportion, balance, rhythm, emphasis, harmony.	8

Unit II **Colour and lighting in Interiors**	Qualities of colour. – Prang colour system. – Colour harmonies or schemes for different rooms. – Use and effects of colour in interiors. Sources, functions and types of lighting. – Lighting fixtures and styles.	10
Unit III **Furniture and Furnishings**	Furniture: functions, selection and arrangement in interiors. – Materials used in furniture making. Furnishings: functions & types. – Criteria for selection of soft furnishings. – Window: functions and parts of casement window. – Window treatments: hard and soft. – Curtain styles: traditional and modern. – Rugs and carpets: selection, care and maintenance.	12
Unit IV **Accessories**	Types, selection, placement and role of accessories in interiors – Flower arrangement: Principles, different styles and basic shapes, steps in making flower arrangement, Dry flower arrangement and drying techniques.	10
Unit V **Housing and interior-exterior space organisation**	Housing: functions. - Selection of building sites. – Factors to be considered in planning a house. – Merits and demerits of renting and owning a house. Space requirement for various activities in various rooms. – Principles of space planning, space saving techniques. – Kitchen: types, working areas, work triangle. – Modular kitchen. Indoor gardening: selection, care and maintenance of indoor plants. Landscaping: objectives. – Types: formal and informal.	14

Books for Study:

1. Premlatha Mullick - Text Book of Home Science, Kalyani Publishers, Ludhiana.
2. Varghese, M.A., Home Management, New Age International , N. Delhi.
3. Gupta, S.; Garg, N. And Aggarwal, A. (1993): Textbook of Home Management, Hygiene and Physiology, Kalyani Publishers, New Delhi.
4. Agan.T, The House - Its plan and Use.
5. The Educational Planning Group (1994): Home Management- A Textbook of Home Science for Senior students, Arya Publishing House.

Books for Reference:

1. Havanovich Inc. - Alexander M.J., Mercoust Brace (1972) The Art of Interior Design. Mc Millan & Co. New York
2. Ball, Victoria K 1655 (1980) Designing Interior Environment.
3. Deshpande R.S. (1974) Modern Ideal Homes for India, United Book Corporation,
4. Faulkner R and Faulkner S. (1987) Inside Today's Home, Rinehart Publishing Co. New York
5. Moubray A.D and Black D.(1999) Window Treatments, Van Nosterand Reinhold, New York
6. Nielson K.J. (1990) Colour in Interior Design, Mc Graw Hill, New York
7. Pile J.F (1975)Art of Interior Design, Indica publishers, Delhi
8. Khanna G. Carpets for the home, Rizzoli International Publications
9. Architectural Design, Earnest Pickering
10. Francis D.K.Ching, Architecture, Form, Space and Order
11. Shrish Vasant Bapat, Basic Design & Anthropometry

12. Shirish Vasat Bapat, Living Areas – Internal Spaces
13. Halse, Use of Colours in Interiors
14. Francis D.K.Ching , Interior Design Illustrated

Module wise distribution of Marks

Module	Marks
1	8
2	15
3	15
4	10
5	12

Pattern of Questions

Part A - **Short answer** (6 questions x Mark 1each = 6)
- ***Answer all questions*** (*6 questions x Mark 1each = 6*)

Part B - **Short Essay** (8 questions x Marks 2 each =16)
- ***Answer any 6 questions*** *(6 questions x Marks 2 each=12)*

Part C - **Essay** (6 questions x Marks 3 each =18)
- ***Answer any 4 questions*** *(4 questions x Marks 3 each=12)*

Part D - **Long Essay** (4 questions x Marks 5 each =20)
- ***Answer any 2 questions*** *(2 questions x Marks 5 each=10)*

- **Total marks including choice - 60**
- ***Maximum marks of the course - 40***

Practical II (Part 1)

INTERIOR DECORATION AND FAMILY RESOURCE MANAGEMENT

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
III	4B06 HSC	2	36	-	-

COURSE OUTCOME

CO 1: To enable the students to understand the application of elements and principles of design in interior of the house.

CO 2: To enable the students to develop skills in flower arrngements.

CO 3:. To enable the students to gain practical knowledge for various curtain styles

CO 4:. To enable the students to utilize thier skills in creative arts

Module	Content	Hrs.
I **Design and Colour**	Application of various types of design: elements of design and principles of designs. Application of motif in a design suitable for furnishing / accessories. Preparation of Prang colour charts and application of colour schemes in interiors / art objects.	10
II **Flower Arrangement and table settings**	Demonstration of basic shapes in flower arrangement, Drying techniques and dry flower arrangement. Table settings and napkin folding.	8
III **Curtain styles**	Illustration of various curtain styles.	7
IV **Evaluation of Interiors**	Photographic evaluation of two rooms (living room, Dinning room, Bed room, Bath room, Kitchen etc)	6
V **Creative Arts**	Creation of any decorative or functional accessories. Creation of art objects from waste material.	5

*A record of the entire practical should be maintained. Practical examination and the valuation (internal and external) of practical record shall be done in semester 4, core course 4B06 HSC.

Theory - 4

Core Course IV : FAMILY RESOURCE MANAGEMENT

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
IV	4B05 HSC	3	54	3	3

COURSE OUTCOME

CO 1: To identify the concept and steps in the process of management.

CO 2: To determine the types and characteristics of resources.

CO 3: To acquire skills in the management of family resources.

CO 4: To explain the concept of consumer education.

Module	Content	Hrs.
Module I **Basics of Home Management**	Definition of Home management. – Steps in management process: planning, organising, co-ordinating, controlling, evaluation. – Concepts in management: values, goals, standards, attitudes. – Qualities of a good home maker. - Decision making: significance and steps. – Methods of resolving conflicts.	10
Module II **Management of Resources**	Meaning, classification and characteristics of resources. – Factors influencing resource management. Management of Time: significance - steps in making time plan - tools and aids in time management: time norm, time cost, peak load, work curve – Leisure time and its utilization	10
Module III **Management of Money**	Family income: types and sources. – Guidelines in money management. – Family budget: types and steps in making family budget, advantages of budgeting, Engel's law of consumption. – Account keeping- Financial records: types, purpose and advantages – Savings and investments: definition need and benefits of saving, types of savings. – Methods of supplementing household income.	12
Module IV **Management of Energy**	Significance of energy management. – Energy requirement for various household activities – Work curve - Fatigue: types, causative factors and alleviating techniques. – Work simplification: meaning and techniques, Mundel's classes of changes. Body mechanics. Household equipments: selection, use and care of equipments such as cooking stoves, range and ovens, microwave oven, pressure cooker, refrigerator, mixer, vacuum cleaner. – Indigenous equipment: smokeless chulah, hay box cooker, janatha refrigerator, solar cooker and biogas.	12
Module V **Consumer Education**	Aims, need and importance of consumer education. – Consumer problems. - Rights and responsibilities of a consumer. - Consumer Aids. – Consumer Protection Act. – Consumer redressal procedure. - Tips for wise buy-man-ship.	10

Books for Study

1. Nickell P. and Dorsey, J. M. (1986): Management in family living, Wiley Eastern Ltd., New Delhi.
2. Gross, I.H. and Crandall, E. W. & Knoll (1972). Management for modern families, 4th ed. Appleton century crafless, Inc.
3. Premlatha Mullick- Text Book of Home Science, Kalyani Publishers, Ludhiana
4. M.A. Varghese , Home Management, New Age International , N. Delhi.
5. Gupta, S.; Garg, N. And Aggarwal, A. (1993): Textbook of Home Management, Hygiene and Physiology, Kalyani Publishers, New Delhi.
6. The Educational Planning Group (1994): Home Management- A Textbook of Home Science for Senior students, Arya Publishing House.

Books for Reference

1. Anderson, E. (1976). Home appliances servicing, Taraporwala sons & Co. Ltd.Bombay
2. Cascio Wayne, F. (1985), Managing Human Resources, McGraw Hill Book Co, NewYorK
3. Decaon, R. E. Fireoough. R. M. (1981) Family Resource Management principles and applications, Ally & Bacon, Boston.
4. Goel, P.K.& Sarma.K.P.(1996) Environmental Guidelines and standards in India,Jaipur, Techno science.
5. Craic, H.T. and Rush, O.D. (1969): Homes with Charecter, Universal Book Stall, Delhi.
6. Saiyadin Mirza (1988) Human Resource Management : An Approach and Conceptual approach, Tata Mc Graw Hill, New York
7. Wilson P. (1981) Household Equipment Selection and Management, Houghton Miflan Co.Inc.NewYork.
8. Varghese. M.A. et.al (1985) Household Equipment Manual , S.N.D.T. Women's University

Module wise distribution of Marks

Module	Marks
1	8
2	12
3	15
4	15
5	10

Pattern of Questions

Part A - **Short answer** (6 questions x Mark 1each = 6)
- ***Answer all questions*** (*6 questions x Mark 1each = 6*)

Part B - **Short Essay** (8 questions x Marks 2 each =16)
- ***Answer any 6 questions*** *(6 questions x Marks 2 each=12)*

Part C - **Essay** (6 questions x Marks 3 each =18)
- ***Answer any 4 questions*** *(4 questions x Marks 3 each=12)*

Part D - **Long Essay** (4 questions x Marks 5 each =20)
- ***Answer any 2 questions*** *(2 questions x Marks 5 each=10)*

- **Total marks including choice - 60**
- ***Maximum marks of the course - 40***

Practical II (Part 2)

INTERIOR DECORATION AND FAMILY RESOURCE MANAGEMENT

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
IV	4B06 HSC	2	36	2	3

COURSE OUTCOME

CO 1: To enable the students to to manage their time and energy.

CO 2: To enable the students to make family budget for proper money management.

CO 3:. To enable the students to gain practical knowledge forusing various household equipment.

CO 4:. To enable the students to gain knowledge regarding consumer rights and responsibilities.

CO 5:. To enable the students to get practical experience of Family Resource Management through residence stay or event management.

Module	Content	Hrs.
I Management of time and energy	Preparation of time plan for college girl/homemaker and its evaluation. Determination of working height in vertical and horizontal planes.	10
II Management of money	Study of expenditure pattern of your family and preparation of a model family budget.	8
III Household equipment	Study of any one modern household equipment and one indigenous household equipment.	6
IV Consumer Education	Development and evaluation of labels and advertisements for consumer products. Preparation of a consumer complaint for any consumer product.	4
V Residence Course/ Event management	Residence stay for a week, incorporating principles of management Or Planning, organizing, implementing and evaluating a group activity (party / exhibition / tour / any other)	8

* Student shall maintain records of each work, which shall be evaluated internally and externally.

Theory - 5

CHILD DEVELOPMENT

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
V	5B07 HSC	5	90	5	3

COURSE OUTCOME

CO 1: To understand the methods of child study and the areas of development.

CO 2: To understand the pre-natal development and the importance of neonatal period

CO 3: To understans the domains of development from birth to the adolescent period.

CO 4: To understand the importance of early child hood care and education

CO 5: To understand the need and importance of early identification, intervention and stimulation.

Module	Content	Hrs
I Introduction to Child Study & Development	Meaning and significance. – Methods of child study. – Growth and development: definition, principles & factors influencing. – Importance and influence of heredity and environment. – Stages & areas of development. – Developmental delay, at-risk babies, baby friendly hospital: meaning and definition. – Needs and rights of children.	20
II Pre-natal & Neonatal Development	Conception. – Stages, factors influencing and hazards in prenatal development. – Teratogens. – Pregnancy: signs and symptoms, discomforts and complications. – Prenatal care and preparation for the arrival of the baby. – Child birth: stages, types and birth injuries. Neonate: characteristics, abilities, adjustments, reflexes, apgar score. – Care of the new born, immunization.	20
III Domains of Development	Physical & motor, social, emotional, intellectual, language and moral development of children from birth to adolescence.	25
IV Early Childhood Care and Education	Pre-school education: definition, importance, objectives and types of preschools. – Play: values & types of play, selection of toys. – Discipline: Disciplinary techniques and their effects. – Guidelines for inculcating discipline in children. – Habit formation: definition, principles, habits to be cultivated. – Behaviour problems: definition, causes and prevention. – Family and child's personality development.	15
V Challenged Children	Challenged children – definition, classification, general causes and prevention. Early intervention: definition, importance. Early stimulation: definition, importance.	10

Books for Study

1. Suriyakanthi, A.(2009): Child Development, Kavitha Publications, Gandhi Gram, Tamilnadu.
2. Devadas R.P A text book of Child Development and Jaya N. Mac Millan India Ltd. Delhi.
3. Hurlock. E.B. Developmental psychology Tata Mc Graw hill publishing company Ltd. New Delhi.
4. Papaliya and Olds: Human development 9th edition, Mcgraw Hill publication.
5. John S. Santrock: Child Development, Mc.Graw Hill publications.

6. S. K. Mangal: Educating exceptional children – An introduction to Special Education, Prentice Hall publication, New Delhi.
7. Chopra G. (2012): Early detection of disabilities and persons with disabilities in the community, Engage publications, New Delhi.
8. Chopra, G.(2012): Stimulating Development of young children with disabilities at anganwadi ant at home, Engage publications, New Delhi.

Books for Reference

1. Hurlock E. B. Child Development Tata HC Grawshill Publishing Company Ltd.
2. Marshall, J & Stuart, S: Child Development. Heinemann Educational Publishers, Oxford. 2001.
3. Minett, P. (2005): Child Care and Development 5th Edition, John Murray (Publishers) Ltd.
4. Berk, L. (2006): Child Development 8th Ed., CHI Learning Pvt. Ltd.
5. Mangal, S.K. (2007): Educating Exceptional Child, Prentice Hall.

Module wise distribution of Marks

Module	Marks
1	15
2	10
3	15
4	12
5	8

Pattern of Questions

Part A - **Short answer** (6 questions x Mark 1each = 6)
- ***Answer all questions*** (*6 questions x Mark 1each = 6*)

Part B - **Short Essay** (8 questions x Marks 2 each =16)
- ***Answer any 6 questions*** *(6 questions x Marks 2 each=12)*

Part C - **Essay** (6 questions x Marks 3 each =18)
- ***Answer any 4 questions*** *(4 questions x Marks 3 each=12)*

Part D - **Long Essay** (4 questions x Marks 5 each =20)
- ***Answer any 2 questions*** *(2 questions x Marks 5 each=10)*

- **Total marks including choice - 60**
- ***Maximum marks of the course - 40***

Theory - 6

HUMAN PHYSIOLOGY

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
V	5B08 HSC	4	72	4	3

COURSE OUTCOME

CO 1: To understand the basics of human physiology. and blood.

CO 2: To know about human blood, blood groups and its functions.

CO 3: To understand the structure and functioning of different systems of human body.

CO 4: To understand the integrated functions of the various systems of the human body.

Module	Content	Hrs.
I **Introduction to Human Physiology and Blood**	Definition of physiology, Structure and functions of a cell. Composition and functions of blood: Plasma proteins, Haemoglobin, Erythrocytes (RBC), Leucocytes (WBC), platelets or Thrombocytes, Coagulation of blood, Blood Group and erythroblastosis foetalis.	16
II **Cardiovascular System**	Structure of heart. – Special conducting tissues of heart: Properties of cardiac muscles; Cardiac cycle, Heart Sounds, Blood pressure and heart rate, circulations – Systemic and pulmonary, coronary and portal system.	14
III **Respiratory System**	Structure of respiratory system, Mechanism of respiration, Gaseous exchange in lungs and tissues. – Pulmonary volumes and capacities.	14
IV **Digestive System and Excretory System**	Structure of digestive tract. – Digestion and absorption of carbohydrates, fats and proteins. Structure and function of kidney. – Structure of nephron. – Mechanism of urine formation. – Micturition.	16
V **Reproductive System**	Structure and functions of male reproductive organs and female reproductive organs; Menarche, physiology of pregnancy and lactation, menopause.	12

Book for Study

1. Ratan, V. (2004): Handbook of Human Physiology, 7th Edition, Jaypee Brothers Medical Publishers (p) Ltd, New Delhi.
2. Dr.A.K Jain (2014): Human Physiology in Nut shell, 3rd Edition Arya publication Karol Bagh, New Delhi.

Books for Reference

1. Chatterjee, C.C.: Human Physiology Vol I & II., medical Allied Agency, Kolkata.
2. C.N. Chandrasekhar, (2007): Manipal Manual of Physiology CBS publishers and Distributors, New Delhi.
3. Waugh, A. and Grant, A. (2006): Anatomy and Physiology in health and illness, 10th edition, Elsevier Limited, London.

4. Jain, A. K. , Textbook of Physiology, Volume 1, Avichal Publishing Company, New Delhi, 2003.
5. Guyton: Medical Physiology.

Module wise distribution of Marks

Module	Marks
1	13
2	12
3	10
4	15
5	10

Pattern of Questions

Part A - **Short answer** (6 questions x Mark 1each = 6)
- ***Answer all questions*** (*6 questions x Mark 1each = 6*)

Part B - **Short Essay** (8 questions x Marks 2 each =16)
- ***Answer any 6 questions*** *(6 questions x Marks 2 each=12)*

Part C - **Essay** (6 questions x Marks 3 each =18)
- ***Answer any 4 questions*** *(4 questions x Marks 3 each=12)*

Part D - **Long Essay** (4 questions x Marks 5 each =20)
- ***Answer any 2 questions*** *(2 questions x Marks 5 each=10)*

- **Total marks including choice - 60**
- ***Maximum marks of the course - 40***

Theory - 7

FOOD SCIENCE AND NUTRITION

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
V	5B09 HSC	4	72	4	3

COURSE OUTCOME

CO 1: To familiarize with basic areas of Food Science and Nutrition

CO 2: To understand the composition, chemistry of foods and their applications in food Preparations.

CO 3: To study on the plant food sources and their importance in human nutrition

CO 4: To understand the animal food sources and their importance in human nutrition

CO 5: To understand the balanced diet and its importance.

Module	Content	Hrs.
I **Basics of Food Science**	Physico-chemical properties of food. Colloids: properties, crystalloids, food dispersions, emulsions and foams.	4
II **Methods of Cooking**	Food preparation: objectives and methods: moist heat, dry heat and combination methods.	8
III **Study of plant food sources**	I. **Cereals** Major cereals – rice, wheat, ragi. Grain: structure and composition. Starch: composition, effect of heat: gelatinisation, dextrinisation and retrogradation. Cereal cookery: principles, culinary uses. Cereal products. II. **Pulses** Major pulses in India, composition. Antinutritional factors: BOAA, trypsin inhibitors, toxic effects. Processing of pulses: dehulling, milling and germination. Role of pulses in cookery. III. **Fruits and Vegetables** Classification and nutritive value, Major pigments, effect of cooking on pigments and nutrients, Changes in fruits during ripening, Enzymatic and non-enzymatic browning, preventive methods. Antioxidants in fruits and vegetables. IV. **Spices** Commonly used spices, general functions and culinary role. V. **Fats and oils** Fats and oils: difference, properties, processing techniques. Effect of heat and processing on fats. Changes during storage: rancidity, auto oxidation.	22
IV **Study on**	I. **Milk and milk Products** Composition and nutritive value. Milk processing,	20

animal food sources	Classification, Pasteurisation, Homogenisation. Milk products (skim, toned, double toned, condensed milk, curd, cream, butter, ghee, milk powder, khoa, paneer, cheese, ice cream, whey protein). II. **Egg** Structure and nutritive value, Deterioration in egg quality: physical and chemical. Evaluation of egg quality. Culinary role of eggs. III. **Meat and Fish** **Meat:** Structure, composition and nutritive value, post mortem changes. Factors affecting tenderness of meat. **Fish:** Classification, nutritive value, Selection of fish, Spoilage of fish.	
V Balanced diet	Balanced diet Dietary guidelines for Indians. Formulation of balanced diet for different age groups and sex. Daily food guide, factors to be considered for different age groups.	18

Books for Study

1. Srilakshmi B (2007), Food Science, New Age International (P) Ltd, New Delhi.
2. Manay N.S and Shadaksharaswamy M, Foods, Facts and Principles, New Age International, New Delhi.

Books for Reference

1. Benion M (1995) Introductory Foods, 10th Ed, Prentice Hall, USA.
2. Swaminathan M (1998), Handbook of Food Science and Experimental Foods
3. Chandrasekhar U(2002), Food Science and its Applications in Indian Cookery, Phoenix Publishing House, New Delhi
4. Potter, N.M(1996), Food Science, 5th Ed, CBS Publishers, New Delhi.
5. Peckham, G.C(1994), Foundations of food Preparations, McMillan, London
6. Roday, S(2007), Food Science and Nutrition, Oxford University, New Delhi.
7. Gopalan C, Ramasastri, B.V and Balasubramanian S (2004) Nutritive Value of Indian Foods, NIN, Hyderabad

Module wise distribution of Marks

Module	Marks
1	4
2	6
3	23
4	19
5	8

Pattern of Questions

Part A - **Short answer** (6 questions x Mark 1each = 6)
- ***Answer all questions*** (*6 questions x Mark 1each = 6*)

Part B - **Short Essay** (8 questions x Marks 2 each =16)
- ***Answer any 6 questions*** *(6 questions x Marks 2 each=12)*

Part C - **Essay** (6 questions x Marks 3 each =18)
- ***Answer any 4 questions*** *(4 questions x Marks 3 each=12)*

Part D - **Long Essay** (4 questions x Marks 5 each =20)

- ***Answer any 2 questions*** *(2 questions x Marks 5 each=10)*

- **Total marks including choice - 60**
- ***Maximum marks of the course - 40***

Practical III (Part-1)
FOOD SCIENCE, NUTRITION AND DIETETICS*

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
V	6B15 HSC	3	54	-	-

COURSE OUTCOME

CO 1: To enable the students to gain knowledge regaring stages of cookery, effect of cooking, gluten formation etc.

CO 2: To enable the students to plan balanced diet for different age group of children.

CO 3:. To enable the students to plan balanced diet for adult man, women and pregnant and lactating women.

CO 4:. To enable the students to assess the nutritional status through anthropometry.

CO 5:. To enable the students to identify nutritional deficiency disorders among students

Module	Content	Hrs.
I	Food Science: Gluten formation Stages of sugar cookery, Germination of pulses Effect of cooking on vegetable pigments, Enzymatic and Non-enzymatic browning, Methods to prevent browning in fruits.	8
II	Planning balanced diet for preschool and school going male and female children, adolescent boys and girls, of different income groups	16
III	Planning balanced diet for adult man and woman, pregnant and lactating mothers, of different income groups and activity	16
IV	Assessment of nutritional status of vulnerable groups through anthropometry	8
V	Identification of nutritional deficiency disorders among students	6

*A record of the entire practical should be maintained. Practical examination and the valuation (internal and external) of practical record shall be done in semester 6, core course 6B15 HSC.

Theory - 8

TEXTILE SCIENCE AND APPAREL DESIGNING - I

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
V	5B10 HSC	4	72	4	3

COURSE OUTCOME

CO 1: To gain knowledge about textile fibres and their use

CO 2: To develop an understanding about various kinds of fabrics, their structure and utility

CO 3: To understand the basic elements and principles of design

CO 4: To gain knowledge in selection of clothing and wardrobe planning

CO 5: To know the concept of fashion and its terminologies and to learn the basic figure drawing and illustration

UNIT I		
Module	**Content**	**Hrs.**
I Study of Fibres	Definition and classification, production, properties and end uses of textile fibres- Cotton, Linen, Wool, Silk, Rayon, Nylon, and Polyester. Methods of identification of textile fibres.	15
II Study of Yarns	Conventional spinning technique - cotton/woollen system, chemical spinning techniques-wet, dry and melt spinning techniques open end spinning-rotor spinning. Yarn- definition, type, count, twist, number of parts, novelty yarns, textured yarn and bi-component yarn.	13
III Fabric Structure	Loom- parts and its operations, brief introduction to modern shuttle less looms- Weaves- Basic weaves- plain, twill, satin and its variations. Figured weaves- dobby, jacquard, pile, leno, clip spot, lappet, double cloth, and crepe weave Characteristics of woven fabrics: Yarns: warp and weft, grain, thread count, balance and selvages. Other methods of making fabrics: knitting, felting, lace making and brief introduction to nonwovens	18
UNIT II		
IV Elements and Principles of Design	Elements– line, size, shape, form, direction, texture, colour on clothing. Principles- harmony, balance, proportion, rhythm, emphasis on clothing.	8
V Fashion, Wardrobe Planning and Clothing	**Fashion:** Definition, concept, fashion theory, fashion cycle, terminologies-style, classic, fad and fashion trend. Fashion illustration-8 head theory, shape irregularities **Wardrobe Planning and Clothing:** Fashion fore casting and role of fashion designer. Clothing needs-physical, social economical and psychological	18

Selection	needs, factors influencing clothing needs. Selection of clothing for different age groups	

Books for Study

1. L.Joseph M (1981) Introductory Textile Science,CBS College Publishing,New York.
2. Deulkar D (2002),Household Textiles and Laundry Work,ATMA Ram and Sons,New Delhi.
3. Dantyagi.S (1996) Fundamentals of Textiles And Their Care, Orient Longman.
4. Mary Mathew's , Practical Clothing Construction, Part II, Bhattaram's Reprographics (P) Ltd, Chennai.
5. Sumathy,G.H (2005) Elements of Fashion and Apparel Design, New Age International, Pvt Ltd, New Delhi.

Books for Reference

1. Corbman.B.P (2005).Fibre To Fabric, International Student's Edition, Singapore, Mc Graw Hills Book Co.
2. Kadolf,S.J (2008) Textiles, Anne Langford, Prentice Hall.
3. Gokarneshan.U (2005) Fabric Structure And Design, New Age International Publishers.
4. Armstrong, Helen Joseph , Pattern Making For Fashion Design, Harper & Row, Publications
5. Elizabetta Durdi, Figure Drawing For Fashion Design, The Pepin Tiziana Paci Press.
6. Claire B.Shaeffer, High Fashion Sewing Secrets from The World's Rodale Best Designers.
7. Ireland .P.J (2007) New Fashion Figure Templates, Anova Books, Co Ltd, London.
8. Mullick.P (2002), Garment Construction Skills,Kalyani Publishers, New Delhi.
9. Narang,M (2007) Fashion Technology Handbook, Assia Pacific Business Press, New Delhi
10. Ireland .P.J (2004) Fashion Design Drawing And Presentation, Kyodo Printing Co Ltd, Singapore.

Journals

1. Apparels online
2. Indian Textile Journal

Module wise distribution of Marks

Module	Marks
1	12
2	10
3	20
4	8
5	10

Pattern of Questions

Part A - **Short answer** (6 questions x Mark 1each = 6)
- ***Answer all questions*** (*6 questions x Mark 1each = 6*)

Part B - **Short Essay** (8 questions x Marks 2 each =16)
- ***Answer any 6 questions*** *(6 questions x Marks 2 each=12)*

Part C - **Essay** (6 questions x Marks 3 each =18)
- ***Answer any 4 questions*** *(4 questions x Marks 3 each=12)*

Part D - **Long Essay** (4 questions x Marks 5 each =20)
- ***Answer any 2 questions*** *(2 questions x Marks 5 each=10)*

- **Total marks including choice - 60**
- ***Maximum marks of the course - 40***

Practical IV (Part-1)

TEXTILE SCIENCE AND APPAREL DESIGNING*

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
V	6B16 HSC	3	54	-	-

COURSE OUTCOME

CO 1: To enable the students to familiarise and identify different fabric material thierfibres.

CO 2: To develop an understanding about basic weaves and their identification.

CO 3: To enable the students to develop skills in stitches and garment construction process.

CO 4: To enable the students to design formal and party wear for teenagers and preschoolers.

Module	Content	Hrs.
I **Collection of different fibres**	Cotton, Silk, Polyester, Nylon, Wool and Rayon. – Testing of fibers: Visual inspection, Burning and Microscopic.	10
II **Fabric structure: Basic weaves**	Collect samples for all the Basic weaves and their variations. Fancy weaves- Collect samples for (Pile, Dobby, Jacquard, Leno, Clip spot, Lappet and Double cloth).	10
III **Basic construction processes**	Basic stitches (4), decorative stitches (6), seams and seam finishes (4), hems (3), plackets (2), fullness – darts (2) tucks, pleats (3), fasteners (3), bias and its applications - collars (1) and sleeves (2).	24
IV **Fashion Illustration**	Designing of formal and party wear for teenagers and preschoolers	10

*A record of the entire practical should be maintained. Practical examination and the valuation (internal and external) of practical record shall be done in semester 6, core course 6B16 HSC.

Theory - 9

EXTENSION EDUCATION

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
VI	6B11 HSC	5	90	5	3

COURSE OUTCOME

CO 1: To make the students understand the principles of extension.

CO 2: To understand the ways and means of home science extension.

CO 3: Develop skills in preparing and using audio-visual aids in extension work.

CO 4: Understand the process of communication in Home Science Education.

Module	Content	Hrs.
I Extension Education	Meaning, definition, objectives, scope and principles of extension education. Difference between formal, and informal extension education. – Concept of extension educational process. Role of extension worker , qualities of an extension worker.	16
II Community Development	Definition, objectives, principles of community development and extension programme in India. Community development set up; at the national, state, district, block and village levels. Types of communities and its special features-Rural and Urban, and Tribal. Basic rural Institutions- school, panchayat, and co-operatives. On going community development programme for woman and children in India; governmental organization- DWCRA, ICDS,IMY,STEP,SGSY, non governmental organization-CSWB, SSWB, CAPART,SHG	19
III Leader and Leadership	Leadership -Concept and definitions, types of community leaders-Professional leader and lay leaders; autocratic, democratic and lassiez-faire leaders. Methods of identifying community leaders. Importance of rural Leadership for community development.	15
IV Extension Programme planning	Meaning, objectives, principles and steps involved. Calendar of work, plan of work-components, developing a plan of work, factors to be considered. Implementation and evaluation	15

V Communication and Methods of approaching people	Definition, functions, elements, and problems of communication. – Legan's model of communication, different levels of communication. Extension teaching methods- Individual methods-personal visits, letters. Group methods-meetings, discussions, demonstrations, folk songs , drama ,role play, seminar ,field trips, exhibitions. Mass methods-Print and electronic media. Modern methods-computer based technologies-email, blogs, podcast, social net working, video sharing ,Teleconferencing; Advantages and limitations of each methods: Recent trends in communication-ICT tools and Audio visual aid- definition , importance ,classification, selection and use cone of experience.	25

Books for Study

1. Reddy A [1987] Extension Education,Bapatha ,Andra Pradesh,India,Sreelekshmi Press.
2. Dahama.O.P and Bhatnagar .O.P [1988] Education and Communication for Development,New Delhi, Oxford and IBH Publishing Co.Pvt .Ltd.

3 Supe, A.N.(1983).An introduction to Extension Education. Delhi.: Oxford IBH Publishing Company.

Books for Reference

1. Dubey V.K. and Bishnoi Indira (2009): Extension education and communications, New age International Pvt. Ltd. Publishers, New Delhi.
2. Waghmare,S.K[1980] Teaching Extension Education,Prasant Publication Vallabha,Vidhya Nagar.
3. Patnayak,Ram [1990] Rural Development in India,New Delhi,Vikas Publishing House
4. Jain.Gopal lal[1997]Rural Develoment,Jaipur,Mangal Deep Publications.
5. Shekhar. S and Ahlawat. S (2013),Textbook of Home Science Extension Education, Daya Publishing House, New Delhi.

Module wise distribution of Marks

Module	Marks
1	10
2	12
3	10
4	10
5	18

Pattern of Questions

Part A - **Short answer** (6 questions x Mark 1each = 6)
- ***Answer all questions*** (*6 questions x Mark 1each = 6*)

Part B - **Short Essay** (8 questions x Marks 2 each =16)
- ***Answer any 6 questions*** *(6 questions x Marks 2 each=12)*

Part C - **Essay** (6 questions x Marks 3 each =18)
- ***Answer any 4 questions*** *(4 questions x Marks 3 each=12)*

Part D - **Long Essay** (4 questions x Marks 5 each =20)
- ***Answer any 2 questions*** *(2 questions x Marks 5 each=10)*

- **Total marks including choice - 60**
- ***Maximum marks of the course - 40***

Theory - 10

GENERAL PSYCHOLOGY

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
VI	6B12 HSC	4	72	4	3

COURSE OUTCOME

CO 1: To gain knowledge about basic facts and principles of psychology.

CO 2: To understand the biological basis of behaviour, nature of sensation and perception.

CO 3:. To impart knowledge about learning, memory and forgetting.

CO 4: To understand the basic concepts of intelligence and personality.

Module	Content	Hrs.
I Introduction to Psychology	Psychology: Definition, nature and scope. – Brief history and evolution of psychology.	10
II Biological Basis of Behavior	Neurons: Building blocks of the nervous system. – The nervous system: Basic structure and functions. – The Brain and human behavior. – Endocrine system and behavior. – Heredity: Genes and behavior. Nature of consciousness, Biological rhythm, circadian rhythm .sleep and stages of sleep. Functions of sleep, REM sleep and sleep disorder.	12
III Various Cognitive Process	**Attention:** Definition. – Selective Attention and Sustained Attention: Factors influencing. – Divided attention. – Span of attention. – Attention Deficit Hyperactivity Disorder (ADHD). **Sensation:** Definition. – Visual sensation. – Auditory sensation. – Other human senses: smell, taste, touch and other skin senses, the kinaesthetic system, the vestibular system. **Perception:** Definition. –difference between sensation and perception. Sensory threshold absolute threshold Principles of perceptual organisation. – Perceptual constancies. – Illusions. **Learning**: Definition. – Classical conditioning. – Operant conditioning. – Key learning processes: reinforcement, extinction, generalisation, discrimination and spontaneous recovery. – Observational learning. **Memory:** Definition. – Stages of memory: encoding, storage and retrieval. Memory Systems: Sensory, Short-term and Long-term memories. Enhancing memory. Forgetting: Definition, Nature and Causes. **Intelligence:** Definition. – Types of intelligence tests. – Assessment of intelligence: mental age and IQ. – theories of intelligences. – Emotional intelligence and EQ.	30
IV Personality	Definition. – Major approaches of personality: Type approaches, Psychodynamic approach, behaviouristic, Humanistic approach, type and trait approach, cognitive approach – Assessment of Personality.	10

V Motivation and Emotion	Motivation: meaning, concept, types, theories. Motives and behaviour . Emotion: definition, components and changes in emotion, theories of emotion –James Lange theory, Cannon Bard theory, opponents process theory, cognitive appraisal.	10

Books for Study

1. Baron.A. Robert (2001). Psychology. New Delhi, Prentice Hall of India Man (1951), Psychology, Houghton Mifflin Company, Boston.
2. Mangal, S.K (2006). General Psychology, Sterling publishers pvt. Ltd., New Delhi,

Books for Reference

1. Hilgard, E.R. (1999). Introduction to Psychology (6th Edition), New Delhi; Oxford and IBH Publishing Co, Pvt Ltd Henry E Garret, General Psychology, Eurasia Publishing House Pvt. Ltd., New Delhi.
2. Srivastava D. N., General Psychology, Vinod Pustak Mandir, Agra.
3. Morgan, C.T. King, R.A., Weisy, J.R. Scooper, J. (1993). Introduction to Psychology, New Delhi, Tata Mc-Graw Hill Publishing Company.
4. Kuppuswamy B. and Prabhu H., A text book of General Psychology, Media promoters and Publishers Pvt. Ltd., Bombay, 1986.
5. Naima Khatoon (Ed) : General Psychology, The Pearson – ICFAI University, Delhi.

Module wise distribution of Marks

Module	Marks
1	10
2	15
3	15
4	10
5	10

Pattern of Questions

Part A - **Short answer** (6 questions x Mark 1each = 6)
- ***Answer all questions*** (*6 questions x Mark 1each = 6*)

Part B - **Short Essay** (8 questions x Marks 2 each =16)
- ***Answer any 6 questions*** *(6 questions x Marks 2 each=12)*

Part C - Essay (6 questions x Marks 3 each =18)
- ***Answer any 4 questions*** *(4 questions x Marks 3 each=12)*

Part D - **Long Essay** (4 questions x Marks 5 each =20)
- ***Answer any 2 questions*** *(2 questions x Marks 5 each=10)*

- **Total marks including choice - 60**
- ***Maximum marks of the course - 40***

Theory - 11

CLINICAL NUTRITION AND DIETETICS

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
VI	6B13 HSC	4	72	4	3

COURSE OUTCOME

CO 1: To Impart knowledge in the field of clinical nutrition

CO 2: Be able to make appropriate dietary modifications for various disease conditions based on the pathophysiology

CO 3: To develop capacity and aptitude for taking up dietetics as a profession

CO 4: Understand the consequence of nutritional problems in the society and have awareness on community nutrition based programs.

Module	Content	Hrs
I Introduction to Dietetics and Assessment of nutritional status	Meaning and scope of dietetics. Role of dietitian. Types of dietary adaptations for therapeutic needs. Types of Diets: normal, soft and liquid diets. Mode of feeding: oral, enteral and parenteral feeding. Assessment of nutritional status - anthropometry, biochemical clinical and diet surveys.	11
II Nutritional Management for common disorders	i) Fever: - Classification and aetiology of fevers and infection – Medical nutrition therapy in: Typhoid, Tuberculosis, HIV/ AIDS . ii) Cancer: - Stages in the development of cancer – risk factors for cancer: dietary and non-dietary factors, genetic and environmental factors. Nutritional requirements and dietary management in cancer. iii) Gastro Intestinal Disorders a. Peptic ulcer: types, aetiology, symptoms and dietary management. b. Constipation: aetiology, symptoms and dietary management. c. Diarrhoea: aetiology, symptoms and dietary management	19
III Nutritional care in Weight Management and Metabolic Disorders	➢ Weight imbalance, Prevalence and classification. a. Obesity: aetiology, clinical manifestations, consequences and dietary management b. Underweight: aetiology, clinical manifestations, consequences and dietary management. ➢ Diabetes Mellitus:- Prevalence, classification and aetiology, symptoms, diagnosis , complications and Management of diabetes. Glycemic Index of common foods, beneficial effects of some foods, prevention, ➢ Atherosclerosis: Common disorders, Prevalence. Phases, aetiology, symptoms, complications and nutritional management.	18

	➢ Hypertension: classification, aetiology, dietary management, DASH diet.	
IV Dietary management of Liver Diseases and Renal Disorders	a. Hepatitis: aetiology, symptoms and dietary management. b. Cirrhosis: aetiology, symptoms and dietary management. c. Acute and chronic Nephritis: aetiology, clinical symptoms and dietary management. d. Nephrotic Syndrome: aetiology, clinical symptoms and dietary management.	12
V Nutritional Problems of the Community	Prevalence, causes, consequences, prevention and control of • Protein Energy Malnutrition (PEM) • Vitamin A deficiency • Iodine Deficiency Disorders • Iron Deficiency Anaemia.	12

Books for study

1. Srilakshmi (2009) Dietetics IVthEdition , New age International (P) Ltd, Publishers, New Delhi

Books for Reference

1. Whitney,E.N, Cataldo, C.B.,andRolfes,S.R.(2002), Understanding Normal and Clinical Nutrition, Sixth Edn.Thomson Learning Inc.USA.
2. Clinical Nutrition (2005) Blackwell Science Service, Nutrition Society UK.
3. Public Health nutrition (2005), Edited by Nutrition society, Black well Science Service U.K.
4. Bamji,M.S.,Krishnaswamy,K and Brahmam(Eds.)(2009), Text book of Human Nutrition Third Edition Oxford & IBH publishing Co.Pvt.Ltd., New Delhi.
5. L. Kathleen Mahan and Sylvia Escott- Stump, Krause's Food Nutrition and Diet therapy, 11th Edition, 2005, Saunders, USA.
6. Subhangini. A. Joshy (2010), Nutrition and dietetics, Third edition. Tata Mc. Graw. Hill Education Pvt.Ltd, New Delhi
7. Paul Insel, Elaine Turner, Don Ross (2004) Nutrition second edition American Dietetic Association, Jones and Barlett publishers, London

Module wise distribution of Marks

Module	Marks
1	11
2	18
3	15
4	10
5	6

Pattern of Questions

Part A - **Short answer** (6 questions x Mark 1each = 6)
- ***Answer all questions*** (*6 questions x Mark 1each = 6*)

Part B - **Short Essay** (8 questions x Marks 2 each =16)
- ***Answer any 6 questions*** *(6 questions x Marks 2 each=12)*

Part C - **Essay** (6 questions x Marks 3 each =18)
- ***Answer any 4 questions*** *(4 questions x Marks 3 each=12)*

Part D - **Long Essay** (4 questions x Marks 5 each =20)

- ***Answer any 2 questions*** *(2 questions x Marks 5 each=10)*
- **Total marks including choice - 60**
- ***Maximum marks of the course - 40***

Theory – 12

TEXTILE SCIENCE AND APPAREL DESIGNING - II

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
VI	6B14 HSC	4	72	4	3

COURSE OUTCOME

CO 1: To impart knowledge on textile dyeing, printing and finishing of fabrics.

CO 2: To understand the types and uses of new generation textiles available in the market.

CO 3: To impart knowledge in apparel production, marketing and merchandising.

CO 4: To impart knowledge on garment construction

CO 5: To enable the students to develop skills in pattern making

UNIT I		
Module	**Content**	**Hrs**
I Dyeing and Printing	Dyes – definition, classification of dyes- natural, artificial- acid, basic, direct, sulphur, vat, naphthol, disperse and mordents. – Stages of dyeing- stock, yarn, piece, cross, and union. Printing-definition, methods - direct-block, roller and screen, discharge , resist- tie and dyeing and batik, ikat	15
II Fabric Finishes	Definition, purpose and classification. Basic finishes- scouring,degumming,desizing,bleaching,mercerisation,weight ing,singeing,calendering,napping,sanforising,tentering. Functional finishes- water repellent, fire repellent, antimicrobial and stain guard finish	12
III Modern Textiles	New trends in textiles-a brief introduction to spandex, geotextiles, nano fabrics, medicinal fabrics and eco friendly textiles-organic cotton,jute,bamboo	10
UNIT II		

IV **Garment Construction and Pattern Making**	**Garment Construction:** Tools, equipments and terms used for garment construction, classification of tools, Sewing machine - parts and functions, care and maintenance, common problems and remedies. Steps in preparing fabric for construction, layouts, marking, cutting, stitching and finishing of garments. **Pattern Making:** Importance and methods of taking body measurements. pattern making techniques- a brief introduction to drafting, draping, flat pattern designing, pattern alteration.	25
V **Fashion Marketing and Merchandising**	Definition and concepts of marketing- wholesale and retail store, visual merchandising, role and responsibility of a merchandiser, a brief introduction to various departments in apparel industry.	10

Books for Study

1. Mary Mathews , Practical Clothing Construction, Part I & II, Bhattaram's Reprographics (P) Ltd, Chennai.
2. L.Joseph M (1981) Introductory Textile Science,CBS College Publishing, New York.

Books for Reference

1. Wells .K (2002) Fabric Dyeing And Printing,Conran Octopus.
2. Smith J. L (2006) Textile Processing,Abhishek Publications, Chandigarh
3. Armstrong Helen Joseph , Pattern making for Fashion Design, Harper & Row,Publications.
4. E.Rolfo Kopp& Zelin , How To Draft Basic Pattern, Fair Child Publication Inc.
5. Gerry Cooklin, Garment Technology For Fashion Designers, Book Link.
6. Black Well (1988) The Technology Of Clothing Manufacture, Scientific Publications Hill House,
7. M.S, Dress Design-Draping And Flat Pattern, London. Mansfield.
8. Riter.J.(1998) Hand Book For Fashion Designing, Best Drafting Techniques, Mital Publications.
9. Claire B.Shaeffer, High Fashion Sewing Secrets from the World's Rodale Best Designers
10. Zarapkar,K.R (2008)Zarapkar System Of Cutting,Navaneet Publications India Ltd,Gujarat.

Module wise distribution of Marks

Module	Marks
1	12
2	10
3	6
4	25
5	7

Pattern of Questions

Part A - **Short answer** (6 questions x Mark 1each = 6)

- ***Answer all questions*** (*6 questions x Mark 1each = 6*)

Part B - **Short Essay** (8 questions x Marks 2 each =16)

- ***Answer any 6 questions*** *(6 questions x Marks 2 each=12)*

Part C - **Essay** (6 questions x Marks 3 each =18)

- ***Answer any 4 questions*** *(4 questions x Marks 3 each=12)*

Part D - **Long Essay** (4 questions x Marks 5 each =20)

- ***Answer any 2 questions*** *(2 questions x Marks 5 each=10)*

- **Total marks including choice - 60**
- ***Maximum marks of the course - 40***

Practical III (Part 2)

FOOD SCIENCE, NUTRITION AND DIETETICS

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
VI	6B15 HSC	3	54	3	3

COURSE OUTCOME

CO 1: To enable the students to take BMI- weight measurements and to do the calculation.

CO 2: To enable the students to develop skills in preparing therapeutic recipes.

CO 3:. To impart knowledge for planning diets for people in different conditions.

CO 4:. To enable the students to provide opportunity to learn by observing.

.

Module	Content	Hrs.
I	Calculation of BMI using height-weight measurements.	2
II	Preparation of therapeutic recipes. Types of therapeutic diet: normal, soft, fluid – full fluid and clear fluid diets.	24
III	Diet plan for fevers, cancer- breast cancer , diabetes mellitus, CHD, peptic ulcer, hepatitis, cirrhosis, nephritis, obesity, under weight, PEM, iron deficiency anaemia.	24
IV	Visit to a feeding programme / diet clinic.	4

*A record of the entire practical should be maintained and it shall be evaluated internally and externally.

Practical IV (Part 2)

TEXTILE SCIENCE AND APPAREL DESIGNING*

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
VI	6B16 HSC	3	54	3	3

COURSE OUTCOME

CO 1: To enable the students to understand and develop skill in fabric dyeing and printing.

CO 2: To enable the students to take body measurements for garment construction

CO 3:. To enable the students to develop skills in garment construction

CO 4:. To enable the students to develop skills in pattern making.

Module	Content	Hrs.

I **Dyeing/Printing**	Dyeing/printing-Application of direct dyeing on cotton fabrics Natural dyes-cotton/silk using tie and dye technique Vegetable block printing technique	6
II **Garment Construction**	Taking body measurements, development of basic bodies using drafting technique. Adaptation of basic bodice and construction of A-line frock (5yrs), Sari petticoat (full size), Kameez and salwar (full size).	30
III **Industrial Visits**	Visit to Mills/garment industries/units.	18

*Student shall maintain records of each work, which shall be evaluated internally and externally.

PROJECT

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
VI	6B17 HSC	2	36	2	2

COURSE OUTCOME

CO 1: To enable the students to understand basic principles of research design

CO 2: To enable the students to develop interest in Home science research.

CO 3:. To enable the students to analyze the collected data

CO 4:. To enable the students to prepare the project report.

Requirements and Conditions

1. The project shall be prepared by the students individually or in groups consisted of not more than 6 students.
2. The Department shall arrange the supervising teacher.
3. Project must be related to a topic from any branch of Home science in the syllabus.
4. The project topics are to be identified during the 5th semester with the help of supervising teacher.
5. The project report shall be around 30 pages in A4 sized paper.
6. The report of the project in duplicate shall be submitted to the Department before the 6th semester examination.
7. Evaluation of the project shall be done both internally and externally.
8. The project report shall be submitted for external evaluation during the university practical examination of core courses in sixth semester.
9. The viva – voce based on the project shall be conducted individually by the external examiner.

SYLLABUS & QUESTION PATTERN

HOME SCIENCE GENERIC ELECTIVE COURSES

Course -1

APPLIED COUNSELLING

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
V	5D01HSC	2	36	2	2

COURSE OUTCOME

CO 1: To acquaint the students with the concepts counselling.

CO 2: To familiarizes the students with different types and approaches in counselling.

CO 3:. To enable the students to understand counselling relationship and skills.

CO 4:. To enable the studentsabout the nature and process of counselling

CO 5:. To develop awareness among the students about the application of counselling.

Module	Content	Hrs.
I Introduction to Counseling	Definition, goals and features of counselling. – Difference between guidance and counselling. – Characteristics of effective counsellors. Ethical principles of counselling. – Misconceptions regarding counselling.	8
II Approaches to Counselling	Directive counselling – Nondirective counselling – Eclectic counselling – Cognitive therapies – Psychoanalytic therapy Behavioural counselling – Group therapy.	4
III Counselling Relationship	Meaning of counselling relationship. Conditions for helpng relationships: Empathy, positive regard, genuineness and concreteness. – Specific skills required in counselling.	6
IV Counselling Process	Stages of counselling process. The first stage: Initial disclosure. – The second stage: In-depth exploration. – The third stage: Commitment to action.	8
V Special Areas in Counselling	Child counselling, premarital counselling, family counselling, academic and school counselling, career counselling, crisis intervention counselling, rehabilitation counselling, post traumatic counselling.	10

Books for Study

1. Welfel, E. R. and Patterson, L.E. (2011), The counselling process, CENAGE Learning India Pvt. Ltd., India
2. Agrawal, R. (2007): Educational Vocational guidance and counselling, Shipra publications, Delhi.

3. Narayana, S. R. (2008), Counselling psychology, Tata MC Graw Hill, New Delhi.

Books for Reference

1. Belkin, G.S. (1988). Introduction to counseling, W.G. Brown Publishers.
2. Nelson, J. (1982). The theory and practice of counseling psychology, Hallt Rinehart and Winston, New York.
3. Vishala, M. (2008), Guidance and counseling, Chand & Company Pvt. Ltd., New Delhi.
4. Patterson, Lewis E (1999) The counselling process 5th edition Cliveland State University, Thomson Asia Pvt Ltd., USA.
5. Windy, D. (1988) (Ed), Counselling in action, Sage publication, New York.

Module wise distribution of Marks

Module	Marks
1	4
2	7
3	5
4	6
5	8

Pattern of Questions

Part A - **Short answer** (6 questions x Mark 1 each= 6)
- ***Answer all questions*** (*6 questions x Mark 1 each = 6*)

Part B - **Short Essay** (6 questions x Marks 2 each =12)
- ***Answer any 4 questions*** *(4 questions x Marks 2 each=8)*

Part C - **Essay** (2 questions x Marks 6 each =12)
- ***Answer any 1 question*** *(1 question x Marks 6 each=6)*

- **Total marks including choice - 30**
- ***Maximum marks of the course - 20***

Course -2
NUTRITION FOR WELLNESS

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
V	5D02 HSC	2	36	2	2

COURSE OUTCOME

CO 1: To enable students to gain basic knowledge about foods and nutrition.

CO 2: To familiarizes the students with different methods of the assessment of nutritional status.

CO 3:. To enable the students to understand about the modified diets

CO 4:. To enable the students know about the dietary management and its importance.

CO 5:. To develop awareness among the students about the functional foods and its role.

Module	Content	Hrs.
I Introduction to Nutrition	Classification of foods (based on chemical composition, predominant function, nutritive value, ICMR Food Groups). – Relation of food and health. – Food and its functions. – Introduction to nutrients. –Recommended dietary allowances.	10
II Assessment of Nutritional Status	The methods of assessment of nutritional status. – Direct Methods: Anthropometry, Biochemical changes, Clinical examination of signs, Dietary analysis.	4
III Modified Diets	Introduction. – Purpose of diet therapy. – Classification of modified diets. – Diets for selected disorders: Diabetes mellitus, Typhoid fever, Cardiovascular diseases (Atherosclerosis, hypertension), Peptic ulcer, Cirrhosis of liver, Glomerulonephritis, Renal calculi.	16
IV Weight Management (Obesity, Underweight)	Introduction. – Aetiology, assessment and principles of dietary management. – Dietary guidelines.	4
V Functional Foods and its Role	Phytochemicals - Sources, benefits and its function.	2

Books for Study

1. Sreelakshmi B, Dietetics , New Age International (p) Ltd,Publishers, New Delhi, 2010
2. Sreelakshmi B. Nutrition Science , New Age International (p) Ltd,Publishers, New Delhi, 2010.

Books for Reference

1. Insel P, Turner E.R and Ross D, Discovering Nutrition, American Dietetic Association, Jones and Bartlett Publishers, London, 2003
2. Smolin L.A and Grosvenor M.B, Nutrition Science and its Applications, Second edition,Saunders College Publishing,New York,1997

3. Park K, Park`s Textbook of Preventive and Social Medicine, 20th Edition, Banarsidas Bhanot Publishers, Jabalpur,India, 2009
4. Joshi S.A, Nutrition and Dietetics, third Edition, Tata McGraw Hill Education Pvt.Ltd, New Delhi, 2010.
5. Gopalan C,Ramasastri,B.V and Balasubramanian S.C, Nutritive value of Indian Foods, NIN, Hyderabad 2007.

Module wise distribution of Marks

Module	Marks
1	7
2	7
3	10
4	4
5	2

Pattern of Questions

Part A - **Short answer** (6 questions x Mark 1 each= 6)
- ***Answer all questions*** (*6 questions x Mark 1 each = 6*)

Part B - **Short Essay** (6 questions x Marks 2 each =12)
- ***Answer any 4 questions*** *(4 questions x Marks 2 each=8)*

Part C - **Essay** (2 questions x Marks 6 each =12)
- ***Answer any 1 question*** *(1 question x Marks 6 each=6)*

- **Total marks including choice - 30**
- ***Maximum marks of the course - 20***

Course - 3
FOOD PROCESSING AND PRESERVATION

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
V	5D03 HSC	2	36	2	2

COURSE OUTCOME

CO 1: To enable students to aware the need for food processing and food preservation.

CO 2: To understand different methods of food processing and food preservation.

CO 3:. To encourage students to apply theoretical knowledge in practical situations.

CO 4:. To enable the students know about different methods of food preservation

Module	Content	Hrs.
I Food Processing and Preservation	Scope, needs and principles of food processing and preservation.	4
II Food Spoilage and Technology of Preservation	Food spoilage-Types, causes and prevention. – Preservation: By using high temperature - heat process, canning, sterilization. – By using low temperature - refrigeration, freezing, chilling. – By Drying, fermentation. – By using natural agents – sugar, salt, acid, honey. – By using chemical preservatives.	12
III Processing and Preservation of Foods	Processing and Preservation of foods : fruits, vegetables, cereals, pulses, milk, animal foods.	6
IV Cooking of Foods	Different methods – baking, steaming, frying, pressure cooking, microwave cooking.	6
V Effects of food Processing and Preservation	Physical and chemical changes in food during preservation Common problems found in food processing and preservation Byproduct utilization.	8

Books for Study

1. Srilakshmi B. 2001. *Food Science*. New Age International.
2. Manay N.S and Shadaksharaswamy M, Foods, Facts and Principles, New Age International, New Delhi.
3. Frazier WC & Westhoff DC. 1991. *Food Microbiology*. 3 rd Ed. Tata McGraw Hill.

Books for Reference

1. Desrosier NW & Desrosier JN. 1977. *The Technology of Food Preservation*. AVI Publ.

2. McWilliams M. 1993. *Foods - Experimental Perspectives*. Macmillan.
3. Potty VH & Mulky MJ. 1993. *Food Processing*. Oxford & IBH.
4. Swaminathan MS. 1993. *Food Science and Experimental Foods*. Ganesh & Co.

Module wise distribution of Marks

Module	Marks
1	4
2	10
3	5
4	5
5	6

Pattern of Questions

Part A - **Short answer** (6 questions x Mark 1 each= 6)
- ***Answer all questions*** (*6 questions x Mark 1 each = 6*)

Part B - **Short Essay** (6 questions x Marks 2 each =12)
- ***Answer any 4 questions*** *(4 questions x Marks 2 each=8)*

Part C - **Essay** (2 questions x Marks 6 each =12)
- ***Answer any 1 question*** *(1 question x Marks 6 each=6)*

- **Total marks including choice - 30**
- ***Maximum marks of the course - 20***

Course -4

TRADITIONAL EMBROIDERIES IN INDIA

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
V	5D04 HSC	2	36	2	2

COURSE OUTCOME

CO 1: To gain knowledge on different types of embroideries done in India

CO 2: To understand different types of stitches used in traditional embroideries

CO 3:. To gain knowledge on selection of threads,colour,and fabrics for traditional embroideries of India

Module	Content	Hrs.
I **Kasuti Embroidery**	Stitches used,thread,design speciality and fabric selection	6
II **Kantha Embroidery**	Stitches used,thread,design speciality and fabric selection	6
III **Phulkari Embroidery**	Stitches used,thread,design speciality and fabric selection	6
IV **Chickenkari Embroidery**	Stitches used,thread,design speciality and fabric selection	6
V **Kashida Embroidery**	Stitches used,thread,design speciality and fabric selection	6
VI **Kutch and patch work embroidery**	Stitches used,thread,design speciality and fabric selection	6

Books for Study

1. Shailaja N .(1996) Traditional embroideries of india.APH Publishing.Mumbai.

Books for Reference

1. Richard M. Proctor and Jennifer FLew.(1998). Surface design for fabric. University of Washington Press.
2. LantoSynge. (1995). Art of embroidery: History of style and technique.Woodridge
3. Helen M. David & Charles.(1986.) The Timeless Embroidery.
4. Readers Digest.(1993). Complete guide to Sewing..Pleasantville- Nu Gail L.Search Press Ltd.
5. Barbara. S.(1998).Creative Art of Embroidery. Lundon.NumblyPub.group Ltd.

Module wise distribution of Marks

Module	Marks
1	5

2	5
3	5
4	5
5	5
6	5

Pattern of Questions

Part A - **Short answer** (6 questions x Mark 1 each= 6)
- ***Answer all questions*** (*6 questions x Mark 1 each = 6*)

Part B - **Short Essay** (6 questions x Marks 2 each =12)
- ***Answer any 4 questions*** *(4 questions x Marks 2 each=8)*

Part C - **Essay** (2 questions x Marks 6 each =12)
- ***Answer any 1 question*** *(1 question x Marks 6 each=6)*

- **Total marks including choice - 30**
- ***Maximum marks of the course - 20***

Course -5

PARENTING IN EARLY CHILDHOOD

Semester	Course Code	Hrs. Per Week	Hrs. Per Semester	Credits	Exam Hours
V	5D05 HSC	2	36	2	2

COURSE OUTCOME

CO 1: To Understand the Concept of Parenting

CO 2: To enabe the students to understand different periods in childhood

CO 3:. To evaluate strategies that encourage positive behaviour in young children

CO 4:. To demonstrate appropriate communication skills with children.

Module	Content	Hrs.
I Parenting and Parenthood	Meaning and changing concept of parenting, Planned Parenthood, Responsibilities of parenthood, Adjustments during parenthood; Individual parenting rows; determinants of parenting behavior: characteristics of the parenting roles the mothering role, the fathering role, concept of family. Developing Realistic Expectations of Young Children The image of the perfect child; Temperaments of Children, the goodness of fit: Parents' role in developing self-awareness in children. Positive and negative behaviour that children exhibit in different settings; Helping the child tolearn to express and control emotions: Age Appropriate Behaviour and its Link to Child Growth and Development- for an infant, a toddler, a pre-schooler and a child in the early years of school. Establishing routines and showing responsible behaviour, learning social role and interactions with others; meeting the children's needs.	10
II Childhood Stress and Stressors	Definition of stress, stress during childhood, signs of stress in young children. Expected stressors: birth of a sibling; moving houses; going to the dentist/doctor; changing schools; failure/disappointments in friendships; relationships with adults, toilet training. Unexpected stressors: separation of parents, moving houses, death and bereavement, illnesses, hospital visits and stay, feeling isolated or different, fears, pressure to perform in a school, bullying, unrealistic expectations, domestic violence and child abuse	7
III Strategies for Intervention with Children	Positive Strategies for Interacting with Young Children- Listening to young children; Identifying and practicing effective strategies for interacting with young children; talking to young children; Effective uses of praise. Listening so	7

	children talk and talking so children listen.	
IV Behaviour Management	Behaviour Management -discipline strategies, difference between discipline and punishment, trends in parenting styles and behaviour, the authoritative approach, Fostering Autonomy and Independence self-regulation and self-control, setting limits and medical management of behaviour.	7
V Contemporary Issues in Parenting	Children and media, Child Rights, Children and divorce Children and grief, Child abuse and neglect Children and stepfamilies	5

Books for Study

1. Adele Faber, Elaine MazliIsh.(2012). How to Talk so Kids will Listen& Listen So Kids Will Talk, Simon and SChuster

Books for Reference

1. Jim Docking, James Woodrow Docking. (2002) Managing Behaviour in the Primary School, David Fulton.
2. Karen Petty, (2010). Developmental Milestones of Young Children. Redleaf Press.
3. Richard Templar. (20l3). The Rules of Parenting: A Personal Code for Raising Happy. Confident Children. Expanded Edition.
4. Tom Bennett. (2010). The Behaviour Guru: Behaviour Management Solutions for Teachers. A&C Black.

Module wise distribution of Marks

Module	Marks
1	8
2	8
3	6
4	5
5	3

Pattern of Questions

Part A - **Short answer** (6 questions x Mark 1 each= 6)
- ***Answer all questions*** (*6 questions x Mark 1 each = 6*)

Part B - **Short Essay** (6 questions x Marks 2 each =12)
- ***Answer any 4 questions*** *(4 questions x Marks 2 each=8)*

Part C - **Essay** (2 questions x Marks 6 each =12)
- ***Answer any 1 question*** *(1 question x Marks 6 each=6)*

- **Total marks including choice - 30**
- ***Maximum marks of the course - 20***

MODEL QUESTION PAPER FOR CORE COURSES

IV Semester B.Sc. Examination, March .....
Core Course in Home Science

4B05 HSC – FAMILY RESOURCE MANAGEMENT

Time: 3 Hours **Max Marks: 40**

Section A

All questions are to be answered. Each question carries **1** mark.

1. Define management.
2. Give examples for light and moderate work.
3. What is time cost?
4. Define family budget
5. What is a hay box?
6. Define work simplification.

Section B

Six questions are to be answered. Each Question carries **2** marks.

7. Classify family income.
8. Explain work curve.
9. List out the qualities of a good home maker.
10. Suggest some ways of supplementing family income.
11. What are the types of fatigue?
12. State Consumer Protection Act.
13. Explain the working principle of solar cooker.
14. Mention the factors influencing resource management.

Section C

Four questions are to be answered. Each carries **3** marks.

15. Write on the rights and responsibilities of consumer.
16. State the advantages of saving.
17. Explain Engel's Law of Consumption.
18. Describe the steps in making a time plan.
19. Explain the methods of resolving conflicts.
20. Briefly explain the steps in decision making?

Section D

Two questions are to be answered. Each carries **5** marks.

21. Explain the steps in management process.
22. What are the different consumer aids? Explain how it helps consumers.
23. Describe Mundel's classes of change with suitable examples.
24. Discuss on the different saving schemes.

MODEL QUESTION PAPER FOR GENERIC ELECTIVE COURSE

V Semester B.Sc. Examination, November .....
Generic Elective Course in Home Science

5D01 HSC – APPLIED COUNSELLING

Time: 2 Hours **Max Marks: 20**

Section A

All questions are to be answered. Each question carries **1** mark.

1. Empathy.
2. Define counselling.
3. Counselling skills.
4. Family counselling.
5. Academic counselling.
6. Eclectic counselling

Section B

Four questions are to be answered. Each Question carries **2** marks.

7. Briefly explain the approaches in counselling.
8. "Effective counsellors are able to reach-in as well as reach-out" – Explain.
9. What is mean by counselling relationship?
10. What is career counselling? Why it is important?
11. Write a note on misconceptions regarding counselling.
12. Differentiate between counselling and guidance.

Section C

One question is to be answered. It carries **6** marks.

13. Explain the stages of counselling.
14. Explain in detail rehabilitation counselling.