

MANGALORE UNIVERSITY

Model Curriculum

Program Name	B.Sc	Total Credits for the Program	146 Credits
Core	Home Science	Starting year of implementation	2024-25

Program Outcomes: At the end of the program the student should be able to:

(Refer to literature on outcome-based education (OBE) for details on Program Outcomes)

1. Deliver quality tertiary education through learning while doing.
2. Reflect universal and domain-specific values in Home Science.
3. Involve, communicate, and engage key stakeholders.
4. Preach and practice change as a continuum.
5. Develop the ability to address the complexities and interface among of self, societal and national priorities.
6. Generate multi-skilled leaders with a holistic perspective that cuts across disciplines.
7. Instill both generic and subject-specific skills to succeed in the employment market.
8. Foster a genre of responsible students with a passion for lifelong learning and entrepreneurship.
9. Develop sensitivity, resourcefulness, and competence to render service to families, communities, and the nation at large.
10. Promote research, innovation, and design (product) development favoring all the disciplines in Home Science.
11. Enhance digital literacy and apply them to engage in real time problem solving and ideation related to all fields of Home Science.
12. Appreciate and benefit from the symbiotic relationship among the five core disciplines of Home Science-Resource Management, Food Science and Nutrition, Textiles and Clothing, Human Development and Family Studies and Extension and communication

PAPER DESCRIPTION

SL.NO	SEMESTER	CODE NO. OF THE PAPER	TITLE OF THE PAPER
1	I	BSHHSCS101	Fiber to Fabric
		BSHHSCS102	Fundamentals of Interior Design
		BSHHSCS103	Food Science
2	II	BSHHSCS201	Extension Education and Communication
		BSHHSCS202	Human Physiology
		BSHHSCS203	Basic Nutrition
3	III	BSHHSCS301	Life Span Development: The Early Childhood
		BSHHSCS302	Apparel Designing
		BSHHSCS303	Community Nutrition
		BSHHSCSCE	(Elective) Nutritional Biochemistry
		BSHHSCSCE	Event Management
4	IV	BSHHSCS401	Lifespan Development : School age to adulthood
		BSHHSCS402	Food Preservation
		BSHHSCS403	Resource Management
		BSHHSCSCE	(Elective) Food Microbiology
		BSHHSCSCE	Garden and Landscape Designing
		BSHHSCC	Compulsory Paper : Public Health Nutrition
5	V	BSHHSCS 501	Nutritional management in Health (P)
		BSHHSCS 502	Basics of Psychology
		BSHHSCS 503	Human Development and Family Studies (P)
		BSHHSCS 504	Fashion Studies
		BSHHSCS 505	Bakery Science and Culinary Articles (P)
		BSHHSCS 506	Children with Special needs
		BSHHSCC	Compulsory Paper : Basics of First Aid
6	VI	BSHHSCS 601	Nutritional management in Diseases (P)
		BSHHSCS 602	Personal Finance and Consumer Studies (P)
		BSHHSCS 603	Quality Control and Food Safety Regulations (P)
		BSHHSCS 604	Food Service Management
		BSHHSCS 605	Early Childhood Education
		BSHHSCS 606	Housekeeping
		BSHHSCC	Compulsory Paper : Internship Report

[BSc. Home Science]

Semester-I								
Sl. No	Course Code	Title of the Course	Category of Courses Theory/Practical	Teaching Hours per Week	SEE	IA	Total Marks	Credits
1		Fiber to Fabric	Theory	4	80	20	100	3
2		Fiber to Fabric	Practical	3	40	10	50	2
3		Fundamentals of Interior Design	Theory	4	80	20	100	3
4		Fundamentals of Interior Design	Practical	3	40	10	50	2
5		Food Science	Theory	4	80	20	100	3
6		Food Science	Practical	3	40	10	50	2

Semester-II								
Sl. No	Course Code	Title of the Course	Category of Courses Theory/Practical	Teaching Hours per Week	SEE	IA	Total Marks	Credits
1		Extension Education and Communication	Theory	4	80	20	100	3
2		Extension Education and Communication	Practical	3	40	10	50	2
3		Human Physiology	Theory	4	80	20	100	3
4		Human Physiology	Practical	3	40	10	50	2
5		Basic Nutrition	Theory	4	80	20	100	3
6		Basic Nutrition	Practical	3	40	10	50	2

Semester-III								
Sl. No	Course Code	Title of the Course	Category of Courses Theory/ Practical	Teaching Hours per Week	SEE	IA	Total Marks	Credits
1		Life Span Development: The Early Childhood	Theory	4	80	20	100	3
2		Life Span Development: The Early Childhood	Practical	3	40	10	50	2
3		Apparel Designing	Theory	4	80	20	100	3
4		Apparel Designing	Practical	3	40	10	50	2
5		Community Nutrition	Theory	4	80	20	100	3
6		Community Nutrition	Practical	3	40	10	50	2
7	Elective	Nutritional Biochemistry OR	Theory	2	40	10	50	2
8		Event Management and Hospitality Services						

Semester-IV								
Sl. No	Course Code	Title of the Course	Category of Courses Theory/ Practical	Teaching Hours per Week	SEE	IA	Total Marks	Credits
1		Lifespan Development : School age to adulthood	Theory	4	80	20	100	3
2		Lifespan Development : School age to adulthood	Practical	3	40	10	50	2
3		Food Preservation	Theory	4	80	20	100	3
4		Food Preservation	Practical	3	40	10	50	2
5		Resource Management	Theory	4	80	20	100	3
6		Resource Management	Practical	3	40	10	50	2
7	Elective	Food Microbiology OR	Theory	2	40	10	50	2
8		Garden and Landscape Designing						
9	Compulsory Paper	Public Health Nutrition	Practical	2	40	10	50	2

Semester-V								
Sl. No	Course Code	Title of the Course	Category of Courses Theory/ Practical	Teaching Hours per Week	SEE	IA	Total Marks	Credits
1	HSC-1	Nutritional Management in Health	Theory	4	80	20	100	3
2		Nutritional Management in Health	Practical	3	40	10	50	2
3	HSC-2	Basics of psychology	Theory	4	80	20	100	3
4	HSC-3	Human Development and Family Studies	Theory	4	80	20	100	3
5		Human Development and Family Studies	Practical	3	40	10	50	2
6	HSC-4	Fashion studies	Theory	4	80	20	100	3
7	HSC-5	Bakery science and culinary skills	Theory	4	80	20	100	3
8		Bakery science and culinary skills	Practical	3	40	10	50	2
9	HSC-6	Children with Special needs	Theory	4	80	20	100	3
10	Compulsory Paper	Basics of First Aid	Practical	2	40	10	50	2

Semester-VI								
Sl. No	Course Code	Title of the Course	Category of Courses Theory/ Practical	Teaching Hours per Week	SEE	IA	Total Marks	Credits
1	HSC-1	Nutritional Management in Diseases	Theory	4	80	20	100	3
2		Nutritional Management in Diseases	Practical	3	40	10	50	2
3	HSC-2	Food Service management	Theory	4	80	20	100	3
4	HSC-3	Personal Finance and Consumer Studies	Theory	4	80	20	100	3
5		Personal Finance and Consumer Studies	Practical	3	40	10	50	2
6	HSC-4	Early Childhood Education	Theory	4	80	20	100	3
7	HSC-5	Quality Control and Food Regulation	Theory	4	80	20	100	3
8		Quality Control and Food Regulation	Practical	3	40	10	50	2
9	HSC-6	Housekeeping	Theory	4	80	20	100	3
10	Compulsory Paper	Internship report	Practical	2	40	10	50	2

*Languages 3 credit – 4 contact hours

Programme objectives:

By learning Home Science, the students will be capable of

- To introduce the students to the field of Home Science.
- To produce comprehensive knowledge of each approaches.
- Put into practice decision making and problem solving skills to make informed choices, develop sensitivity towards the need of family and society.
- To help and execute need based, multidisciplinary action oriented activities for improving the quality of life.
- Develop lifelong ability to absorb knowledge and apply effectively to meet the challenges to ever changing life.
- promote entrepreneurship skill
- Develop the skills required to opt for higher education and career.

Program Outcomes: At the end of the program the student should be able to:

(Refer to literature on outcome-based education (OBE) for details on Program Outcomes)

- Deliver quality tertiary education through learning while doing.
- Reflect universal and domain-specific values in Home Science.
- Involve, communicate, and engage key stakeholders.
- Preach and practice change as a continuum.
- Develop the ability to address the complexities and interface among of self, societal and national priorities.
- Generate multi-skilled leaders with a holistic perspective that cuts across disciplines.
- Instill both generic and subject-specific skills to succeed in the employment market.
- Foster a genre of responsible students with a passion for lifelong learning and entrepreneurship.
- Develop sensitivity, resourcefulness, and competence to render service to families, communities, and the nation at large.
- Promote research, innovation, and design (product) development favoring all the disciplines in Home Science.
- Enhance digital literacy and apply them to engage in real time problem solving and ideation related to all fields of Home Science.
- Appreciate and benefit from the symbiotic relationship among the five core disciplines of Home Science-Resource Management, Food Science and Nutrition, Textiles and Clothing, Human Development and Family Studies and Extension and communication

**SEMESTER-I
PAPER-I**

Course Title: FIBER TO FABRIC	
Paper Code: BSHHSCS101	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To gain knowledge on manufacturing process and types of fibers
- To understand application of various textiles fibers
- To learn sustainability and environmental impact of fibers

Course Outcomes: (COs)

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

- * Develop the skill of identifying and analyzing various types of fibres, yarns and fabrics.
- * Knowledge of textile care and maintenance
- * Awareness on sustainable textiles and its application daily life.

SEMESTER I
PAPER-I FIBER TO FABRIC

Paper code: BSHHSCS 101	
Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT	48 Hrs.
Unit – 1 Introduction to Textiles	12 Hrs
<ul style="list-style-type: none"> * Introduction and classification of textile fibers and their properties * Production and uses of various fibers * Natural Fibers : Cotton, Linen, Wool, Silk * Manmade Fibers – Rayon, Nylon, Polyester, Acrylic. * Recent trends in fibers 	
Unit – 2 Study of Yarn	12 Hrs
<ul style="list-style-type: none"> * Basic principles and process of yarn construction - Different types of Yarn, Staple, Filament, Textured and Blended Yarns, Yarn Count, Thread count, Yarn Twists, ‘S’ And ‘Z’ Twist * Types of Yarns- Simple Yarns, Single Yarns, Ply Yarn, Cord Yarn. * Novelty Yarns -Slub, Flake, Spiral, Loop, Knot * Characteristics of Woven Fabrics – Warp and Weft, Grain and Selvedge. 	
Unit – 3 Techniques of Fabric Construction and Weaving	12 Hrs
<ul style="list-style-type: none"> * Introduction, Fabric Construction Process * Woven: The Loom, Types of Looms, Parts of a Loom and its Functions Characteristics of Woven Fabrics, Woven fabric defects. * Basic Weaves : Plain, Twill, Satin * Decorative Weaves : Jacquard, Dobby, Leno, Pile * Non Woven Textiles – Knitting, Braiding, Netting, Felting * Lace Making – Uses and types of Lace 	
Unit –4 Laundry science and Eco-textiles	12 Hrs

- * Laundry science – materials, equipment's and process involved in laundry, method of soap preparation, stain removal techniques, starches, stiffeners, softeners and additional laundry agents
- * Eco fibres and fabrics, carbon footprint, Eco mark for fabrics, Eco fibres and their applications and impact on the environment, its comparison with the other manmade fibres.
- * Textile waste and Up-cycling, Reuse, recycle, Concept of Reconstruction - Redesign, repair and recycle
- * Eco fashion terminologies, Eco fashion labels, Benefits of eco labels.

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Develop the skill of identifying and analyzing various types of fibres, yarns and fabrics.				X		X	X	X				
Knowledge of textile care and maintenance		X		X			X			X		
Awareness on sustainable textiles and its application daily life.	X	X								X		X

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

Practical Course:

Paper Code: BSHHSPN101	
Total Contact Hours: 52 Hrs	Course Credits:2
List of Experiments to be conducted	
<ul style="list-style-type: none"> • Identification of different types of Textiles Fibers: Visual, Microscopic and Burning test. • Construction of Basic and Decorative stitches • Use and care of sewing machine. • Construction of seams • Basic Weaves - Prepare paper samples for all the basic weaves: (one sample for each), Collect the samples for the Decorative Weaves • Soap preparation. • Visit to Garment manufacture unit. 	

Pedagogy Practical:

Formative Assessment = 50 marks	
Assessment Occasion / type	Weightage in Marks
Lab record and attendance	5
Practice exercise	5
Total	40 marks (Practical exam) + 10 marks = 50 marks

References:

- Ziffzer – clothing construction practicals –prasaranga Mysore University
- Hess,” Textile fibres and their use: 6th edition Oxfors& IBH publishing Co.PVt ltd., New Delhi, Bombay, Calcutta.
- Mary, B. Cowan, Martha E. jungerman Introduction to textiles; D.B.Taraporvala sons & Company Pvt., Ltd.,
- DurgaDaulkar, “ Household Textiles & Laundry work
- Erwin, Mabul”Clothing for Moderns N.Y. Macmillian Publication.
- Wingate, “Textile fabrics and their selcation” Prentice hall Englewood cliffs N.J.
- Potter and Corbmon, “Fibre to fabric” N.Y. Gergg division and macran hill book co.
- Dr.NaveenKaur “Comdex Fashion Design”. Vol II (2010) Dreamtech Press New Delhi
- Dr.SushmaGuptha, neeruGarg, RenuSaini (2003)” Text Book of Clothing and Textiles” Kallyani publishers, ludhiyana, New Delhi.
- Joseph m.L(1981)” Introductory Textiles Science” Holt Ripen hart of winstin New York.
- D’souza N(1998) ‘Fabric care’ New Age International Pvt. Ltd. Publishers

**SEMESTER-I
PAPER-II**

Course Title: FUNDAMENTALS OF INTERIOR DESIGN	
Paper Code: BSHHSCS102	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To gain knowledge on elements of art and principles of design.
- To understand the effect of colour with Interior design.
- To learn global market trends in the area of designs.

Course Outcomes (COs):

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

- Gain knowledge on application of elements of art and principles of design in Interiors.
- Analyze the traditional and contemporary furniture designs and furnishing styles
- Evaluate case studies on global market trends and techniques in the area of design.

SEMESTER I
PAPER-II
FUNDAMENTALS OF INTERIOR DESIGN

Paper code: BSHHSCS102	
Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT	48 Hrs.
Unit – 1 Design Aspects	12 Hrs
<ul style="list-style-type: none"> * Design, Definition, Characteristics and classification of Design, History of Design, Terminologies in Interior design and decoration * Elements of Design and its application * Principles of Design and its application 	
Unit – 2 Colours in Interiors	12 Hrs
<ul style="list-style-type: none"> * Colors in Interiors - Meaning of colour, Colour Spectrum – VIBGYOR, Dimensions of colour. * Colour Systems -Prang and Munsell colour systems. * Colour schemes and its significance in interiors, Colour psychology and Colour dynamics, Skills in rendering colours to interiors. 	
Unit – 3 Decorations and Furnishings for Interiors	12 Hrs
<ul style="list-style-type: none"> * Lighting and Its Accessories - Lighting types, Lighting fixtures, suitable for various activities, Lighting accessories and their role in interiors, Effect of natural light and artificial light. * Decoration - Flower arrangement, Rangoli and Floral Decorations, Accessories and decoration - Recent Trends & Innovation * Furnishings- Soft Furnishings and Hard Furnishings, Selection, use and 	

care of household linens and other furnishings
* Window Treatments and Curtain Styles- Hard windows and Soft Windows, Curtain Styles
Unit –4 FURNITURE DESIGN 12 Hrs
<ul style="list-style-type: none"> * History of Furniture Design, History of Interior design in India- traditional styles of design and decoration in homes. Global Furniture Styles. * Selection and arrangement of furniture, Upholstered furniture material, techniques and design * Design of furniture and its work heights, Comfortable working postures with design considerations for residential and commercial work spaces, Furniture design based on anthropometric dimensions.

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Gain knowledge on application of elements of art and principles of design in Interiors.		X		X		X						X
Analyze the traditional and contemporary furniture designs and furnishing styles	X	X			X					X		
Evaluate case studies on global market trends and techniques in the area of design.		X		X	X	X						

Pedagogy Theory:

Practical Course:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks
Paper Code: BSHHSPN102	
Total Contact Hours: 52 Hrs	Course Credits:2
List of Experiments to be conducted	
<ul style="list-style-type: none">• Illustrate the different types of design• Illustrate the application on Elements of Art and Principles of Design.• Develop Prang and Munsell Colour chart.• Illustrate the different colour schemes for various interiors.• Market Survey on lighting accessories, furnishings and Furniture• Flower Arrangements- Different types and styles• Create an album on furniture styles – Traditional, Modern and Contemporary.• Design Research – Evaluation of Case Studies<ul style="list-style-type: none">• Decoration – trends and classic style to suit lifestyle• Furniture Designs - international markets and global trends, marketing techniques, branding, promotion and presentation, work opportunities, intellectual property.	

Pedagogy Practical:

Formative Assessment = 50 marks	
Assessment Occasion / type	Weightage in Marks
Lab record and attendance	5
Practice exercise	5
Total	40 marks (Practical exam) + 10 marks = 50 marks

References:

- Ball, Victoria .K (2001), The Art of Interior Design, McMillan and Co, New York.
- Bhatt.P.D, Goenka.S(2003). Foundation of Art Design, Lakshmi Book Depot, Mumbai.
- GopalKrishna, K.R, (2006), Fundamentals of Drawing, Subhas Stores Book Corner, Bangalore.
- Pratap Rao M, (2002) Interior Design, Principles and Practices, Standard Publishers and Distributors
- John Pile and Judith (2013). A History of Interior Design, Wiley Publishers
- Penny Spark (2009). Designing the Modern Interior, Berg Publishers
- Choudhary, A.K.R. (2000). Modern Concepts of Colour and Appearance, Oxford and IBH Publishing Co. Pvt. Ltd. New Delhi.
- Hilliard, E. (2000). Brilliant Colour at Home, Kyle Cathie Ltd, London

**SEMESTER-I
PAPER-III**

Course Title: FOOD SCIENCE	
Paper Code: BSHHSCS103	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To gain knowledge on Food groups and Food guide pyramid.
- To understand Different methods of cooking and its effects.
- To learn nutritional significance of different food types.

Course Outcomes (COs):

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

- Summarize and critically discuss and understand both fundamental and applied aspects of Food Science.
- Able to explain functions of food in maintaining health
- Identify factors of foods and related disciplines to solve practical as well as real world problems

SEMESTER I
PAPER-III FOOD SCIENCE

Paper code: BSHHSCS103	
Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT		48 Hrs.
Unit – 1	Introduction of Food Groups, Food Pyramid	12 Hrs
<ul style="list-style-type: none"> * Definition and Terms used in Food Science and Nutrition - Health, Food, Nutrition, Nutrients and Malnutrition * Various classifications of Foods and Food Groups - Definition, Classification and Functions of Foods. * Basic Food Groups and Need for Grouping Foods and Application of Food Groups in Planning Adequate/Balanced Diets – Introducing EAR. 		
Unit – 2	Cooking Methods	12 Hrs
<ul style="list-style-type: none"> * Culinary terms and Methods of Cooking - An Overview of culinary terms - Different Modes of heat transfer like Radiation, Conduction and Convection. * Moist heat methods - Boiling, Simmering, Poaching, Steaming, Pressure cooking. Dry heat methods - Air as medium of cooking - Grilling, broiling, roasting, Baking. Fat as medium of cooking -Sautéing, Shallow fat frying, Deep fat frying. Combined (Moist and dry) Methods - Braising, Stewing. * Other cooking methods -Microwave cooking, and Solar cooking. Advantages and Disadvantages of Cooking methods 		
Unit – 3	Nutritional Significance of cereals and pulses	12 Hrs
<ul style="list-style-type: none"> * Types of cereals: wheat, rice, millets. * Cereal Products -Flaked rice, puffed rice, wheat flour) Principles and 		

<p>properties of Cereals and its utility: Germination (Amylase Rich Foods- ARF), fermentation, Parboiling, Gelatinization, Dextrinization, Gluten formation</p> <ul style="list-style-type: none"> * Pulses and Legumes * Fruits and Vegetables
<p>Unit –4 Importance and functional properties of the following 12 Hrs</p> <ul style="list-style-type: none"> * Milk and Milk Products: including Fortified milk & its importance. * Eggs-Basic structure of an egg and biological value, Quality evaluation and grading of eggs. * Meat, poultry and fish. * Nuts, oils and Oil seeds. * Salt, Sugar and Jaggery. * Spices & Condiments.

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Summarize and critically discuss and understand both fundamental and applied aspects of Food Science.	X	X	X	X								
Able to explain functions of food in maintaining health	X				X		X		X			
Identify factors of foods and related disciplines to solve practical as well as real world problems	X	X				X		X				

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

Practical Course:

Paper Code: BSHHSPN103	
Total Contact Hours: 52 Hrs	Course Credits:2
List of Experiments to be conducted	
<ul style="list-style-type: none"> • Weights and measures with standardization of recipes • Cereal and pulse preparation • Vegetable cookery – Effect on pigments and enzymatic browning in fruits and vegetables • Milk and Egg cookery • Stages of Sugar Cookery 	

Pedagogy Practical:

Formative Assessment = 50 marks	
Assessment Occasion / type	Weightage in Marks
Lab record and attendance	5
Practice exercise	5
Total	40 marks (Practical exam) + 10 marks = 50 marks

References:

- Khanna K, Gupta S, Seth R, Mahna R, Rekhi T (2004). The Art and Science of Cooking: A Practical Manual, Revised Edition. Elite Publishing House Pvt Ltd.
- Raina U, Kashyap S, Narula V, Thomas S, Suvira, Vir S, Chopra S (2010). Basic Food Preparation: A Complete Manual, Fourth Edition. Orient Black Swan Ltd.
- Rekhi T and Yadav H (2014). Fundamentals of Food and Nutrition. Elite Publishing House Pvt Ltd., Delhi.
- Srilakshmi B (2014). Food Science, 6th Edition. New Age International Ltd., Delhi.
- Bamji MS, Krishnaswamy K, Brahmam GNV (2016). Textbook of Human Nutrition, 4th edition. Oxford and IBH Publishing Co. Pvt. Ltd.
- Byrd-Bredbenner C, Moe G, Beshgetoor D, Berning J. Wardlaw's Perspectives in Nutrition, McGraw- Hill International Edition, 9th edition, 2013.
- Antia, F.P. (2005): Clinical Nutrition and Dietetics, Oxford University Press, Delhi
- Gordon M Ward law (1999) Perspectives in Nutrition 4thed.WCB/Mcgraw Hill. International edition.
- Mahan, L.K., Arlin, M.T. (2000): Krause's Food, Nutrition and Diet therapy, 11th edition, W.B.Saunders Company, London.
- Passmore, R and Davidson S (1986) Human Nutrition and Dietetics.Living stone Publishers.
- Robinson, C.H;Lawler, M.R.Chenoweth, W.L;andGarwick,A.E (1986):Normal and Therapeutic Nutrition,17th Ed., Mac Millan Publishing Co

**SEMESTER-II
PAPER-IV**

Course Title: EXTENSION EDUCATION AND COMMUNICATION	
Paper Code: BSHHSCS201	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To transfer knowledge and skills to the community
- To develop effective communication skills
- To promote community participation and empowerment

Course Outcomes (COs):

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

- Understand the Concept of Extension Education and Communication
- Develop skills in the use of Extension methods and media.
- Become aware of Extension teaching and Learning.

SEMESTER II
PAPER-IV EXTENSION EDUCATION AND COMMUNICATION

Paper code: BSHHSCS 201	
Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT		48 Hrs.
Unit – 1	Extension Education and Adult Learning	12 Hrs
<p>* Extension Education Definition, meaning, objectives, principles, scope, and Philosophy. Qualities of an Extension facilitator. Home science extension – Concept, definition, objectives, and philosophy, Contribution of Home Science Extension towards development of society.</p> <p>* Extension Teaching – Concept, goals, characteristics, steps, phases in extension education process. Edgar Dale’s cone of experience. Adult learning, factors affecting, types. Teaching process – types of teaching methods, principles of teaching. Qualities of a good teacher.</p> <p>* Leader and leadership – types, styles, qualities, functions, advantages, and disadvantages of working with the leaders. Training camps.</p>		
Unit – 2	Extension Teaching Methods & Media Communication	12 Hrs
<p>* Definition, Aims and objectives, classification. Each of the Extension methods merits and limitations.</p> <p>* Audio visual aids – definition, role of visual aids in teaching, important audio, visual and other extension methods for effective teaching.</p> <p>* Visual Media - it's preparation and usage for the following: - a. Electronic Media - i. Radio ii. Television iii. Films. Group Media and it's usage in Extension b. Print Media - i. News Paper ii. Magazines. Mass media and their uses for extension</p>		

c. Folk Media - Meaning and Characteristics ii. Major Indian Folk forms ii. Importance of Folk forms.	
Unit – 3 Diffusion and Adoption of Extension	12 Hrs
<ul style="list-style-type: none"> * Diffusion and Adoption, Innovation decision process, its stages, four main elements in diffusion of innovations. * Difference between communication and diffusion. * Steps in adoption process, important factors related to adoption of practices. 	
Unit –4 Extension Training Methods	12 Hrs
<ul style="list-style-type: none"> * Lecture, Group Discussion, Seminar, Panel discussion * Symposium, workshop, case study, role play * Simulated method, video conferencing. 	

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Understand the Concept of Extension Education and Communication.		X		X		X						X
Develop skills in the use of Extension methods and media.	X	X			X					X		
Become aware of Extension teaching and Learning.		X		X	X	X						

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

Practical Course:

Paper Code: BSHHSPN201	
Total Contact Hours: 52 Hrs	Course Credits:2
List of Experiments to be conducted	
<ul style="list-style-type: none">● Content analysis of news/programmes.● Edgar Dale's cone of experience.● Selection and preparation of developmental message using different methods and media: -<ul style="list-style-type: none">a. Planning for the community.b. Developing message to the community.c. Evaluation of teaching aids used.● Using an appropriate example apply the stages of an adoption process.● Do an Interviewing/case study about a leader or successful social worker or organization itself which does community development work.● Using any communication media design/develop a tool to use for community effectiveness.	

Pedagogy Practical:

Formative Assessment = 50 marks	
Assessment Occasion / type	Weightage in Marks
Lab record and attendance	5
Practice exercise	5
Total	40 marks (Practical exam) + 10 marks = 50 marks

References:

- P.M Khan and L. L Somani (2010): Fundamentals of Extension Education Agrotech publishing company.
- Wittch and schuller (2002): Audio Visual Materials, Havper& Row publications.
- Extension Education by S.k. Waghmare (2007) New Age India publications.
- Fundamentals of Teaching Home Science by Arvind Chandra, Anupam Shah and Uma Joshi (2010) International publishers.
- A textbook of Audio-Visual aids by Lalit Kishore (2002) United publications.
- Education and Communication for Development by O.P Dahama and O.P Bhatnagar (2007) revised edition. New Age India publication.

**SEMESTER-II
PAPER-V**

Course Title: HUMAN PHYSIOLOGY	
Paper Code: BSHHSCS202	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To understand the functions of the human body system
- To explain the physiological processes
- To analyse relationships between bodily systems

Course Outcomes (COs):

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

- * Gain knowledge into the structure and functions of cells, tissues and organs of human body
- * Understand the anatomy and physiology of the various systems in the human body
- * Comprehend the functions of systems.

SEMESTER II

Paper code: BSHHSCS 202 HUMAN PHYSIOLOGY	
Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT	48 Hrs.
Unit – 1 Introduction to Human Physiology	12 Hrs
<ul style="list-style-type: none"> * Basic concepts of Cell structure, tissues, organs and their function. * Structure and Functions of lymph System * Structure and Functions of Skeletal System 	
Unit – 2 Cardiovascular System and Respiratory System	12 Hrs
<ul style="list-style-type: none"> * Blood and its composition ,Functions; Blood groups * Structure and functions of heart Cardiac cycle, Blood Pressure (Systolic & Diastolic Blood pressure), , ECG, Common disorders: anemia, myocardial ischemia and infarction * Physiological Anatomy of Respiratory Tract, Mechanism of Respiration, Transport of Respiratory Gases in Blood, Gaseous Exchange in Lungs and tissues. 	
Unit – 3 Physiology of Digestive system and excretory system	12 Hrs
Digestive System <ul style="list-style-type: none"> * Principal accessory organs- salivary glands, liver, gall bladder, pancreas- structure & function * Digestion and absorption of carbohydrates, proteins and lipids * Common disorders of the digestive system :Diarrhea, constipation, vomiting, obstructive jaundice, gastroenteritis, and acidity Excretory System <ul style="list-style-type: none"> * Structure of Excretory System- Kidney, Nephron * Urine Formation, micturition, Glomerular Filtration Rate(GFR), 	

* Acute glomerulonephritis, Chronic glomerulonephritis, Nephrotic Syndrome and Renal failure.
Unit –4 Physiology of Endocrine system, Reproductive system and nervous system 12 Hrs
Endocrine System <ul style="list-style-type: none"> * Functions of endocrine glands * Functions and Hormones secreted by Pituitary Gland * Disorders of hypo and hyper secretion of the glands Reproductive System <ul style="list-style-type: none"> * Structure, hormones secrete by male and female reproductive organs * Physiology of Menstruation- Estrogen vs Progesterone. * Pregnancy and associated changes, physiology of lactation Nervous system <p>Structure and functions of Neuron, Brain</p>

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Gain knowledge into the structure and functions of cells, tissues and organs of human body		X		X		X			X			
Understand the anatomy and physiology of the various systems in the human body	X	X			X					X		
Comprehend the functions of systems.		X		X	X	X						

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

Practical Course:

Paper Code: BSHHSPN202	
Total Contact Hours: 52 Hrs	Course Credits:2
List of Experiments to be conducted	
<ul style="list-style-type: none">● Blood Grouping● Bleeding time● Clotting time● Haemoglobin Estimation● Record of Blood pressure	

Pedagogy Practical:

Formative Assessment = 50 marks	
Assessment Occasion / type	Weightage in Marks
Lab record and attendance	5
Practice exercise	5
Total	40 marks (Practical exam) + 10 marks = 50 marks

References:

- Chatterjee C.C (2016), Human Physiology Volume I, Medical Allied Agency, Kolkata
- Chatterjee C.C (2004), Human Physiology Volume II, Medical Allied Agency, Kolkata. Sembulingam, K. (2000) Essentials of Medical Physiology, Jaypee Brothers Medical Publishers (P) Ltd., New Delhi
- Chaudhri, K. (1993) Concise Medical Physiology, New Central Book Agency (Parental) Ltd., Calcutta.

**SEMESTER-II
PAPER-VI**

Course Title: BASIC NUTRITION	
Paper Code: BSHHSCS203	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To gain knowledge on different nutrients
- To understand the nutritional deficiencies
- To study the relationship between health and nutrition

Course Outcomes (COs):

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

- * To Understand the Functions and Sources of Nutrients
- * Apply the knowledge in maintenance of Good Health for the individual and the Community
- * Be familiar with factors affecting availability and requirements.

SEMESTER II

Paper code: BSHHSCS 203 BASIC NUTRITION	
Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT	48 Hrs.
Unit – 1 Introduction to Nutrition	12 Hrs
<ul style="list-style-type: none"> * Nutritional Status: The relation of good nutrition to normal health. * Definitions of the terms – Food, Nutrition, Health, Nutrients, Nutritional status, Malnutrition etc. * Energy - Definition of energy, calorie and joule, Measurement of calorific values of foods: gross and physiological value of food. Basal Metabolic Rate (BMR) and Factors affecting BMR. Specific Dynamic Action (SDA) of foods. Energy needs of the body. Direct and indirect calorimeter. 	
Unit – 2 Macro Nutrients	12 Hrs
<ul style="list-style-type: none"> * Definition, Classification, Dietary Sources, Functions, Recommended Dietary Allowances, clinical signs and symptoms of Deficiency diseases and Excess of the following: a) Energy; b) Carbohydrates; C) Fats; d) Proteins; e) Water and fiber 	
Unit – 3 Minerals	12 Hrs
<ul style="list-style-type: none"> * Definition, Classification, Dietary Sources, Functions, Recommended Dietary Allowances, clinical signs and symptoms of Deficiency diseases and Excess of the following: a) Calcium; b) Phosphorus; c) Magnesium; d) sodium; e) Potassium; f) Iron; g) Zinc; h) Iodine; i) Flourine. 	
Unit –4 Vitamins	12 Hrs
<ul style="list-style-type: none"> * Classifications, functions, sources, Clinical signs and symptoms of 	

deficiency, requirements of Fat Soluble Vitamins - A, D, E and K.

- * Water Soluble Vitamins-B Complex Vitamins- Thiamine, Riboflavin, Niacin, Pyridoxine, Folic acid, Cyanocobalamin and Vitamin C.

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
To Understand the Functions and Sources of Nutrients		X		X		X		X				
Apply the knowledge in maintenance of Good Health for the individual and the Community	X	X			X					X		
Be familiar with factors affecting availability and requirements.		X		X	X				X			

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

Practical Course:

Paper Code: BSHHSPN203	
Total Contact Hours: 52 Hrs	Course Credits:2

List of Experiments to be conducted

* Plan, Prepare, calculate and serve the following recipes rich in:

1. Protein
2. Calcium
3. Iron
4. Vitamin A
5. Vitamin C

Pedagogy Practical:**Formative Assessment = 50 marks**

Assessment Occasion / type	Weightage in Marks
Lab record and attendance	5
Practice exercise	5
Total	40 marks (Practical exam) + 10 marks = 50 marks

References:

- Guthrie, A. H., (1986) Introductory Nutrition, 6th Ed., The CV Mosby Company
- Swaminathan, M., (1985) Essentials of food and nutrition, Vol I and II, Ganesh and Co, Madras Gopalan C (1991) Nutrition value of Indian foods, ICMR
- WTO Technical Reports Series for Different Nutrients.
- Robinson CH, Lawler MR, Chenoweth WL, Garwick AE (1986) Normal and therapeutic nutrition, 17th Ed., Macmillan Publ. Co.
- Agarwal A, Udipi SA (2014) Text book of human nutrition, Jaypee Bros. Medical Publ., New Delhi
- Bamji M, Rao NP, Reddy V (1996) Text book of Human Nutrition, Oxford and IBH Publ. Co. Pvt Ltd, New Delhi
- Srilakshmi B (2015) Nutrition science - 4th Ed., New age international Publ., New Delhi
- Shills ME, Shike M, Ross AC, Caballero B, Cousins RJ (2005) Modern Nutrition in health and disease – 10th Ed., Lippincott Williams and Wilkins

SEMESTER-III

PAPER-VII

Course Title: LIFE SPAN DEVELOPMENT: THE EARLY CHILDHOOD	
Paper Code: BSHHSCS301	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To gain knowledge on promoting cognitive development.
- To understand and support for social and emotional development.
- To foster creativity and self-expression.

Course Outcomes (COs):

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

- * The importance of Early Childhood education for future learning.
- * To learn how to organize and manage a good nursery school.
- * To build confidence and self-esteem.

SEMESTER III

Paper code: BSHHSCS 301 LIFE SPAN DEVELOPMENT: THE EARLY CHILDHOOD	
Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT	48 Hrs.
Unit – 1 Introduction	12 Hrs
<ul style="list-style-type: none">* Introduction - Definition, Need and scope of Human Development, trends and issues in Human Development, concepts and Principles of Growth and Development. Theoretical perspectives and methods of studying Human Development. Influence of heredity and Environment on development (theoretical perspective).	
Unit – 2 Prenatal development	12 Hrs
<ul style="list-style-type: none">* Prenatal Development - conception, pregnancy, signs, symptoms, discomforts, complications, stages of prenatal development, factors affecting prenatal development.* Child Birth - Process and types of birth, birth complications.	
Unit – 3 Neonate and Infancy	12 Hrs
<ul style="list-style-type: none">* The Neonate : appearance, size proportion and care, physiological functioning and behavior patterns* Infancy (from one month to 2 years) : physical development and motor skills, emotional development, cognitive development and social development.* Habit and habit formation.	
Unit –4 Pre-school and Nursery school	12 Hrs
<ul style="list-style-type: none">* Pre-school child (2-6 years): physical growth and motor skills social behavior, intellectual development, pre-school child's vocabulary, discipline and guidance of pre-school child.* Nursery school - essentials of a nursery school, building, equipment and personnel, programme in the nursery school, values of play, parent education, types of pre-school - creches, anganwadies, day care centres,	

balawadies.

* Methods of child study.

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
The importance of Early Childhood education for future learning.		X		X		X						X
To learn how to organize and manage a good nursery school.	X	X			X					X		
To build confidence and self-esteem.		X		X	X	X						

Practical Course:

Paper Code: BSHHSPN301	
Total Contact Hours: 52 Hrs	Course Credits:2
List of Experiments to be conducted	
1. Observation of different developments among children. <ul style="list-style-type: none"> i. Physical development ii. Motor development iii. Emotional development iv. Language development v. Intellectual development 2. Rhyme 3. Story telling 4. Basic activities 5. Review of Literature 6. Write a report on cultural practices related to pregnancy and early childhood. 7. Visit to nursery schools/Anganwadi.	

Pedagogy Practical:

Formative Assessment = 50 marks	
Assessment Occasion / type	Weightage in Marks
Lab record and attendance	5
Practice exercise	5
Total	40 marks (Practical exam) + 10 marks = 50 marks

References:

- Life span development - a topical approach, third edition, Jhon W. Santrock, Tata McGraw-Hill edition.
- Human development, eleventh edition, Diane Papalia, Sally Olds, Ruth Field Man, MaGraw Hill.
- Human development, Ninth edition, Diane Papalia, Sally Olds, Ruth Field Man, MaGraw Hill.
- Developmental Psychology, a lifespan approach, Elizabeth Hurlock, McGraw Hill.
- Understanding Human Development, third edition, Weddy L. Dunn, Grace Jeroig McGraw Hill.
- Nayak A.K. (2007) Guidance and counseling, APH Publishing Corporation

SEMESTER-III
PAPER-VIII

Course Title: APPAREL DESIGNING	
Paper Code: BSHHSCS302	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To create aesthetically pleasing garments
- To understand consumer needs
- To understand textiles and materials

Course Outcomes (COs):

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

- * Enable the students to develop skills in apparel designing and constructing garments.
- * Gain knowledge in fundamentals of fashion and garment construction technique.
- * Understand the properties of various textile materials

SEMESTER III

Paper code: BSHHSCS 302 APPAREL DESIGNING	
Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT	48 Hrs.
Unit – 1 Fashion and Clothing	12 Hrs
<ul style="list-style-type: none">* Fashion Interpretation - Terminology concepts, characteristics and Fashion cycle influence, Dictionary of Fashion Cycle Influence, Dictionary of Fashion terms and role of Fashion Designer.* Clothing in relation to season, occasion, size and figure, figure problem and optical illusion.	
Unit – 2 Grooming and Design	12 Hrs
<ul style="list-style-type: none">* Good Grooming and Psychological aspects of Clothing - Clothing and wearers, Personality factors and Clothing Choices, Selection of Fabrics, Factors Effecting Choice of Clothing.* Elements of Design - Line, Colour, Texture.* Principles of Design in Clothing - Balance, Rhythm, Proportion, Emphasis, Harmony.	
Unit – 3 Traditional Indian Textiles	12 Hrs
<ul style="list-style-type: none">* . Traditional Indian Textiles and Embroideries - Dacca Muslin, Baluchar Buttedar, Himrusand Amrus, Kalamdar, Patola, Bhandhnius, Punjabi Phulkari, Kanthasof Bengal, Embroidery of Kashmir, Chikankari and Kasuthi of Karnataka.	
Unit –4 Body measurements and Pattern making	12 Hrs
<ul style="list-style-type: none">* Importance of Taking Body Measurements - Methods of Taking Measurements, steps in Preparing Fabrics for Construction.* Pattern making - Principles and Techniques involved in Pattern Making.	

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Enable the students to develop skills in apparel designing and constructing garments.			X	X		X						X
Gain knowledge in fundamentals of fashion and garment construction technique.	X	X		X	X							
Understand the properties of various textile materials		X	X		X	X						

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

Practical Course:

Paper Code: BSHHSPN302	
Total Contact Hours: 52 Hrs	Course Credits:2
List of Experiments to be conducted	
<ul style="list-style-type: none"> ● Taking Body Measurements ● Steps in Pattern Making 	

- Darning, Patch work and garment enrichment
- Drafting, Tracing and Construction of 'A' line Frock for a Preschooler/Saree petticoat/Apron.
- Computer Aided Design - Visit to study software operation of various machines write the report.
- Make a study of collection of famous designers and their famous innovations.

Pedagogy Practical:

Formative Assessment = 50 marks	
Assessment Occasion / type	Weightage in Marks
Lab record and attendance	5
Practice exercise	5
Total	40 marks (Practical exam) + 10 marks = 50 marks

References:

1. Mungal, R. S., 2015, Textiles Fibre to Fabric, Satyam Publishers & Distributors, Jaipur.
2. Premalata Mullick., 2011, Textbook of Home Science, New Delhi, Kalyani Publishers.
3. Navneet Kaur., 2012, "Comdex Fashion Design" Vol II, Dreamtech Press, New Delhi.
4. Durga Deulkar., 2002, "Household Textiles and Laundry Work," Atma Ram & Sons Publishers.
5. Ziffzer, 1974, Clothing Construction practicals - Prasaraanga Mysore university.

SEMESTER-III
PAPER-IX

Course Title: COMMUNITY NUTRITION	
Paper Code: BSHHSCS303	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To promote healthy eating habits
- To improve nutritional health
- To prevent nutrition related disorders

Course Outcomes (COs):

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

- * To gain knowledge regarding nutritional needs at different stages of growth.
- * To understand the concept of growth promotion in the community.
- * To identify the nutritional disparities in vulnerable populations.

SEMESTER III

Paper code: BSHHSCS 303 COMMUNITY NUTRITION	
Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT		48 Hrs.
Unit – 1	Introduction	12 Hrs
<ul style="list-style-type: none">* Basic principles of meal planning, factors affecting meal planning.* Explanation of the terms : Health, RDA, Adequate intake, Balanced diet, Food guide pyramid.* Nutrition during Infancy - Advantages of breast milk, bottle feeding and its effect on child health and weaning foods.		
Unit – 2	Nutritional needs of Children	12 Hrs
<ul style="list-style-type: none">* Growth and development, RDA, RFA, EAR, Dietary guidelines and nutrition needs of pre-school children, school age children and adolescents.* Nutritional programmes.		
Unit – 3	Nutritional needs during Pregnancy and lactation	12 Hrs
<ul style="list-style-type: none">* Nutrition during pregnancy and lactation : Signs, common problems and complications during pregnancy. RDA, RFA, dietary guidelines and nutritional needs of pregnant and lactating mother.* Nutritional programmes for pregnant and lactating mother.		
Unit –4	Nutritional needs for Geriatrics	12 Hrs
<ul style="list-style-type: none">* Geriatric nutrition : Physiological changes, RDA, dietary guidelines and nutritional needs.		

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
To gain knowledge regarding nutritional needs at different stages of growth.		X		X		X						X
To understand the concept of growth promotion in the community.	X	X			X					X		
To identify the nutritional disparities in vulnerable populations		X		X	X	X						

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

Practical Course:

Paper Code: BSHHSPN303	
Total Contact Hours: 52 Hrs	Course Credits:2
List of Experiments to be conducted	
<ul style="list-style-type: none"> ● Weaning foods ● Normal diet for <ul style="list-style-type: none"> ○ a. Pre-school b. School age child c. Adolescent girl ● Diet for pregnant/lactating mother. 	

Pedagogy Practical:

Formative Assessment = 50 marks	
Assessment Occasion / type	Weightage in Marks
Lab record and attendance	5
Practice exercise	5
Total	40 marks (Practical exam) + 10 marks = 50 marks

References:

1. Antia FP (2005) Clinical Nutrition and Dietetics, Oxford University Press, New Delhi.
2. Mahan LK, Arlin, M.T.(2000) Krause's Food Nutrition and Diet Therapy 11th edition, W.B. Saunders Company, London.
3. Robinson, C.H; Lawler, M.R.Chenoweth, W.L; and Garwick, A.E (1986) : Normal
4. Shubhangini A Joshi (2002) : Nutrition and Dietetics 2nd edition, Tata mc Graw-Hill Publishing Company Limited, New Delhi.
5. Srilakshmi B. (2005) : Dietetics, 5th edition, New Age International(P) limited Publishers, New Delhi.
6. Therapeutic Nutrition, 17th Ed., Mac Millan Publishing Co.
7. Williams's (1989) : Nutrition and Diet therapy. 6th edition. Times Mirror/Mosby College Publishing St.Louis.

SEMESTER-III

Course Title: ELECTIVE I - NUTRITIONAL BIOCHEMISTRY	
Paper Code: BSHHSCE304	Course Credits: 3
Total Contact Hours: 32Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To understand the structural and functional concepts of nutrients
- To understand the nutrient metabolism
- To apply biochemical principle to nutrition.

Course Outcomes (COs):

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

- Comprehend basic concepts of biochemistry including structure, functions and metabolism of carbohydrates, proteins, and lipids.
- Understand the functions, mode of action of enzymes and nucleic acids.
- Infer the errors of metabolism with reference to macronutrients.

SEMESTER III

Paper code: BSHHSCE304 ELECTIVE I - NUTRITIONAL BIOCHEMISTRY	
Number of Theory Credits	Number of lecture hours/semester
3	32

CONTENT	32 Hrs.
Unit – 1 Chemistry And Nutritional Importance of Carbohydrates and Proteins	12 Hrs
<ul style="list-style-type: none"> * Introduction to biochemistry and relation to nutrition * Carbohydrates- Definition, structural classification, metabolism of glucose- Glycolysis, krebs cycle, gluconeogenesis, blood glucose maintenance and its regulation. * Structure and Classification of amino acids, primary, secondary and tertiary structure of proteins, hydrolysis of proteins, denaturation, precipitation and coagulation, urea cycle, nitrogen balance. 	
Unit – 2 Chemistry and Nutritional importance of Lipids and Nucleic Acids	10 Hrs
<ul style="list-style-type: none"> * Chemical composition of fats, ketone bodies, Ketogenesis and ketosis, cholesterol- biosynthesis, importance of lipo protein. * Nucleic acids - Definition, Components, nucleotides, Nucleosides, structure and functions of DNA and RNA, types of RNA. 	
Unit – 3 Chemistry and Nutritional importance of Enzymes; Metabolic errors	10 Hrs
<ul style="list-style-type: none"> * Classification, factors affecting enzyme activity, mechanism of enzyme action, enzyme inhibition, coenzymes , isoenzymes. <p>Elementary knowledge on inborn errors of metabolism with reference to carbohydrate – Fructosuria, Galactosemia. Protein – albinism. Lipids – Tay-sach's disease</p>	

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Comprehend basic concepts of biochemistry including structure, functions and metabolism of carbohydrates, proteins, and lipids.	X				X	X						X
Understand the functions, mode of action of enzymes and nucleic acids.	X			X	X					X		
Infer the errors of metabolism with reference to macronutrients.		X			X	X					X	

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

References:

- .Lehninger, A.L, Biochemistry, worth publishers INC, New York, 2000.
- Ambiga Shanmugam, Fundamentals of biochemistry for Medical students,Karthik printers, 2002.
- Nutritional Biochemistry, 2nd edition Tom Bridt, Academic press 2006.
- Powar and Chatwal, Biochemistry, Himalaya publishing house, 2000.
- Ranganatha Rao, K, Text book of Biochemistry, Prentice Hall of India, NewDelhi, (2000).
- Sathyanarayanan, U.,Chakrapani, U., textbook of biochemistry, 3rd edition,books and allied (p) ltd kolkata, 2010.
- Lehinger's principle of Biochemistry (2000), Nelson and Cox.
- Harper's Biochemistry - Rober K. Murray, Daryl K. Grammer, Mc GrawHill,Lange Medical Books
- Biochemistry - Dr. Ambica shanmugam, published by author 2006.
- Illustrated biochemistry-lippincott's,5th edition

SEMESTER-III

Course Title: ELECTIVE –II EVENT MANAGEMENT AND HOSPITALITY SERVICES	
Paper Code: BSHHSCE305	Course Credits: 3
Total Contact Hours: 32Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To develop planning and organizational skills
- To enhance customer service and hospitality skills
- To understand the business and marketing aspects of events

Course Outcomes (COs):

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

- * Understand and develop skills in hospitality services.
- * Develop skill in meeting the demands of event management industry.
- * Formulate context appropriate action plans for challenges identified in hospitality services and event management industry.

SEMESTER III

Paper code: BSHHSCE305 ELECTIVE –II EVENT MANAGEMENT AND HOSPITALITY SERVICES	
Number of Theory Credits	Number of lecture hours/semester
3	32

CONTENT		32 Hrs.
Unit – 1	Basics of Event Management	10 Hrs
<ul style="list-style-type: none">* Introduction to Events - Scope, concept, Characteristics, types of events, 5 C's of Events (Conceptualization, costing, Canvassing, customization & carrying out)* Decision making in the event – What is Decision making, Steps in Decision making Process, Kinds of Decisions, Factors affecting Decision making of event planner.		
Unit – 2	Event Planning and Skills in Event Management	10 Hrs
<ul style="list-style-type: none">* Participant Management, Resource Management, Problem Solving in Crisis Management, Staffing* Leadership Skills, Communication Skills, Presentation Skills, Management Skills, Event Requirements And Management.* Basic Event Accounting - The Budget, Financial management, Promotion and publicity* Occupational Safety and Security of resources, Safety – Techniques and Tips Security – Need, types and problems, Occupational Safety and Health – Employer rights, responsibilities, First Aid		
Unit – 3	Hospitality Management	12 Hrs
<ul style="list-style-type: none">* Introduction to Hospitality Management, Scope Hospitality management in different industries* Concepts of Hospitality Management - operations management, tourism and event management.* Hospitality Services at hotel industry - Front Desk Management		

(Reception) Servicing Rooms and General Cleaning Building and Food Service

* Risk Management - Types of Risks, Process of risk Management – Identify, Assess and Manage the risk & hazard.

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Understand and develop skills in hospitality services.			X	X			X					X
Develop skill in meeting the demands of event management industry.		X	X		X					X		
Formulate context appropriate action plans for challenges identified in hospitality services and event management industry.	X			X		X			X			

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

References:

- Abhishek Arora, Karnataka University, Business communication skills (MCC, XZ:8M4 ARO)
- Athul Shrivstava, 'Modern Hospitality and Tourism Management', 2010, ISBN 978-93-80540-98-6.
- Diwaker Sharm & Ajay Kumar, Event Planning & Management
- P D Chaturvedi & Mukesh Chaturvedi, Business Communication- Skills, Concepts & application, (MCC XZ:8M4, CHA).Pondichery University, Dist Education Study Material
- Premavathi Seetharaman, Sonia Batra & Preethi Mehra, An Introduction to Family Resource management.
- R K Madhukar, Business Communication, (MCC XZ:8M4 MAD)
- Sanjay Singh Gaur & Sanjay V Saggere, Event Marketing & Management, (MCC library, XZ74:51 GAU)
- Sita Ram Singh, Event Management, MCC Library, XZ74:8
- Wagen & Carlos; Event Management for tourism, cultural business & sporting Events

**SEMESTER-IV
PAPER-X**

Course Title: 301 LIFE SPAN DEVELOPMENT: SCHOOLAGE TO ADULTHOOD	
Paper Code: BSHHSCS301	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To understand developmental stages
- To explore developmental influences
- To enhance quality of life

Course Outcomes (COs):

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

- * Different developmental tasks in each stage of life.
- * To develop better socio emotional well-being
- * Better understanding of human development

SEMESTER IV

Paper code: BSHHSCS 301 LIFE SPAN DEVELOPMENT: SCHOOLAGE TO ADULTHOOD	
Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT	48 Hrs.
Unit – 1 Introduction to School age	12 Hrs
<ul style="list-style-type: none">* Introduction to school age - Definition, Developmental tasks, physical, social, emotional, moral and intellectual development.* Common health problems during school age - sore throat, cold and cough, flue, breathing problems, stomach ache, dental carries/oral, ocular health, bed wetting, diarrhoea, malaria.* Role of immunization.	
Unit – 2 Introduction to Adolescence	12 Hrs
<ul style="list-style-type: none">* Adolescence - definition, developmental tasks, physical changes, puberty, growth spurt, primary and secondary sex characteristics, role of confusion, ego identity.* Counselling for Adolescence, Early marriage and its effects	
Unit – 3 Problems in Adolescence	12 Hrs
<ul style="list-style-type: none">* Problems and Special problems in adolescents, effects of substance abuse and its risks, influence of peer on adolescents, role of nutrition, eating disorder.* Concept of small family norms.	
Unit –4 Influence of Parenting	12 Hrs
<ul style="list-style-type: none">* Influence of various parenting styles on development, behaviour and functioning during childhood and adolescence.* Different stages of childhood and adolescence.	

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Different developmental tasks in each stage of life.	X		X		X						X	
To develop better socio emotional well-being		X	X		X					X		
Better understanding of human development				X		X			X		X	

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

Practical Course:

Paper Code: BSHHSPN104	
Total Contact Hours: 52 Hrs	Course Credits:2
List of Experiments to be conducted	
<ul style="list-style-type: none"> ● Participation in preschool with visual aids, <ul style="list-style-type: none"> a. Nature experience b. Science experience 	

- c. Dramatization
- Creative activities.
 - Case study of an adolescent - including study of self, family relationship and peer relationship.

Formative Assessment = 50 marks	
Assessment Occasion / type	Weightage in Marks
Lab record and attendance	5
Practice exercise	5
Total	40 marks (Practical exam) + 10 marks = 50 marks

References:

- Life span development - a topical approach, third edition, Jhon W, Santrock, tata McGraw-Hill edition.
- Human development, eleventh edition, Diane Papalia, Sally Olds, Ruth Field Man, MaGraw Hill.
- Human development, ninth edition, Diane Papalia, Sally Olds, Ruth Field Man, MaGraw Hill.
- Developmental psychology, a lifespan approach, Elizabeth Hurlock, McGraw Hill.
- Understanding Human Development, third edition, Weddy L., Dunn, Grace JeroigMcGraw Hill.
- Nayak A.K., (2007) Guidance and counseling, APH publishing corporation.

SEMESTER-IV
PAPER-XI

Course Title: FOOD PRESERVATION	
Paper Code: BSHHSCS301	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To extend shelf life and prevent spoilage
- To ensure food safety and hygiene
- To maintain nutritional quality and values

Course Outcomes (COs):

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

- * The basic concepts and parameters of preservation techniques.
- * Learn to purchase and preserve different foods.
- * Learn various quality and preservation techniques used in various foods.

SEMESTER IV

Paper code: BSHHSCS 301 FOOD PRESERVATION	
Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT	48 Hrs.
Unit – 1 Introduction to Food Preservation	12 Hrs
<ul style="list-style-type: none">* Food preservation - Definition, importance of food preservation, Causes of food spoilage - microorganisms, enzymes, insects, parasites and rodents, environmental factors and measures to control them.* Classification of food by ease of spoilage, General principles of food preservation.* Methods of food preservation- Asepsis(keeping out of microorganisms), maintenance of aseptic condition, removal of microorganisms - clarification, filtration, centrifugation, thermal processing (blanching, pasteurization, sterilization and microbial death rate), food drying and dehydration, cooling and freezing, food preservation using chemicals, irradiation.	
Unit – 2 Sugar and Salt Concentrates	12 Hrs
<ul style="list-style-type: none">* Sugar concentrates - general principles, methods of preparation of jam, jelly and marmalade, tests of doneness, problems in jam and jelly preparation, theory of gel formation, factors affecting gel formation.* Salt concentrates - general principles, role of ingredients in preparation of pickles, and preparation of sauerkraut.	
Unit – 3 Methods of Food Preservation	12 Hrs
<ul style="list-style-type: none">* Canning, vacuum packing, freezing, refrigeration, smoking, fermentation, pasteurization - definition, types(if any), process, its advantages and disadvantages.* Emerging techniques in food preservation - pulsed electric field, High Pressure Processing, modified atmospheric packaging, irradiation - definition, application, advantages and disadvantages.	

Unit –4	Drying and Dehydration	12 Hrs
<ul style="list-style-type: none"> * Drying - definition, general principles, methods and types of driers, factors controlling drying and dehydration. * Dehydration - definition, principles, pre-treatments for drying, changes during drying, effect of drying on nutritive value, factors influencing dehydration. * Sun drying vs. artificial drying. 		

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
The basic concepts and parameters of preservation techniques.	X		X				X			X		
Learn to purchase and preserve different foods.	X		X		X				X			
Learn various quality and preservation techniques used in various foods.		X		X		X			X			

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

Practical Course:

Paper Code: BSHHSPN104	
Total Contact Hours: 52 Hrs	Course Credits:2
List of Experiments to be conducted	
<ul style="list-style-type: none"> ● Preparation of pickles ● Preparation of jam and jelly ● Preparation of chutney powder ● Visit to food industry. 	

Pedagogy Practical:

Formative Assessment = 50 marks	
Assessment Occasion / type	Weightage in Marks
Lab record and attendance	5
Practice exercise	5
Total	40 marks (Practical exam) + 10 marks = 50 marks

References:

- Frazier WC, Westoff DC (1998) Food microbiology 4th edition, Tata Mc Graw Hill publication Co., Ltd.
- Prescott SC, Proctor BE (1937) Food technology, McGraw Hill.
- Desroier NV (1963) The technology of Food preservation, AVI Pub. Co.
- Lal G Siddappa GS, Tandon GL (1960) Preservation of food and vegetables, ICAR, New Delhi.
- Manay NS, Shadaksharaswamy M (2010) Foods - Facts and principles, New Age International Publ., New Delhi.

SEMESTER-IV
PAPER-XII

Course Title: RESOURCE MANAGEMENT	
Paper Code: BSHHSCS301	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To optimizing resource use
- To conserve resources
- To minimize waste and to reduce cost

Course Outcomes (COs):

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

- * Develop an understanding of the principles of Home Management.
- * Develop experience and technique in the field of household equipment's and purchases.
- * Develop efficiency with enhanced reputation

SEMESTER IV

Paper code: BSHHSCS 301 RESOURCE MANAGEMENT	
Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT	48 Hrs.
Unit – 1 Introduction to Resource Management	12 Hrs
<ul style="list-style-type: none">* Meaning & processes of family resource management.* Steps in Decision making and types of decisions* Resources –classification, characteristics and factors affecting use of resources.	
Unit – 2 Time and Household Equipments	12 Hrs
<ul style="list-style-type: none">* Time as a resource –steps in time plan, its importance, tools in time management, peak load, work curve and ret period.* Household equipments - use and care of different household equipments: cooking stove, refrigerator, pressure cooker, iron box, mixer, oven, washing machine and vacuum cleaner.* A study on modern gadgets available in the market.	
Unit – 3 Energy and Work Simplification	12 Hrs
<ul style="list-style-type: none">* Energy –fatigue, types of fatigue and relieving methods.* Work simplification –definition, importance, principles and techniques.* Mundel’s classes of change.	
Unit –4 Money and Budget	12 Hrs
<ul style="list-style-type: none">* Money-income-types and ways of supplementing family income* Family budget- definition, limitations, advantages.* Steps in making a budget; maintenance of accounts. Account keeping methods.	

- * Saving- need, saving institutions.
- * Consumer education -Rights, responsibilities, problems and protection.

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Develop an understanding of the principles of Home Management.	X			X		X					X	
Develop experience and technique in the field of household equipment's and purchases.		X	X		X					X		
Develop efficiency with enhanced reputation		X		X		X		X				

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

Practical Course:

Paper Code: BSHHSPN104	
Total Contact Hours: 52 Hrs	Course Credits:2
List of Experiments to be conducted	
<ul style="list-style-type: none"> ● Survey of global resources; Solar/Water/Wind/biogas etc. ● Time and activity chart; for one full working day, half working day and a holiday. ● Techniques of work simplification - Flow process chart/ pathway chart with symbols and activity. ● A study on Peak loads for working women and home maker with alternate time plans. ● Survey on Modern household equipment available in the market. ● Different types of kitchen plan. 	

Pedagogy Practical:

Formative Assessment = 50 marks	
Assessment Occasion / type	Weightage in Marks
Lab record and attendance	5
Practice exercise	5
Total	40 marks (Practical exam) + 10 marks = 50 marks

References:

- Deshpande, R.S., (1980), Modern ideal homes for India, Education Deshpande publications, India.
- Nickel, P. and Dorsey, J. M. (1986) Management in Living; 3rd edition, John Wiley & Sons New York.
- Gross, Crandall & Kroll (1980)' Management for Modern Families' Prentice Hall, New Jersey.
- Varghese, Ogale and Srinivasan (1985), 'Home Management 'Wiley Eastern Ltd., New Delhi.
- Bela Bhargava (2005) 'Family Resource Management & Interior Decoration, University Book House (p) Ltd.
- Premalatha Mullick (2011) "Text Book of Home Science" Kalyani Publishers, New Delhi.

SEMESTER-III

Course Title: ELECTIVE –I FOOD MICROBIOLOGY	
Paper Code: BSHHSCS301	Course Credits: 3
Total Contact Hours: 32Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To identify microorganisms
- To develop strategies to control microbial growth
- To ensure food safety

Course Outcomes (COs):

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

- * Understand the concepts of microbes in food and human welfare.
- * Infer the role of microbial spoilage of various foods and its intoxications.
- * To ensure food safety and improve food quality

SEMESTER IV

Paper code: BSHHSCS ELECTIVE I: FOOD MICROBIOLOGY	
Number of Theory Credits	Number of lecture hours/semester
3	32

CONTENT		32 Hrs.
Unit – 1	Introduction Food Microbiology	10 Hrs
<ul style="list-style-type: none">* Fundamentals of Microbiology - History and development of microbiology, Scope and importance of food microbiology, Economic importance of yeast, moulds and bacteria, Bacterial growth curve, Factors affecting the survival and growth of microorganisms in food.* Intrinsic and Extrinsic parameters that affect microbial growth. Intrinsic factors for growth - Generalized, nutrient effect, pH, buffer, anaerobic/aerobic conditions, moisture content, temperature, gaseous atmosphere.		
Unit – 2	Microbiology of Water and different Foods	10 Hrs
<ul style="list-style-type: none">* Water -Sources, bacteriology of water supplies - Bacteriological examination and purification of water.* Types of microorganisms & Sources of contamination, Types of spoilage, prevention and control* Milk and Milk products, Vegetables & fruits, cereal and cereal products, Meat, fish and poultry Role of Microbes in Fermented foods and Genetically Modified food		
Unit – 3	Food borne diseases	12 Hrs
<ul style="list-style-type: none">* Food infections- Salmonellosis, Shigellosis, Vibrio gastroenteritis, E.Coli, Hepatitis A and Shellfish poisoning.* Food Borne Intoxication -Staphylococcal poisoning, Bacillus cerues poisoning, Botulism - Mycotoxins- Aflatoxicosis, Ergotism - Bacterial and viral food borne disorders		

* Food-borne important animal parasites - Food borne diseases and their outbreak

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Understand the concepts of microbes in food and human welfare.	X			X		X				X		
Infer the role of microbial spoilage of various foods and its intoxications.		X	X		X					X		
To ensure food safety and improve food quality		X		X		X		X				

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

References:

- Bibik Ray “Fundamental Food Microbiology” Third edition – 2005 CRC Press London
- Thomas J. Montville; Kalmia E. Kniel; Karl R. Matthews : “Microbiology an Introduction” Fourth Edition Year: 2017
- Rajan Nijhawan “Food Safety & Standards Act, Rules & Regulations” 24th Edition, 2023
- Sunetra Rhoday “Food hygiene and Sanitation” Second revision 2017.
- S.K. Goyal Suresh Chandra, Durvesh Kumari A Competition Book For Food Safety Officer - Main Subject : An Objective Approach Unknown Binding – Student Calendar 2019 jain brothers

SEMESTER-IV

Course Title: BSHHSCS ELECTIVE: II GARDEN AND LANDSCAPE DESIGNING	
Paper Code: BSHHSCS301	Course Credits: 3
Total Contact Hours: 32Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To create aesthetically pleasing spaces
- To enhance outdoor living
- To promote sustainability

Course Outcomes (COs):

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

- * Understand the importance of cultivating ornamental plants and their scope in entrepreneurship.
- * Raise and sustain indoor plants skillfully.
- * Draft landscape plans for commercial and residential sectors.

SEMESTER IV

Paper code: BSHHSCS ELECTIVE: II GARDEN AND LANDSCAPE DESIGNING	
Number of Theory Credits	Number of lecture hours/semester
3	32

CONTENT		32 Hrs.
Unit – 1	Concept and Classification of Landscape Garden	10 Hrs
<ul style="list-style-type: none">* Introduction to Landscape Garden Definition, Importance and Scope of landscape garden* Types of Gardens -English garden, French garden, Mughal garden, Japanese garden, Italian garden and Persian garden* Gardens based on styles–Formal , Informal and Free style		
Unit – 2	Layout, Design Principles and Components in Landscape	10 Hrs
<ul style="list-style-type: none">* Layout- The foreground area, The private living area and The service area* Design Elements-Line, Form, Color, Texture, Space and Pattern in garden layouts Beauty Principles-Balance, Proportion, Scale, Rhythm and Harmony – adoption in garden and landscape layouts* Classification of Landscape and plants Classification of ornamental plants: Annual, Biennial and Perennial		
Unit – 3	Indoor Gardening, Garden Decor and Adornment	12 Hrs
<ul style="list-style-type: none">* Factors considered for growing indoor plants, selection and placement ,types of indoor plants ,care and maintenance* Basic requirements for maintenance of garden plants-temperature, light, water, air, nutrients and space. garden tools and equipment, insecticides and pesticides, pruning		

methods

* Bonsai-plants suitable for bonsai culture, techniques and styles

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Understand the importance of cultivating ornamental plants and their scope in entrepreneurship.	X				X	X						X
Raise and sustain indoor plants skillfully.		X	X		X				X			
Draft landscape plans for commercial and residential sectors.		X		X				X		X		

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

References:

- Ashraf, A. M. (2010). A Handbook of Landscape Gardening and Environment. India: Agrobios
- Bose et al., (2011). Floriculture and Landscaping. Calcutta: Allied Publishers
- Bruce, S. (2016). Thinking about Landscape Architecture: Principles of Design Profession for the 21st Century. London: Routledge Taylor and Francis group
- Carols, S. (2017). Eco Landscape Design. UK: Scitus Publisher
- Encyclopaedia of Landscape Design (2017). Planning, Building and planting Your Perfect Outdoor Space. New Delhi: DK Publishers
- Kumar, N. (2010). Introduction to Horticulture. Nagarcovil: Rajalakshmi Publications
- Larson, A. (2013). Introduction to Floriculture. London: Academic Press Publishers
- Lyall, S. (2012). Designing the New Landscape. California: Thames and Hudson publishers
- Moir, J. (2018). New Landscape Ideas that Work. Vermont: Taunton Press Inc
- Shaheer, et al., (2013). Landscape Architecture in India: a Reader. New Delhi: L A Publisher
- Singh, A.K., and Sisodia. A. (2017). Text Book of Floriculture and Landscaping. New Delhi: New India Publishing Agency.

**SEMESTER-IV
COMPULSORY PRACTICAL PAPER**

Course Title: PUBLIC HEALTH NUTRITION	
Paper Code: BSHHSCS101	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To understand community-based interventions
- To provide nutritional education
- To collaborate with stakeholders to promote public health

Course Outcomes: (COs)

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

- * Know basics of public health nutrition and understand need of prioritizing nutritional issues.
- * Assess nutritional health status of community.
- * Understand nutritional programmes and policies and apply ICT in formulation of community nutrition education programme.

SEMESTER IV

COMPULSORY PRACTICAL PAPER PUBLIC HEALTH NUTRITION

Paper code: BSHHSCS 101	
Number of Credits	Number of hours/semester
2	48

CONTENT	48 Hrs.
Unit – 1 Introduction to Public Health Nutrition	12 Hrs
<ul style="list-style-type: none">* Concept and Scope of Public Health Nutrition, Roles and responsibilities of public health nutritionist.* Optimum health, malnutrition (under nutrition, overweight, obesity, micronutrient deficiency), nutrition intervention, nutrition monitoring & surveillance, nutrition education, morbidity, mortality rate.* Nutrition – Consequences of Malnutrition, Strategies to Overcome Malnutrition, Nutrition, and food security.	
Unit – 2 Nutritional Status and Assessment	12 Hrs
<ul style="list-style-type: none">* Introduction, Definition of Nutritional Status, Nutritional assessment-, Anthropometry and other clinical measures, Instruments.* Techniques commonly used in public health (weight, height & BMI)* WHO growth standards, its use, implications, classification to define mild, moderate & severe forms of malnutrition.	
Unit – 3 - Nutritional Intervention	12 Hrs
<ul style="list-style-type: none">* Specific nutrient Deficiency signs & symptoms (Vitamin A, Iron, Iodine, B complex vitamins), PEM.	

National nutrition policy – National Prophylaxis programmes (vitamin A, Iron, iodine etc.), ICDS, Mid day meal

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Know basics of public health nutrition and understand need of prioritizing nutritional issues.	X		X				X					X
Assess nutritional health status of community.		X		X	X				X			
Understand nutritional programmes and policies and apply ICT in formulation of community nutrition education programme.		X			X			X		X		

Pedagogy Practical:

Formative Assessment = 50 marks	
Assessment Occasion / type	Weightage in Marks
Lab record and attendance	5
Practice exercise	5
Total	40 marks (Practical exam) + 10 marks = 50 marks

References:

- Scrimshaw NS, Taylor CE, Gordon JE. Interactions of nutrition and infection. Geneva: WHO; 1968.
2. Gwatkin D, Wilcox J, Wray J. Can health and nutrition interventions make a difference? Washington DC: Overseas Development Council; 1980. (Monograph13)
 3. WHO; UNICEF. The declaration of Alma Ata. International conference on primary health care jointly sponsored by WHO and UNICEF. Geneva: WHO; 1978.
 4. WHO; UNICEF. Integrated Management of Childhood Illness, chart booklet. Geneva: WHO; 2008.
 5. Maternal and child undernutrition. Lancet. 2008;371(9608):270–273. [7 March 2013]; <http://www.thelancet.com/series/maternal-and-child-undernutrition>. [PubMed]
 6. Allen LH, Gillespie SR. What works? A review of the efficacy and effectiveness of nutrition interventions. Geneva and Manila: ADB and ACC/SCN, Manila; 2001. (ACC/SCN Nutrition Policy Paper No. 19; ADB Nutrition and Development Series No.5)
 8. Victora CG, Habicht JP, Bryce J. Evidence-based public health: moving beyond randomized trials. American Journal of Public Health. 2004;94 (3):400–405. [PMC free article] [PubMed]
 10. Tontisirin K, Winichagoon P. Community-based programmes: success factors for public nutrition derived from the experience in Thailand. Food and Nutrition Bulletin.1999;2000 (3):315–322.
 11. Gillespie S, Mason J, Martorell R. How nutrition improves. Geneva: ACC/SCN; 1996. (Nutrition Policy Discussion Paper No. 15)
 12. World Bank; UNICEF. Combating malnutrition: time to act. Gillespie S, McLachlan M, Shrimpton R, editors. Washington DC: World Bank; 2003.
 13. Mason JB, et al. Community health and nutrition programs. Disease control priorities in developing countries. 2nd edition. Jamison DT, et al., editors. Washington DC: World Bank; 2006. pp. 1063–1074. [PubMed]

**SEMESTER-V
PAPER XIII**

Course Title: NUTRITIONAL MANAGEMENT FOR HEALTH	
Paper Code: BSHHSCS101	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To gain knowledge on dietary guidelines and nutritional requirements
- To understand the impact of lifestyle diseases
- To learn healthy eating habits

Course Outcomes: (COs)

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

- Understand the role of Dietitian and to maintain good nutritional status, correct deficiencies or disease conditions of the patients.
- Gain knowledge on the principles of diet therapy and designing or formulating different therapeutic diets for various disease conditions.
- Develop skill to plan and prepare therapeutic diets for prevention of disease conditions.

SEMESTER V

Paper code: BSHHSCS 101 NUTRITIONAL MANAGEMENT FOR HEALTH	
Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT	48 Hrs.
Unit – 1 Concepts in Diet Therapy	12 Hrs
<p>Introduction to Dietetics - Growth and Scope of Dietetics, MNT-evidence based, Purposes and Principles of Therapeutic Diets, routine hospital diets : liquid diet, semi-solid, regular and bland diet, Modifications of Normal Diets, Classification of the Therapeutic Diets.</p> <p>Role of Dietitians, Characteristics of Dieticians, Diet Counseling, Team Approach to Nutritional Care, Computer Assisted Instructions (CAI) and Use of Technology in diet therapy.</p>	
Unit – 2 Medical Nutrition Therapy for Fever and Food	12 Hrs
<p>Febrile Conditions: Acute and chronic infectious disease-Typhoid, Tuberculosis, HIV and AIDS, Guidelines for management of tuberculosis and infectious diseases.</p> <p>Food Allergy - Definition, Causes, Signs and Symptoms, Types of Allergy, Diagnosis, Dietary Modifications</p>	
Unit – 3 Medical Nutrition Therapy in Weight management	12 Hrs
<p>Medical Nutrition Therapy in Obesity, Underweight Etiology, Clinical symptoms, management.</p> <p>Assessment/Indicators, Lifestyle & Dietary guidelines for the following conditions: Obesity (Bariatric Surgery: types, Management).</p>	
Unit –4 Medical Nutrition Therapy in Diabetes Mellitus	12 Hrs
<p>Diabetes Mellitus: Classification, Risk Factors – Clinical Characteristics, Metabolic changes in Diabetes, Diagnosis of Diabetes Mellitus: (1) Blood Glucose Levels- a) Glycosuria, b) Ketonuria.</p> <p>Oral Glucose Tolerance Test, Glycosylated Hemoglobin, Hb A1C Management</p>	

- Principles of Nutritional Therapy (Type I & Type II)

Acute and Chronic Complications of Diabetes, Diet Modifications, Use of Food Exchange Lists, Insulin-Types and Use, Oral Hypoglycemic Agents, Carbohydrate counting, Glycemic Index, Glycemic Load.

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Understand the role of Dietitian and to maintain good nutritional status, correct deficiencies or disease conditions of the patients.		X		X		X						X
Gain knowledge on the principles of diet therapy and designing or formulating different therapeutic diets for various disease conditions	X		X			X			X			
Develop skill to plan and prepare therapeutic diets for prevention of disease conditions.		X	X				X			X		

Pedagogy Theory

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

Practical Course:

Paper Code: BSHHSPN101	
Total Contact Hours: 52 Hrs	Course Credits:2
List of Experiments to be conducted	
<ul style="list-style-type: none">• Preparation of Hospital Diets- Modification of diet with respect to texture,consistency and nutrients• Modification of Diets in Obesity• Modification of Diets in Underweight• Diets for Febrile Conditions – TB/Typhoid/Dengue• Diets for Diabetes Mellitus	

Pedagogy Practical:

Formative Assessment = 50 marks	
Assessment Occasion / type	Weightage in Marks
Lab record and attendance	5
Practice exercise	5
Total	40 marks (Practical exam) + 10 marks = 50 marks

References:

- Srilakshmi, B. Dietetics, New Age International P. Ltd., New Delhi, 2018.
- Dietary Guidelines of Indians – A Manual, National Institute of Nutrition, Hyderabad, 2015.
- Garg, M. Diet, Nutrition and Health, ABD Publishers, 2006.
- Krause, M.V. and Mahan, L.K. Food, Nutrition and Diet Therapy, 9th Ed., W.B. Saunders Company, Philadelphia, 2019.
- Maimun Nisha, Diet Planning for Diseases, Kalpaz Publishers, 2016.
- Dietary Guidelines of Indians – A Manual, National Institute of Nutrition, Hyderabad, 2011.
- Brown, J (2014). Nutrition now (7th ed). Wadsworth, USA, ISBN- 13:978-1-133-93653-4, ISBN10:1-133-93653-9
- Nelms M, Sucher K (2015). Nutrition Therapy and Pathophysiology. (3rd edition) Cengage Learning, USA. ISBN-13: 978-1305111967, ISBN-10: 1305111966

**SEMESTER-V
PAPER XIV**

Course Title: FAMILY STUDIES	
Paper Code: BSHHSCS101	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To gain knowledge on the structure and functions of families
- To understand the social issues affecting families
- To learn roles and responsibilities of the family members

Course Outcomes: (COs)

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

- Understand interpersonal relationships and family dynamics in contemporary India.
- Describe theoretical perspectives in understanding interpersonal relationships and family dynamics.
- Formulate strategies for developing positive dynamics in different relationships and managing conflict.

SEMESTER V

Paper code: BSHHSCS 101 FAMILY STUDIES	
Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT	48 Hrs.
Unit – 1 Overview of Marriage and Family	12 Hrs.
<p>Definitions: Marriage, Family; Types; Functions of Marriage and Family; Trends in Marriage and Family.</p> <p>Scientific Perspective: Theories of marriage and family; Family research.</p> <p>Building strong families: Communication and conflict resolution, Marital strength, family strength family cohesion and adaptability; Olson Circumplex Model to understand couple and family relationships.</p>	
Unit – 2 Family and Family Life Cycle	12 Hrs.
<p>Family life cycle; Pairing: Sternberg's Theory of Love, romantic relationships, marriage, cohabitation; Singlehood.</p> <p>Kinds of marriage and family: Beginning marriage, youthful marriage, later-life marriages, enduring marriages; Single parent families, remarriage, blended families.</p>	
Unit – 3 Parenthood and Parenting	12 Hrs.
<p>Parenthood and Parenting: Transition to Parenthood; Styles of parenting; Rights and responsibilities in parenting; Parenting changes across the life span</p> <p>Family Health: Family health and wellbeing; Stress and family; Healthcare in crisis, family care giving.</p>	
Unit –4 Challenges in Marriage and family	12 Hrs.
<p>Family Violence and Abuse: Theories and perspectives of violence; Types of Violence; Etiology of violence; Cycle of violence; Legal support.</p>	

Separation and Divorce: Concept of Separation and Divorce; Factors influencing divorce, Divorce process, Consequences of divorce on spouses and children, child custody and divorce mitigation.

Changes in Family ideologies: Changing trends in marriage and family and implications on the individual and society.

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Understand interpersonal relationships and family dynamics in contemporary India.	X				X	X						X
Describe theoretical perspectives in understanding interpersonal relationships and family dynamics.		X	X		X				X			
Formulate strategies for developing positive dynamics in different relationships and managing conflict.		X		X				X		X		

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

Practical Course:

Paper Code: BSHHSPN101	
Total Contact Hours: 52 Hrs	Course Credits:2
List of Experiments to be conducted	
<ul style="list-style-type: none"> • Mapping Family Relationship. • Mate Selection Study among marriage probables • Case Study / Visuals to understand Conflicts • Assessing Family Wellbeing • Literature Review on Violence • Mediation Centre Visit – Family Court • Studying the effect of Separation on children and the single parent (away due to profession/ due to care of elderly parents/ due to illness of any one member in the first circle of blood relatives, due to death, due to divorce. 	

Pedagogy Practical:

Formative Assessment = 50 marks	
Assessment Occasion / type	Weightage in Marks
Lab record and attendance	5
Practice exercise	5
Total	40 marks (Practical exam) + 10 marks = 50 marks

References:

- The Indian Family in Transition - Reading Literacy and Cultural Texts; Editors Sanjukta Dasgupta, MalashriLal, Sage Publication.
- Family Stress Management, A Contextual Approach, 3rd edition, Pauline Boss, Chalandra and Jay A, Sage Publication.
- Human Development and Family – An Addenda On Research And Policy Studies in India, T.S. Saraswathi ,Sage Publications, 1993.
- The Family in India, Structure and Practice, edited by Tulsi Patel, Sage Publication, New Delhi.
- Nurturing Families Around the World, Building Culture and Peace, Edited by Catherine Bernard, and John.J.Shea.
- The Marriage And Family Experience, sixth edition, Bryan Strong, Christine DeVault, West Publishing Company, NewYork.

SEMESTER-V
PAPER XV

Course Title: BAKERY SCIENCE AND CULINARY SKILLS	
Paper Code: BSHHSCS101	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To understand the scientific principles behind baking
- To develop practical skills
- To demonstrate creativity and innovation in bakery science

Course Outcomes: (COs)

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

- To develop in students awareness and skills related to vocation in Baking Technology
- To give them hands on training to enable them to set up their own Baking Units
- To give them concept of Modification of bakery products to make them nutritious and applicable for persons with different requirements

SEMESTER V

Paper code: BSHHSCS 101 BAKERY SCIENCE AND CULINARY SKILLS	
Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT	48 Hrs.
Unit – 1 Introduction to Bakery Science	12 Hrs
History of Bakery, Current status, economic importance of Bakery Industry in India. Product types, nutritional quality and safety of products, standards & regulations. Present Trends - Prospects of Bakery. Raw materials used in Bakery - Wheat: Structure and Composition of wheat, Varieties of Wheat, Wheat products - Whole wheat flour, Maida, semolina, Role of Gluten	
Unit – 2 Role of Ingredients	12 Hrs
Yeast, Yeast Production Enzymes - their functions in dough, Sugar and Milk - Properties and Role of milk and Sugar in Bakery, Leavening, flavouring, Nuts and fruits - their function in bread making, Cocoa and Chocolate	
Unit – 3 Bakery products	12 Hrs
Types of breads, bread faults and remedies. Biscuits: Ingredients - Types of biscuits - Processing of biscuits - faults & Remedies. Cakes - types - Ingredients - Processing of cakes - Problems - Remedies Pizza and pastries - their ingredients and Processing Indian traditional baked products	

Modified bakery Modification of bakery products for people with special nutritional requirements e.g. high fibre, low sugar, low fat, gluten free bakery products.	
Unit –4 Bakery Unit	12 Hrs
Setting up of a Bakery Unit - Bakery equipment required - types - Selection – Maintenance , Bakery norms and Standards, materials for construction of Food Equipments. Illumination and ventilation. Cleaning & sanitization Maintenance of Food Plant Building : Safety Color Code, Roof Inspection, Care of Concrete floors	

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
To develop in students awareness and skills related to vocation in Baking Technology		X			X		X					X
To give them hands on training to enable them to set up their own Baking Units		X		X	X					X		
To give them concept of Modification of bakery products to make them nutritious and applicable for persons with different requirements	X		X				X			X		

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

Practical Course:

Paper Code: BSHHSPN101	
Total Contact Hours: 52 Hrs	Course Credits:2
List of Experiments to be conducted	
<ul style="list-style-type: none">• Preparation of cake• Preparation of biscuit• Preparation of pizza• Preparation of breakfast items• Preparation of sweets• Preparation of Indian Gravies.	

Pedagogy Practical:

Formative Assessment = 50 marks	
Assessment Occasion / type	Weightage in Marks
Lab record and attendance	5
Practice exercise	5
Total	40 marks (Practical exam) + 10 marks = 50 marks

References:

- Dubey, S.C. (2007). Basic Baking 5th Ed. Chanakya Mudrak Pvt. Ltd.
- Raina et.al. (2003). Basic Food Preparation-A complete Manual. 3rd Ed. Orient Longman
- Pvt. Ltd.
- Manay, S. & Shadaksharaswami, M. (2004). Foods: Facts and Principles, New Age
- Publishers.
- Barndt R. L. (1993). Fat & Calorie – Modified Bakery Products, Springer US.
- Samuel A. Matz (1999). Bakery Technology and Engineering, PAN-TECH International
- Incorporated.
- Faridi Faubion (1997). Dough Rheology and Baked Product Texture, CBS Publications.
- Samuel A. Matz (1992). Cookies & Cracker Technology, Van Nostrand Reinhold

SEMESTER-V
PAPER XVI

Course Title: BASICS OF PSYCHOLOGY	
Paper Code: BSHHSCS101	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To understand human behaviour
- To develop self-awareness and to promote mental health
- To study psychological theories and principles

Course Outcomes: (COs)

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

- Understand the psychological concepts underlying human and animal behavior in areas such as learning, cognition and intelligence.
- Gain knowledge in major areas of psychology with emphasis on application in daily life.
- Develop skill to demonstrate a variety of research methods routinely used in psychology.

SEMESTER V

Paper code: BSHHSCS 101 BASICS OF PSYCHOLOGY	
Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT	48 Hrs.
Unit – 1 Introduction to Psychology and Social Psychology	12 Hrs
Definition and goals of psychology, scope of psychology, key perspectives of psychology - psychodynamic, behaviouristic, biopsychological cognitive, socio-cultural, humanistic and evolutionary. Social Psychology - definition, and application, Social perception and person perception (non-verbal cues and schemas), Social influence - Conformity, compliance, obedience. Pro-social behaviour, affiliation, stereotypes, prejudice, discrimination, aggression (strategies to reduce and control aggression).	
Unit – 2 Memory and Learning	12 Hrs
Basic processes - Encoding, Storage and retrieval, Memory process - Sensory, Short term and long-term memory. (Declarative, semantic, episodic, procedural), Memory in children, causes of forgetting, techniques to improve memory. Learning - Definition, Operant - conditioning - punishment, reinforcement, Methods for encouraging behaviors, coping with undesirable behavior, observational learning - Bandura's theory.	
Unit – 3 Higher Cognitive Processes	12 Hrs
Thinking - Definition, basic elements of thought - concepts, prepositions and images. Reasoning - Types of reasoning - deductive, inductive, algorithms, heuristics, sources of errors in reasoning. Creativity - Innovative problem solving, fostering creativity.	

Intelligence - Definition, measuring intelligence - Types of tests - verbal, non-verbal, performance, individual and group tests, speed, power and breadth, culture fair tests, determinants of intelligence - heredity and environment.	
Unit –4 Motivation and Emotion	12 Hrs
<p>Motivation - Definition, Intrinsic and Extrinsic motivation, Theories of motivation - Instinct, drive, incentive and Maslow's theory, range of human motives, biological motives - hunger, (Maladaptive eating problems), Social Motives - affiliation.</p> <p>Emotion - definition, components of emotion - cognitive, physiological and behavioural, emotional intelligence.</p>	

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Understand the psychological concepts underlying human and animal behavior in areas such as learning, cognition and intelligence.		X		X				X				X
Gain knowledge in major areas of psychology with emphasis on application in daily life.		X			X		X			X		
Develop skill to demonstrate a variety of research methods routinely used in psychology.		X	X				X			X		

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks
References:	
<ul style="list-style-type: none">• Feldman, A.R., Understanding Psychology IVth edition, 1996, Megraw Hill, New Delhi.• Baron, A.R., Psychology III edition, 1996, Prentice Hall of India, New Delhi.• Morgan, King, Weisz and Schopler, Introduction to Psychology - VII edition, 1993, Tata Megraw Hill, New Delhi.• Weiten W., Themes and Variations - III edition and VI, 1995-2004, Cole and Thomson, USA.• Plotnik Rod, Introduction to Psychology, VIth edition 2002, Wadsworth - Thomson Learning.	

**SEMESTER-V
PAPER XVII**

Course Title: FASHION STUDIES	
Paper Code: BSHHSCS101	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To understand the fundamentals of fashion
- To learn about textiles and fabrics
- To study fashion trends and the industry

Course Outcomes: (COs)

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

- Comprehend the processes and develop the ability to apply in fashion design.
- Develop the ability for fashion styling, communication, and design concepts.
- Understand Indian and global markets in merchandising.

SEMESTER V

Paper code: BSHHSCS 101 FASHION STUDIES	
Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT		48 Hrs.
Unit – 1	Fashion Terminologies and Theories	12 Hrs
<p>History of Fashion, Evolution of Fashion, Terminology of Fashion Principles of Fashion movement - Theory of Clothing Origin - Fashion cycle - Theories of fashion - Theories of fashion adoption - Principles of Fashion - International Fashion centres.</p> <p>Fashion cycle – Meaning, stages and types. Fashion forecasting - Research Process in Forecasting, Forecasting the fashion with reference to Colour, style, season, different patterns, different fabric swatches, accessories on different themes</p>		
Unit – 2	Fashion Design and Communication	12 Hrs
<p>Application of designing concepts - 8, 10 and 12 head figures, figure types – Garment designing based of figure types, Fashion Illustrations and variations, Factors affecting Fashion- Demographics, Geographic, Psychographics & Behavioural, Economic, Social, Environment, Psychological and cultural influence on clothing.</p> <p>Fashion Journalism, Graphic Design for Fashion, Fashion Broadcasting and Fashion Films, Fashion Styling, Fashion Photography, Fashion Public Relations, Fashion Marketing & Consumer Behaviour</p>		
Unit – 3	Fashion Merchandising and Management	12 Hrs
<p>Retail Fashion Promotion, promotion levels, Marketing Channels, Planning and Direction, Retail Advertising, Merchandising techniques, components of merchandising activities – functions of merchandiser.</p> <p>Visual Merchandising Importance, Store interior, Window displays, Display Techniques, Mannequin draping and decorative displays. Colour, Lighting – Light</p>		

planning and Types. Fixtures – Retail and Apparel Fixtures. Store exterior, display settings, types of fashion shows.
Unit – 4 Fashion Accessories and styling 12 Hrs
Fashion Accessories and styling – Hair styling, makeup its significance with various looks for different garment styles like Formal, Casual, Ethnic / Bridal, Sports. Styling elements: model, accessories, background theme. Styling and the final Visual display for the final photo shoot. Styling for Magazine, Advertising, Styling for Fashion Photography.

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Comprehend the processes and develop the ability to apply in fashion design.	X				X		X				X	
Develop the ability for fashion styling, communication, and design concepts.	X	X				X			X			
Understand Indian and global markets in merchandising.		X			X		X			X		

Pedagogy Theory

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

References:

- Veronica Kemsy, (2017). Fashion Illustration Gowns and Dresses Inspiration, Design Media Publishing Limited, UK.
- SwathiBhalla and Anuraag.S,(2010). Visual merchandising, Tata McGraw Hill Education Pvt. Ltd., New Delhi.
- Navneet Kaur, (2010). Comdex fashion design, Vol III, Designing and showcasing a fashion collection, Dream Tech Press, New Delhi
- Tiziana Paci, (2018). Colour in Fashion Illustration: Drawing and Painting Techniques, Hoaki Books SL, Italy.
- Fashion Forecasting Perna Rita Fairchild Books, New York 1992
- Style wise : A practical guide to Becoming a Fashion Stylist, Shannon Burns, Fairchild Books, 2013
- Dorling Kindersley (2012). Fashion, The Ultimate Book of Costume and Style, Published by Dorling Kindersley Limited; London.
- Dimitri Koumbis, (2020) Fashion Retailing: From Managing to Merchandising, Bloomsbury Publishing, NewDelhi.

**SEMESTER-V
PAPER XVIII**

Course Title: CHILDREN WITH SPECIAL NEEDS	
Paper Code: BSHHSCS101	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:A

- To understand different types of special needs
- To recognize individual differences
- To learn supportive teaching techniques

Course Outcomes: (COs)

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

- Understand the needs of special children.
- Gain knowledge in identification and assessment of special children.
- Develop skill to deal with special children.

SEMESTER V

Paper code: BSHHSCS 101 CHILDREN WITH SPECIAL NEEDS	
Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT	48 Hrs.
Unit – 1 Children with special needs	12 Hrs
<p>Definition, Cocept and classification of children with special needs, Relationship between Delayed development and Disability, Factors influencing disability - Genetic and environment, Incidence and Prevalence in India, rights of Disabled Children.</p> <p>Need for prevention, intervention, education and Rehabilitation of disability, Early Detection, Screening, Identification and assessment in the Community, Understanding the families with a special child.</p>	
Unit – 2 Mentally Challenged and Gifted Children	12 Hrs
<p>Definition, Classification and Terms, Causes and prevention, Characteristics of Children with Mental Retardation and Gifted, Role of family and community in dealing with mentally challenged and gifted children.</p> <p>Children with Sensory Impairment : Visually and auditory challenged - Definition, Classification, Characteristics, Causes, prevalence, Techniques of Identification and assessment, Role of family and community in dealing children with sensory impairment.</p>	
Unit – 3 Children with Learning Disabilites and difficulty	12 Hrs
<p>Definition, Difference between difficulty and disability, problems of labelling, criteria for identification and diagnosis, characteristics, causes and correlates of learning disability, Role of family and parents in dealing with children with learning difficulties.</p> <p>Children with Cerebral Palsy and Orthopedically Disabled - Definition, characteristics, classification and prevalence, causes and associated conditions, prevention and treatment approaches, Role of family and community in dealing</p>	

children with Cerebral Palsy and Orthopedically disabled	
Unit –4 Children with Communication Disorders	12 Hrs
<p>Definition, importance of speech and language, classification, characteristics, causes, role of family and community services in treatment and management.</p> <p>Children with behaviour disorders : Definition, characteristics, classification, different behavioural problems, causes and correlating factors, role of family in treatment and therapy.</p>	

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Understand the needs of special children.		X		X			X					X
Gain knowledge in identification and assessment of special children.		X		X			X		X			
Develop skill to deal with special children		X	X				X			X		

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks
References:	
<ul style="list-style-type: none">• Chopra,G., (2012). Early Detection of Disabilities and persons with disabilities in the community. New Delhi: Engage publications• Chopra,G., (2012). Stimulating Development of Young Children with Disabilities at Anganwadi and at Home: A Practical Guide. New Delhi: Engage publications.• Sharma, N. (Ed)(2010). The Socail Ecology of Disability-Technical Series -3Lady Irwin College. Delhi:Academic Excellence• Mangal, S. K. (2007).Exceptional children: An introduction to special education. New Delhi: Prentice Hall of India• Jangira, N.K.(1997) “Special Educational Needs of Children and Young Adults: An Unfinished Agenda,” Education and Children with Special Needs: From Segregation to Inclusion,Ed. Seamus Hegarty, Mithu Alur, Thousand Oaks: Sage Publications Inc.• Karna, G. N. (1999). United Nations and rights of disabled persons: A study in Indian perspective. New Delhi: A.P.H. Publishing Corporation.• Mani, R. (1988). Physically handicapped in India. Delhi: Ashish Publishing House.• Mastropieri, M. A., & Scruggs, T. E. (2004). The inclusive classroom: Strategies for effective instruction. NY: Pearson.	

SEMESTER-V
COMPULSORY PRACTICAL PAPER

Course Title: BASICS OF FIRST AID	
Paper Code: BSHHSCS101	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To preserve life and to prevent further harm
- To relieve pain
- To promote recovery

Course Outcomes: (COs)

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

- Administering basic life support skills
- Providing first aid during trauma
- Managing Burns and wounds

SEMESTER V

Paper code: BSHHSCS 101 BASICS OF FIRST AID	
Number of Practical Credits	Number of Practical hours/semester
2	48

CONTENT	48 Hrs.
Unit –1 First aid basics and Emergency response	12 Hrs
First aid, importance of first aid, first aider, laws of first aid, contents of an ideal first aid kit, dealing with an emergency. CPR, steps for performing CPR, CPR for newborns and infants, recovery position, first aid in drowning, fractures of bones, causes and types of fractures, dislocation.	
Unit – 2 First aid in burns, wounds and injuries	
Types of burns, danger of burns, first aid in dry burns and scalds, electrical burns, chemical burns, sunburn, heatstroke. Types of wounds- small cuts and abrasions, Head injury- nose bleed, bleeding gums, bleeding from varicose veins, Shocks- causes of shock and its first aid.	
Unit – 3 First aid in poisoning and ingestion of foreign bodies	
Poisoning by swallowing, gases, injections, skin absorption, Animal bites, snake bites and insect stings. First aid in foreign objects entering the sense organs: foreign body in the eye, ear, nose, skin, swallowing of foreign objects.	

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Administering basic life support skills	X		X	X								X
Providing first aid during trauma		X		X	X					X		
Managing Burns and wounds		X	X				X				X	

Pedagogy Practical:

Formative Assessment = 50 marks	
Assessment Occasion / type	Weightage in Marks
Lab record and attendance	5
Practice exercise	5
Total	40 marks (Practical exam) + 10 marks = 50 marks

References:

- LC Gupta's Manual of First Aid, 2nd edition, Jaypee publication
- N.Harris, First Aid and Emergency Care, AITBS publishers, India.
- Rajiva Srivastava, Handbook of Casualty and Emergency, AITBS publishers, India.
- Accident and Emergency service, Rajiva Srivastava, AITBS publishers, India.

VI SEMESTER

PAPER XVIII

Course Title: NUTRITIONAL MANAGEMENT FOR DISEASES	
Paper Code: BSHHSCS101	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To understand the quality of life
- To help maintain healthy body weight
- To help control disease progression

Course Outcomes: (COs)

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

- Understand the role of Dietitian and to maintain good nutritional status, correct deficiencies or disease conditions of the patients.
- Gain knowledge on the principles of diet therapy and designing or formulating different therapeutic diets for various disease conditions.
- Develop skill to plan and prepare therapeutic diets for prevention of disease conditions.

SEMESTER VI

Paper code: BSHHSCS 101 NUTRITIONAL MANAGEMENT FOR DISEASES

Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT	48 Hrs.
Unit – 1 Medical Nutrition Therapy in Gastrointestinal Disorders	12 Hrs
Gastrointestinal, Liver and Gall bladder disorders - Etiology, Clinical Signs and Symptoms, Assessment/Indicators, Lifestyle & Dietary guidelines for the following conditions: Diarrhea, Dysentery, Constipation, Peptic Ulcer, Celiac Disease, Lactose Intolerance, Crohn's Disease, Ulcerative Colitis, Diverticular disease, Jaundice, Hepatitis, Fatty Liver, Cirrhosis, Hepatic Coma.	
Unit – 2 Medical Nutrition Therapy in cardiovascular	12 Hrs
Cardiovascular disorders: Etiology, Clinical Symptoms, Lifestyle & Dietary guidelines for the following conditions: Atherosclerosis, Hyperlipidemia, Ischemic Heart Disease, Congestive Heart Failure.	
Unit – 3 Medical Nutrition Therapy in Kidney Disorders	12 Hrs
Kidney disorders: Hypertension (DASH Diets), Nephrotic Syndrome, Nephrolithiasis, Acute and Chronic Renal Failure, Dialysis – Principles and Types, Kidney Stones.	
Unit –4 Medical Nutrition Therapy in Burns and Cancer	12 Hrs
Burns - Principles, types or classification, complications, dietary guidelines, management. Cancer - Types of Cancer, Signs and symptoms of cancer, risk factors that increases the chances of developing cancer and measures to reduce it, Benign and Malignant tumour and its differences, Diagnosis, Dietary guidelines and Management in Cancer.	

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Understand the role of Dietitian and to maintain good nutritional status, correct deficiencies or disease conditions of the patients.		X		X		X				X		
Gain knowledge on the principles of diet therapy and designing or formulating different therapeutic diets for various disease conditions.	X		X			X				X		
Develop skill to plan and prepare therapeutic diets for prevention of disease conditions.	X		X				X		X			

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

Practical Course:

Paper Code: BSHHSPN101	
Total Contact Hours: 52 Hrs	Course Credits:2
List of Experiments to be conducted	
<ul style="list-style-type: none">• Modification of Diets in Peptic Ulcer, Constipation and Diarrhoea• Modifications of Diets in Liver Diseases• Diets for Acute and Chronic kidney infection/disease.• Diet for Cardiovascular disease.• An Overview/desk review on DASH diet, Mediterranean diet, Paleo diet,FODMAP diet, Keto diet VLCD etc. (As assignment).	

Pedagogy Practical:

Formative Assessment = 50 marks	
Assessment Occasion / type	Weightage in Marks
Lab record and attendance	5
Practice exercise	5
Total	40 marks (Practical exam) + 10 marks = 50 marks

References:

- Srilakshmi, B. Dietetics, New Age International P. Ltd., New Delhi, 2018.
- Dietary Guidelines of Indians – A Manual, National Institute of Nutrition, Hyderabad, 2015.
- Garg, M. Diet, Nutrition and Health, ABD Publishers, 2006.
- Krause, M.V. and Mahan, L.K. Food, Nutrition and Diet Therapy, 9th Ed., W.B. Saunders Company, Philadelphia, 2019.
- Maimun Nisha, Diet Planning for Diseases, Kalpaz Publishers, 2016.
- Dietary Guidelines of Indians – A Manual, National Institute of Nutrition, Hyderabad, 2011.
- Brown, J (2014). Nutrition now (7th ed). Wadsworth, USA, ISBN-13: 978-1-133-93653-4, ISBN10: 1-133-93653-9
- Nelms M, Sucher K (2015). Nutrition Therapy and Pathophysiology. (3rd edition) Cengage Learning, USA. ISBN-13: 978-1305111967, ISBN-10: 1305111966.

VI SEMESTER

Course Title: PERSONAL FINANCE AND CONSUMER STUDIES	
Paper Code: BSHHSCS101	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To understand consumer rights and responsibilities
- To develop financial literacy and encourage responsible spending
- To promote saving and investing habits

Course Outcomes: (COs)

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

- Understand the concept of capital formation, nature of saving and the role of saving in economic development.
- Highlight the importance of investment and to study the different types of financial securities.
- Highlight on market, marketing and consumer behaviour.

SEMESTER VI

Paper code: BSHHSCS 101 PERSONAL FINANCE AND CONSUMER STUDIES	
Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT	48 Hrs.
Unit – 1 Family Finance and Budgeting	12 Hrs
<p>Family Finance - Definition and importance of money, types of family income - money income, real income and psychic income, sources of family income.</p> <p>Family Budget - Family expenditure pattern and factors that affect the expenditure of the family, importance of budgeting, objectives of family budget, steps in making budget, maintenance of records, account keeping.</p>	
Unit – 2 Financial services	12 Hrs
<p>Savings - types of savings, importance of savings, factors affecting the household saving, financial institutes which promote savings : Post offices, Banks, General Insurance corporations.</p> <p>Investments - objectives and principles, financial instruments - Equity shares, preference shares, fixed income securities- Debenture and Bonds, Floating rate bonds, Global Depository Receipts (GDRs), American Depository Receipts (ADRs), sponsored secondary ADRs.</p> <p>Insurance Services - Types of Insurance - Micro insurance, Reinsurance, Medical insurance, Housing insurance and Agricultural insurance, The Insurance Regulatory and Development Authority (IRDC), its guidelines on Unit linked insurance policies, Tax implications, Investment Channels for physical Assets.</p>	
Unit – 3 Income Tax, Market, Marketing and Consumer Behavior	12 Hrs
<p>Income Tax - Tax implications, Calculation of personal income tax.</p> <p>Markets, Marketing and buyer behavior, Changing nature of business - e-commerce and e-business, consumer problems, consumer empowerment - consumer rights, Consumer Education - Branding, Labelling, Pricing,</p>	

Consumer Ethics.	
Unit –4 Consumer Protection	12 Hrs
Consumer Organizations - origin, functioning, role and types, Consumer cooperatives - role, history and growth in India, PDS Kendriya Bhandars, Basic Legislative framework for consumer protection in India, consumer protection act 1986 COPRA, Alternative redressal mechanisms, Mediation centers, Standardization and quality control measures, BIS, FPO, AGMARK, ISO, Eco mark, Wool mark, silk mark, cotton mark, BEE star labelling etc.	

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Understand the concept of capital formation, nature of saving and the role of saving in economic development.		X		X			X					X
Highlight the importance of investment and to study the different types of financial securities	X			X		X				X		
Highlight on market, marketing and consumer behaviour.			X		X		X		X			

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

Practical Course:

Paper Code: BSHHSPN101	
Total Contact Hours: 52 Hrs	Course Credits:2
List of Experiments to be conducted	
<ul style="list-style-type: none"> • Study the income and expenditure pattern of households of different economic background. • Study of their own family income and expenditure pattern. • Case study of Banks and Post offices to understand their services and their products, learning to fill different bank forms. • Income tax filing. • Evaluation and designing of advertisements in print media including products, services and social ads. • Evaluation and designing of informative and attractive labels of different types of food products. • Analysis of consumer redressal through case study approach under CPA. • Visit to BIS. 	

Pedagogy Practical:

Formative Assessment = 50 marks	
Assessment Occasion / type	Weightage in Marks
Lab record and attendance	5
Practice exercise	5
Total	40 marks (Practical exam) + 10 marks = 50 marks

References:

- Gross et. al (1980), Management for modern families, 3rd edition, Prentice hall, New Jersey.
- Nickel and Dorsey (1986); Management in family living, John Wiley and Sons.
- Koontz and Weihrich (1980); Essentials of Management McGraw hill international ltd.
- Premavathy Seetharam and Praveen Pannu (2005) Interior Design and Decoration, CBS Publishers.
- Agarwal Anju.D (1989): A practical handbook for consumers, Indian Book Houses, Mumbai.

VI SEMESTER

Course Title: QUALITY CONTROL AND FOOD REGULATIONS	
Paper Code: BSHHSCS101	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To ensure food safety and maintain consistent quality
- To protect consumer health and prevent food adulteration
- To ensure accurate labelling and comply with legal standards

Course Outcomes: (COs)

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

- To acquire knowledge about quality and safety aspects of food.
- To learn about the various ways of evaluating and controlling food quality.
- Be familiar with various tests and standards used for quality assurance used for food safety hazards, contaminants, adulterants, waste management and implementation of HACCP at various food service and industrial units.

SEMESTER VI

Paper code: BSHHSCS 101 QUALITY CONTROL AND FOOD REGULATIONS	
Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT	48 Hrs.
Unit – 1 Food Quality	12 Hrs
Meaning and definition of food quality Quality factors in foods, indicators of food quality. Meaning, importance and ways of Food Quality Assessment. Sensory evaluation, sensory characteristics of foods, types of tests, selection and training of sensory panel, types of tests.	
Unit – 2 Food Additives, Food Adulteration and Food Labeling	12 Hrs
Food additives - Definition, types, functions and usage, advantages and disadvantages. Food Adulteration - Meaning, detection of common adulterants, PFA laws related to food adulteration and its advantages. Nutrition Labeling - Health Claims, Nutrition Claims, Laws related to food labeling.	
Unit – 3 Food Safety, Hazards and Risks	12 Hrs
Meaning, definition, Types of hazards – Biological hazards, physical hazards, chemical hazards, nutrition – related diseases. Risk assessment and management. Natural toxicants in foods, pesticide residues in foods – Assessment and elimination, investigation of food borne disease outbreaks Principles of food hygiene, personal hygiene, kitchen hygiene and sanitation. Microbiology in food plant sanitation, water quality assessment, insect and pest control, waste treatment and disposal, food vending and packaging standards,	

employee's health
Unit –4 Control of Food quality 12 Hrs
<p>Principles of quality control.</p> <p>Government regulations (Food laws, orders) and amendments and national and international standards – ISI, Agmark, FPO, codex Alimentarius, ISO.</p> <p>Role of FDA in India, HACCP and its principles, TQM, essentials of TQM and concept of food audit.</p>

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
To acquire knowledge about quality and safety aspects of food.		X		X		X						X
To learn about the various ways of evaluating and controlling food quality		X		X	X					X		
Be familiar with various tests and standards used for quality assurance used for food safety hazards, contaminants, adulterants, waste management and implementation of HACCP at various food service and industrial units.	X				X			X		X		

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

Practical Course:

Paper Code: BSHHSPN101	
Total Contact Hours: 52 Hrs	Course Credits:2
List of Experiments to be conducted	
<ul style="list-style-type: none">• Sensory evaluation with different tests.• Methods to detect Food Adulteration.• Visit to Food Industry / FSSAI• Report and market survey on Food Additives.• Report and market survey on Food Labelling.	

Pedagogy Practical:

Formative Assessment = 50 marks	
Assessment Occasion / type	Weightage in Marks
Lab record and attendance	5
Practice exercise	5
Total	40 marks (Practical exam) + 10 marks = 50 marks

References:

- Singhal, R. S. (1997) Handbook of indices of food quality and authenticity. Cambridge Woodhead Publishing, New York.
- Langree, K. (1996) Quantity Food Sanitation 5th edition John Wiley and Sons, New York.
- McSwane, D. (1998) Essentials of Food Safety and Sanitation 1st edition, Prentice – Hall, Inc, New Jersey
- Roday, S. (1999) Hygiene and sanitation in food industry, Tata McGraw Hill Pub. Co. Ltd.
- Potter, N. H. (1997) Food Science, 5th edition, New Delhi, CBS Publishers and distributors New Delhi
- Negi, J. (2004) Food and Beverage Laws: Food Safety and Hygiene, Amar Prakashan New Delhi.
- Khanna, S. (2003) Food Standards and Safety in a globalised world. The Impact WTO and Codex.
- McWilliams, M. (2000) Foods Experimental Perspectives, 4th edition, Prentice-Hall, Inc New Jersey, PFA ISI latest guidelines to be referred.
- Kirk, B.S, and Sawyer, R. (1991) Pearson's composition and analysis of foods, (9th ed.) Longmans scientific and Technical England.
- Mahindru, S.N. (2000). Food safety - a techno legal analysis Tata McGraw Hill Publishing Co. Ltd New Delhi.
- 11. Nielson, S.S. (1994) Introduction to the chemical analysis of foods Jones and Bartlet Publishers Boston.

VI SEMESTER

Course Title: FOOD SERVICE MANAGEMENT	
Paper Code: BSHHSCS101	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To ensure safe and hygienic food preparation
- To provide nutritious and balanced meals
- To comply with food laws and regulations

Course Outcomes: (COs)

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

- To acquire knowledge on different types of Hotels and planning the food service layouts.
- To gain knowledge on the organization structure in food service and housekeeping.
- To learn the art of menu planning and food service techniques and to obtain knowledge on cleaning and housekeeping procedures.

SEMESTER VI

Paper code: BSHHSCS 101 FOOD SERVICE MANAGEMENT	
Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT	48 Hrs.
Unit – 1 Introduction to Hospitality Industry	12 Hrs
<p>Classification based on (types of lodging, standard classification, heritage hotels, size, location, duration of stay, basis of level of services, basic of ownership, alternative accomodation.</p> <p>Different departments in a hotel and their organization structure (front office, housekeeping, food and beverage services, kitchen, engineering and maintenance, human resources, security, scales and marketing, purchasing).</p>	
Unit – 2 Food Service	12 Hrs
<p>Introduction to food service department - Definition, challenges, responsibilities, career, work timings and shifts.</p> <p>Interdepartmental co-ordination and inter personal relationship (front office, food and beverage services, kitchen, engineering and maintenance, human resources, security, sales and marketing, purchase and housekeeping.</p>	
Unit – 3 Setting Up Food Service, Types of Food Service and Menu	12 Hrs
<p>Introduction - Layout and design - planning of a layout (restaurant industrial canteen and hospital) - Architectural features - Evaluation of plans.</p> <p>Food service - introduction - food service system model and its significance - methods of delivery system - choice of delivery systems - types of services - service in a restaurant - specialized forms of service.</p> <p>Menu - Need for menu planning, types, steps in menu planning, characteristics of a good menu, display of a menu, standardization of recipe and maintenance of recipe file.</p>	

Unit –4 Equipments, Food Handling, Cleaning Equipments and Housekeeping Procedures

12 Hrs

Equipments and food purchase, receiving, storage, sanitation and hygiene, maintenance of records.

Science of cleaning, cleaning agents, cleaning and dish washing equipments.

Housekeeping procedures - types of rooms, guest cycle and hotel tariff, Linen management and laundry, cleaning different areas, budget and inventories (records and registers).

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
To acquire knowledge on different types of Hotels and planning the food service layouts.		X		X		X						X
To gain knowledge on the organization structure in food service and housekeeping.		X		X	X				X			
To learn the art of menu planning and food service techniques and to obtain knowledge on cleaning and housekeeping procedures.		X	X				X			X		

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

References

- Hotel housekeeping by Sudhir Andrews, Training manual, third edition, Mc graw hill education private limited New Delhi year 2015.
- Mahesh Chandsingh hospitality management, Centrum press, New Delhi 2013.
- Food and Beverage Service, 2nd edition BLBSR Reprinted 1989.
- Mahmood A Khan, Food Service Operations, AVI publishing Co 1987.
- West B.Bl. Wood, U.F. Hayer and G.F.Shugart, Food service institutions, John Wiley and sons 1977.
- Claytron W Barrows and tow powers, introduction to management in the hospitality industry, 9th edition john wiley and sons, inc, new jersey - 2009.
- Jata Shankar R. tewari, hotel front office operation and msanagement, 1st edition oxford university press 2009.
- Le Velle Wood, Food Service in institution 6th edition, Mamillan publishing Co.

VI SEMESTER

Course Title: EARLY CHILDHOOD EDUCATION	
Paper Code: BSHHSCS101	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To promote holistic development and develop social skills
- To foster cognitive development and build emotional well-being
- To develop fine and gross motor skills and create a safe and stimulating environment.

Course Outcomes: (COs)

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

- Explain the importance of early childhood years and significance.
- Analyze curriculum models and pedagogical approaches in early childhood education.
- Comprehend developmentally appropriate programs for young children

SEMESTER VI

Paper code: BSHHSCS 101 EARLY CHILDHOOD EDUCATION	
Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT	48 Hrs.
Unit – 1	12 Hrs
<p>Introduction to Early Childhood Education 12 hrs</p> <p>Introduction: Concept, Meaning, Scope and Significance of ECE / ECCE Perspectives in Early years (3 to 5 yrs).</p> <p>Objectives of Early Childhood Education; Curriculum models; Overview of planning and transaction, child, and program assessment.</p> <p>The preschool years foundations for learning and living:- History/origin/genesis of preschool education; Growing popularity of preschools, purpose of preschool; Role of the facilitator/teacher in a preschool environment.</p>	
Unit – 2 Pedagogy And Learning Materials in ECE	12 Hrs
<p>Principles of Pedagogy; Definition and concept of curriculum; Curriculum approaches – Theme based, play based, activity based, project or enquiry-based approach; Developmentally Appropriate Practice (DAP); Components and essential features of developmentally appropriate ECCE curriculum.</p> <p>Knowledge of Developmentally Appropriate materials; Role of material in an ECE program in the domains of child development.</p> <p>Foundational skills – Early literacy and numeracy</p>	
Unit – 3 Creating a Supportive Eco-System	12 Hrs
<p>Enabling and Empowering Teachers; Family and Community Awareness and Partnership: A social capital; Safety and Security</p> <p>Addressing Developmental Delays</p>	

Pedagogy Theory:

Formative Assessment = 100 marks	
Assessment Occasion / type	Weightage in Marks
Assignment	5
Seminar	5
Test	10
Total	80 marks (Theory) + 20 marks = 100 marks

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Explain the importance of early childhood years and significance	X				X	X						X
Analyze curriculum models and pedagogical approaches in early childhood education.		X	X		X				X			
Comprehend developmentally appropriate programs for young children		X		X				X		X		

References:

- Adapting Early Childhood Curricula For Children In Inclusive Setting , Ruth E Cook, Annette Tessier, M Diane Klein , Fourth edition Prentice Hall, Ohio
- Early Childhood Education - A Trainer's Hand Book , Vinithakaul, Romilabhatnagar, NCERT
- Exceptional Children an introductory survey to special children , William L Heward and Michael Orlansky, Charles E Merrill publishing company , London
- Early Childhood Education Today, Gorge S Morrison, Florida International University, Merrill, Prentice Hall Ohio
- Little Steps Readiness for reading writing and number work, a manual for preschool teachers, Romila Soni, NCERT

VI SEMESTER

Course Title: HOUSE KEEPING	
Paper Code: BSHHSCS101	Course Credits: 3
Total Contact Hours: 48Hrs	Duration of ESA/Exam: 3 Hrs

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

Course objectives:

- To create a pleasant environment and maintain cleanliness and hygiene
- To ensure safety and prevent accidents
- To extend the life of property and furnishings

Course Outcomes: (COs)

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

- Understand the needs of housekeeping department.
- Gain knowledge on pest control, fire and safety, first aid etc.
- Develop skill in handling laundry and cleaning activities .

SEMESTER VI

Paper code: BSHHSCS 101 HOUSE KEEPING	
Number of Theory Credits	Number of lecture hours/semester
3	48

CONTENT	48 Hrs.
Unit – 1 Housekeeping Department	12 Hrs
Role of housekeeping in hospitality industry Layout of Housekeeping department Planning, organization & communication of Housekeeping activities. Co-ordination with other department Roles/responsibilities of personnel in the housekeeping department	
Unit – 2 Cleaning Activity and Pest Control and In House accidents, Fire safety and First Aid	12 Hrs
Cleaning agents- selection and use for different surface Cleaning equipment- selection, care and maintenance Cleaning techniques- Daily, weekly, yearly-procedure for cleaning of guest room and public area Types of common pests and effective methods to control Types of accidents commonly occur in hospitality institution, methods to avoid and/or reduce. Fire safety measures in the institution First aid for commonly occurring health problems.	
Unit – 3 Linen and Uniform Room	12 Hrs
Layout/plan and Physical features of linen and uniform room	

Types of linen and uniform, their selection
Storage procedure for linen and uniforms
Stock determination, control and distribution, record keeping, inventory taking
Linen and Uniform room staff and their duties
Unit –4 Laundry
12 Hrs
Types of laundry systems In House, contracted out and linen on hire
Layout plan and physical features of a laundry
Laundry procedure: Collection, sorting & making, stain removal & Prepare washing,
extractions & drying, ironing & folding, inspection, packaging, storage delivery
Laundry supplies and materials: Water, Soaps, Detergents, Bleaches, Laundry blues,
Stiffening agents & Iron
Dry cleaning procedure

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

Course Outcomes (COs) / Program Outcomes (POs)	Program Outcomes (POs)											
	1	2	3	4	5	6	7	8	9	10	11	12
Understand the needs of housekeeping department.		X		X		X				X		
Gain knowledge on pest control, fire and safety, first aid etc.	X			X	X					X		
Develop skill in handling laundry and cleaning activities.		X		X				X		X		

References:

- Asler, (1970): Management of Hospitality Operations, Bobbs Merrill, London.
- Andrew Sudhir (1985): Hotel Housekeeping- training manual. Tata McGraw-Hill Publishing Co. Ltd., New Delhi.
- Chakravarti, B.K.: A technical guide to Hotel Operation, Metropolitan Book Co. Pvt. Ltd., and New Delhi.
- David, M.Allen: Accommodation and cleaning service, Vol. 1 & 2. Hutchinson Publishing Group 17-21 Conway Street, London.
- Gladwell Derek: Practical Maintenance of equipment for hoteliers, Licenses and caterers, Hutchinson and Co. Pvt. Ltd.
- Hurst Rosemary: Accommodation Management for Hostel and residential establishment.
- Hurst Rosemary: Service and Maintenance for Hotel and Residential establishment. William Heinemann Ltd., 10Upper Grosvenor Street, London.

COMPULSORY PAPER

PAPER XXVII: INTERNSHIP REPORT

Note: Sixth Semester will have Internship / Project with viva, which can be undertaken in Hospitals / Food Industry / or any other related field of Home Science as compulsory comprises of 2 credits.