



# **Savitribai Phule Pune University**

*(Formerly University of Pune)*

**Three Year B.Sc. Degree Program in Home Science**

**(Faculty of Science & Technology)**

**F.Y.B.Sc. (Home Science)**

**Choice Based Credit System Syllabus**

**To be implemented from Academic Year 2019-2020**

## **Title of the Course : B.Sc. (Home Science)**

### **Preamble:**

Home Science is a field of study that deals with the relationship between individuals, families, communities and the environment in which they live. Home Science courses have been important throughout history because it gives women the opportunity to pursue higher education and vocational training in a world. In modern times home science teaches important life skills technically such as cooking, sewing, finances and basic adjustments in human relationships throughout lifespan. The course offers Food Science and Nutrition, Textile Science and Designing, Human Development, Family Resource Management and Home Science Extension education as a basic subjects throughout graduation.

### **Introduction:**

The Program is of Three Years duration with six semesters. It is a Full Time Degree Program. The program will be based on Choice-based credit system comprising 140 credit points.

### **Objectives to be achieved:**

- To develop problem solving competencies in life skills
- To understand the role of interdisciplinary sciences in the development of individual, families and communities
- To enhance the application of science and technologies in quality of life of individual
- To acquire professional and entrepreneurial skills for Economic empowerment of self in particular and community in general
- To train students in professional skills
- To understand the issues of Green technology
- Develop professional skills in foods and nutrition, textiles Science, housing, product making, communication technologies and human development
- To adapt and transfer the scientific innovations from lab to the community

**Course Structure:**

<b>Semester I</b>											
Course Code	Course	Teaching scheme Hours/Week			Examination Scheme and Marks					Credit	
		Theory	Tutorial	Practical	Theory		Practical		Total	TH	PR
					CIA	End-Sem	CIA	PR			
HS-101	Applied Science	03	01	04	30	70	20	30	150	3	1.5
HS-102	Foundation of Design and Aesthetics	03	01	04	30	70	20	30	150	3	1.5
HS-103	Child Development	03	01	04	30	70	20	30	150	3	1.5
HS-104	Fundamentals of food science and nutrition	03	01	04	30	70	20	30	150	3	1.5
HS-105	Introduction to Home Science Extension	03	01	02	30	70	20	30	150	3	1
		15	5	18	150	350	100	150	750	15	7
<b>Total Credits</b>										<b>22</b>	

<b>Semester II</b>											
Course Code	Course	Teaching scheme Lectures /Week			Examination Scheme and Marks					Credit	
		Theory	Tutorial	Practical	Theory		Practical		Total	TH	PR
					CIA	End-Sem	CIA	PR			
HS-201	Human Physiology	03	01	04	30	70	20	30	150	3	1.5
HS-202	Introduction to Textile & Apparel Design	03	01	04	30	70	20	30	150	3	1.5
HS-203	Human Development	03	01	04	30	70	20	30	150	3	1.5
HS-204	Resource Management	03	01	04	30	70	20	30	150	3	1.5
HS-205	Culinary Science	03	01	02	30	70	20	30	150	3	1
		15	5	18	150	350	100	150	750	15	7
<b>Total Credits</b>										<b>22</b>	

<b>Semester III</b>											
Course Code	Course	Teaching scheme Hours/Week			Examination Scheme and Marks					Credit	
		Theory	Tutorial	Practical	Theory		Practical		Total	TH	PR
					CIA	End Sem	CIA	PR			
HS-301	Core Course - I	03	01	04	30	70	20	30	150	3	1.5
HS-302	Core Course –II	03	01	04	30	70	20	30	150	3	1.5
HS-303	Core Course –III	03	01	04	30	70	20	30	150	3	1.5
HS-304	Core Course -IV	03	01	04	30	70	20	30	150	3	1.5
EVA-231	AECCI(Environ ment)	03	--	--	15	35	--	--	50	2	--
LA-231	AECC-II(Language communication)	03	--	--	15	35	--	--	50	2	--
		15	5	18	150	350	80	120	700	16	6
<b>Total Credits</b>										<b>22</b>	

<b>Semester IV</b>											
Course Code	Course	Teaching scheme Hours/Week			Examination Scheme and Marks					Credit	
		Theory	Tutorial	Practical	Theory		Practical		Total	TH	PR
					CIA	End-Sem	CI A	PR			
HS-401	Core Course - I	03	01	04	30	70	20	30	150	3	1.5
HS-402	Core Course –II	03	01	04	30	70	20	30	150	3	1.5
HS-403	Core Course –III	03	01	04	30	70	20	30	150	3	1.5
HS-404	Core Course -IV	03	01	04	30	70	20	30	150	3	1.5
EVA-241	AECCI(Environ ment)	03	--	--	15	35	--	--	50	2	--
LA-241	AECC-II(Language communication)	03	--	--	15	35	--	--	50	2	--
		15	5	18	150	350	80	120	700	16	6
<b>Total Credits</b>										<b>22</b>	

<b>Semester V</b>											
Course Code	Course	Teaching scheme Hours/Week			Examination Scheme and Marks					Credit	
					Theory		Practical				
		Theory	Tutorial	Practical	CIA	End-Sem	CIA	PR	Total	TH	PR
HS-501	DSE Course – I	03	01	04	30	70	20	30	150	3	1.5
HS-502	DSE Course – II	03	01	04	30	70	20	30	150	3	1.5
HS-503	DSE Course – III	03	01	04	30	70	20	30	150	3	1.5
HS-504	DSE Course – IV	03	01	04	30	70	20	30	150	3	1.5
HS-505	SE Course – I	3	--	--	15	35			50	2	
HS-506	SE Course – I	3	--	--	15	35			50	2	
		15	5	18	150	350	80	120	700	16	6
<b>Total Credits</b>										<b>22</b>	

<b>Semester VI</b>											
Course Code	Course	Teaching scheme Hours/Week			Examination Scheme and Marks					Credit	
					Theory		Practical				
		Theory	Tutorial	Practical	CIA	End-Sem	CIA	PR	Total	TH	PR
HS-601	DSE Course –I	03	01	04	30	70	20	30	150	3	1.5
HS-602	DSE Course –II	03	01	04	30	70	20	30	150	3	1.5
HS-603	DSE Course –III	03	01	04	30	70	20	30	150	3	1.5
HS-604	DSE Course –IV	03	01	04	30	70	20	30	150	3	1.5
HS-605	SE Course – I	3	--	--	15	35			50	2	
HS-606	SE Course – I	3	--	--	15	35			50	2	
		15	5	18	150	350	80	120	700	16	6
<b>Total Credits</b>										<b>22</b>	

**SEMESTER –I****HS-101: Applied Science (TH)****Objectives:**

The course enables the students to-

1. Develop scientific approach and attitude.
2. Acquire basic knowledge of various biological processes.
3. Learn fundamentals of Physical Sciences and apply in day to day life.
4. Understand application of Chemistry and Biology in food, textile, medicine, agriculture and industries.
5. Acquire knowledge of biological process applied in day to day life

Theory: 4 Lectures/week

Practical: 4 Lectures

Theory: 100 Marks

Practical: 50 Marks

Unit	Content	No. of Lect.
Unit 1	<b>Review of Basic Chemistry</b> <ul style="list-style-type: none"> <li>• Difference between Organic &amp; Inorganic compounds</li> <li>• Functional groups</li> <li>• Definition of Acid, Base, Neutral. Strong acid-, base. weak acid base with examples</li> </ul>	03
Unit 2	<b>Polymers</b> <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Define-monomer, polymer, polymerization</li> <li>• Some important polymers and their structure &amp; uses ---polyethylene, polyester, polyvinyl chloride</li> </ul>	04
Unit 3	<b>Soaps &amp; Detergents</b> <ul style="list-style-type: none"> <li>• Saponification reaction</li> <li>• Difference between soaps and detergents</li> <li>• Cleansing action</li> </ul>	03
Unit 4	<b>Dyes</b> <ul style="list-style-type: none"> <li>• Definition, important terms like chromophore, Auxochrome,</li> <li>• Classification based on application</li> <li>• e.g. and uses of different dyes in food, textile, medicine, etc. &amp; their hazards</li> </ul>	04
Unit 5	<b>Drugs and Pharmaceuticals</b> <ul style="list-style-type: none"> <li>• Properties of good drug</li> <li>• Meaning of important terms with e.g. Analgesic, Antacid, Antibiotic, Diuretic, anti-inflammatory, Laxatives, Sulfa drugs</li> <li>• Common drugs- use and side effects of Aspirin,</li> <li>• Paracetamol, Sulphanilamide</li> </ul>	05

<b>Unit 6</b>	<b>Food additives</b> <ul style="list-style-type: none"> <li>• Introduction, types, hazards .</li> </ul>	04
<b>Unit 7</b>	<b>Cell</b> <ul style="list-style-type: none"> <li>• As the basic unit of life</li> <li>• Types of cells</li> <li>• Salient features of animal cell</li> <li>• Cell organelles their structure and functions(animal cell)</li> </ul>	06
<b>Unit 8</b>	<b>Introduction to Micro-organism</b> <ul style="list-style-type: none"> <li>• Bacteria-Structure, Classification based on response to O<sub>2</sub> , Importance of bacteria</li> <li>• Fungi- Morphology of molds and yeasts, classification, beneficial and harmful aspects</li> <li>• Virus- Morphology, Classification based on nucleic acid content and hosts</li> </ul>	05
<b>Unit 9</b>	<b>Genetics and Heredity</b> <ul style="list-style-type: none"> <li>• Structure of DNA and RNA</li> <li>• Chromosomes and their structure-autosomes and sex chromosomes</li> <li>• Sex determination in human beings</li> <li>• Sex linked diseases in human beings- Hemophilia and colour blindness.</li> </ul>	09
<b>Unit 10</b>	<b>Immunology</b> <ul style="list-style-type: none"> <li>• Introduction to immune system and types of immunity</li> <li>• Antigen and antibody reaction</li> </ul>	02

### Applied Science (PR)

<b>Unit</b>	<b>Content</b>	<b>No. of Lect.</b>
<b>Unit 1</b>	Introduction to chemistry lab & apparatus.	03
<b>Unit 2</b>	Neutralization of strong acid with strong base	03
<b>Unit 3</b>	Neutralization of weak base with strong acid	03
<b>Unit 4</b>	Neutralization of weak acid with strong base	03
<b>Unit 5</b>	Oxidation- reduction reaction Titration	03
<b>Unit 6</b>	pH determination of various solutions: acid, base and neutral (two household example for each)	03
<b>Unit 7</b>	Viscosity measurement: water, oil, shampoo by Oswald's viscometer	03
<b>Unit 8</b>	Dyeing of cotton fiber with Direct dye	03
<b>Unit 9</b>	Study and care of microscope	03
<b>Unit 10</b>	Observation of bacteria by the simple monochrome staining method (hay infusion culture or milk)	03

<b>Unit 11</b>	To Study common pathogenic bacteria (any 6 )	03
<b>Unit 12</b>	Observation of fungi on different food material	03
<b>Unit 13</b>	To Study common pathogenic protozoa ( <i>Entamoeba histolytica</i> and <i>Plasmodium vivax</i> )	03
<b>Unit 14</b>	Study of medicinally important plants (project-10 samples)	06

### References:

1. Gowarikar V.R., Viswanathan N.N., Jaydev S. (1990): Polymer Science- Wiley Eastern Ltd.
2. Prof. V.A. Shenal (1991): Introduction To the Chemistry of Dyestuffs, Sevak Publications.
3. Dr. H.P. Tipnis, Dr. A.S.Dhake (1999): Pharmaceutical Chemistry-II, Vrinda Publications, M.G. Road, Jalgaon.
4. Kent S.A. (1974): Riegel's Handbook of Industrial Chemistry.
5. Shiv Narayan Sahu: Preparation and distribution of drugs and cosmetics.
6. Loewy A. and Sckevilz (1995): Cell Structure and Functions, Hold New York.
7. Porter K.R., Bonneville M.A.: Fine structure cells and tissues.
8. Nicholl D.S.T.(1994): An introduction To Genetic Engineering- Cambridge University Press.
9. Pelczar N.J., Chan F.C.S., Krieg N.R. (1998): Microbiology, Tata McGraw Hill
10. Stanier R.Y., Ingraham J.L., Whekle M.L., Panler P.R.(1992): General Microbiology, Mcmillan Education Ltd.
11. Glazer A.N. & Nikaido H.(1995) Microbial Biotechnology W.H. Freeman Company.
12. Lehninger: Principles of Biochemistry, C.B.S. Publishers and DistribuTor, Bholanath Nagar, Shahdra, Delhi/
13. Kumball J.W. (1990): Introduction To immunology, Mcmillan Publishing Co.
14. Coleman R.M., Lombard M.F. and Sicord R.E. (1992): Fundamental Immunology, W.C.Brown Publishers.
15. Textbook of practical Chemistry Std. 11 and 12 Maharashtra secondary education Board
16. Textbook of practical Biology Std. 11 and 12 Maharashtra secondary education Board



**SEMESTER –I****HS- 102: Foundation of Design and Aesthetics (TH)****Objectives:**

1. To enable the students to understand the elements and principles of design.
2. To enable the students to develop the skills to appreciate the aesthetics of art and design.
3. To develop in the students an understanding of the application of art principles in various areas of Home Science.
4. To promote group learning in the study of arts and crafts.

Theory: 4 Lectures/week

Practical: 4 Lectures

Theory: 100 Marks

Practical: 50 Marks

<b>Unit</b>	<b>Content</b>	<b>No. of Lect.</b>
<b>Unit 1</b>	<p><b>Introduction to Art, Design and Aesthetics</b></p> <ul style="list-style-type: none"> <li>• Meaning of art and design and aesthetics</li> <li>• Elements of Arts and design               <ul style="list-style-type: none"> <li>- Definition of art and design</li> <li>- Introduction</li> </ul> </li> </ul> <p><b>Introduction to Light</b></p> <ul style="list-style-type: none"> <li>• Natural Light and Artificial Light</li> <li>• Effect of Light on other elements of design</li> <li>• Psychological effects of light</li> </ul> <p><b>Space</b></p> <ul style="list-style-type: none"> <li>• Definition ,Positive and Negative Spaces</li> <li>• Importance of Space</li> <li>• Psychological effects of Space</li> </ul>	6
<b>Unit 2</b>	<p><b>Line as an Important Element of Design</b></p> <ul style="list-style-type: none"> <li>• Definition, Types of lines</li> <li>• Importance of lines</li> <li>• Psychological effects of line</li> <li>• Application and optical illusion of lines</li> </ul> <p><b>Texture</b></p> <ul style="list-style-type: none"> <li>• Definition, Types of Texture</li> <li>• Importance of Texture</li> <li>• psychological effects of Texture</li> <li>• Textural treatments in art and design</li> </ul>	6
<b>Unit 3</b>	<p><b>Colour</b></p> <ul style="list-style-type: none"> <li>• Introduction to color, Definition</li> <li>• Dimensions of color</li> <li>• Classification of color</li> <li>• Color theories</li> <li>• Color Schemes</li> <li>• Psychological effects of color</li> </ul>	9

	<ul style="list-style-type: none"> <li>• Application of color in art and design</li> </ul>	
<b>Unit 4</b>	<b>Principles of Design</b> <ul style="list-style-type: none"> <li>• Definition and introduction to principles of design</li> <li>• Its Importance and Functions in interior design</li> </ul> <b>Balance</b> <ul style="list-style-type: none"> <li>• Introduction and definition</li> <li>• Types of balance</li> <li>• Psychological effects of balance</li> </ul>	4
<b>Unit 5</b>	<b>Harmony</b> <ul style="list-style-type: none"> <li>• Introduction and definition</li> <li>• Types of harmony</li> <li>• Psychological effects of harmony</li> </ul> <b>Scale and Proportion</b> <ul style="list-style-type: none"> <li>• Definition of proportion -Meaning of scale</li> <li>• Understanding proportion</li> </ul>	6
<b>Unit 6</b>	<b>Rhythm</b> <ul style="list-style-type: none"> <li>• Introduction and definition</li> <li>• Types of rhythm</li> <li>• Psychological effects of rhythm</li> </ul> <b>Emphasis</b> <ul style="list-style-type: none"> <li>• Introduction</li> <li>• How to create emphasis</li> </ul>	5
<b>Unit 7</b>	<b>Introduction to Structural and Decorative Design</b> <ul style="list-style-type: none"> <li>• Meaning and definition of structural design</li> <li>• Meaning and definition of decorative design</li> <li>• Function of structural design and decorative design</li> <li>• Essentials of structural design</li> </ul> Essentials of decorative design <b>Aesthetics of Art / Design</b> <ul style="list-style-type: none"> <li>• Understanding aesthetics of art / design</li> <li>• Use of Optical illusion of art / design</li> </ul>	9

### Foundation of Design and Aesthetics (PR)

Unit	Content	No. of Lect.
Unit 1	Make a scrap book illustrating the elements and principles of design	4
Unit 2	Collect the samples of Natural Light and Artificial Light	4
Unit 3	Draw optical illusion of lines	4
Unit 4	Textural treatments in furniture Collect the samples	4
Unit 5	Preparation of colour wheel and Value and Intensity of colour	4
Unit 6	Colour schemes on different motifs and optical illusion of colour	7

Unit 7	Effects of balance show through different picture collection	4
Unit 8	Collect the samples of harmony and sketch the Proportion and scale	6
Unit 9	Draw types of rhythm and How to create emphasis	4
Unit 10	Draw structural design and decorative design used in interior decoration	4

### References:

1. Agan T. (1970): The Houses, its plan and use, Oxford and IBM, New Delhi.
2. Ahmed K. (1995): Interior Design- An introduction to art, craft, science, techniques and profession, Ingra Publications Pvt.Ltd, Mumbai.
3. Bevlin M.E. (1985): Design through discovery, Rinchart And Winston, NewYork.
4. Bhatt N.D. (1985): Elementary drawing, Anan Charotar Publishing House.
5. Bhatt P. & Shamita G.(1990) : Foundation of Art and Design, Lakhani Book Depot, Mumbai.
6. Collingwood R.G. (1958): The principles if Art, Oxford University Press, London.
7. Craig & Rush : Homnes with character, D.C. Health & Co.
8. Dandekar H.D. and Krishnamurti C.E. (1960): Anchine drawing, Oxford University Press, London.
9. Donald Anderson. : Elements of design, Holt, Rinchat and Winston, NewYork.
10. Dorothy S.: Introduction to Home Furnishing, The McMillan Company, NewYork.
11. Faulker R. & Faulker S.: Inside today's home, Holt, Rinchat and Winston, NewYork.
12. Faulker, Ziegfeld, and Hill: Art today, Itenry Holt.
13. Frances O.: Art and Design in home living, McMillan Company, NewYork.
14. Garreston Frouz.: Theory and practice of colour, Studio Vista Publishers, London.
15. Goldstein and Goldstein (1953): Art in everyday life, McMillan Company, NewYork.
16. Grames M. (1951): The art of colour and Design,Mcgraw Hill Book Co., NewYork.
17. Lewis D.S., Jean O.B and Ester F.S. (1969): Housing and Home Management, The McMillan Company, NewYork.
18. Morris W. (1989): Design and patterns Bracker Books, London
19. Morton R.: The home and its furnishing, Mcgraw Hill Book Company, Inc., New York.
20. Morton G. M. (1964): The arts of costume and personal appearance, John Wiley and Sons, New York.
21. Mueller C. G., Mae Rudolfetal (1967): Light and vision – Life Science and Library, Time life International, Netherlands.
22. Rowland K. (1965): The shapes we need vol. 2/3, Grinnnd Co., London.
23. Rutt A. H.: Home Furnishing, Wiley Eastern Pvt. Ltd., New Delhi.
24. Shah M. G., Kale G. M. & Patki S. Y. (1993): Building drawing with an integrated approach to built environment, Tat Mcgraw Hill Publishing Company Ltd., New Delhi.

**SEMESTER –I****HS – 103: Child Development (TH)****Objectives:**

1. To become acquainted with the developmental stages from prenatal stage to childhood.
2. To develop awareness of important aspects of development during prenatal stage to childhood.
3. To understand the problems and hazards faced by an individual throughout prenatal stage to childhood.

Theory: 4 Lectures/week  
Practical: 4 Lectures

Theory: 100 Marks  
Practical: 50 Marks

Unit	Content	No. of Lect.
<b>Unit 1</b>	<b>Growth &amp; Development</b> <ul style="list-style-type: none"> <li>• What is Child Development?</li> <li>• Meaning and principles of growth &amp; development</li> <li>• Difference between growth &amp; development</li> <li>• Stages of development in life span</li> <li>• Concepts of development and developmental Tasks</li> <li>• Family &amp; child welfare programmes</li> </ul>	10
<b>Unit 2</b>	<b>Prenatal Stage of Development</b> <ul style="list-style-type: none"> <li>• Reproductive system and Conception</li> <li>• Prenatal development- stages: period of ovum, embryo and fetus.</li> <li>• Care during pregnancy and factors affecting prenatal growth and development.</li> <li>• Delivery Process</li> </ul>	8
<b>Unit 3</b>	<b>Infancy:</b> <ul style="list-style-type: none"> <li>• Neonatal Period – Appearance, adjustments and capacities of neonate</li> </ul> <b>Infancy Period</b> - Characteristics, Developmental tasks <ul style="list-style-type: none"> <li>- Physical and motor development</li> <li>- Cognitive and language development</li> <li>- Socio-emotional development</li> <li>• Impact of home environment on overall development</li> </ul>	9
<b>Unit 4</b>	<b>Childhood Period- Preschool Period</b> <ul style="list-style-type: none"> <li>Characteristics, Developmental tasks</li> <li>- Physical and motor development</li> <li>- Cognitive and language development</li> <li>- Socio-emotional development</li> <li>-Impact of home environment on overall development</li> </ul>	9

<b>Unit 5</b>	<b>Childhood Period- School Age Period</b> Characteristics, Developmental tasks - Physical and motor development - Cognitive and language development - Socio-emotional development -Impact of home environment on overall development	<b>9</b>
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**Child Development (PR)**

<b>Unit</b>	<b>Content</b>	<b>No.of Lect.</b>
Unit 1	View films/CD on delivery.	<b>6</b>
Unit 2	Prepare a case study report of a pregnant women from 3 <sup>rd</sup> month onwards.	<b>10</b>
Unit 3	Project on child rearing practices in different communities. (ex. Rural-Urban)(2-3 students group can be assigned one project.)	<b>12</b>
Unit 4	Visit to Nursing home and submission of Report.	<b>5</b>
Unit 5	Bulletine Display on current topics related to syllabus.(Group of 4-5 students) Topics: 1. Discipline 2.Parenting 3 .Family 4. Media and children	<b>12</b>

**References:**

1. Craig. G. J. (1974): Child Development, printince Hall Inc. Englewood cliffs, New Jersey.
2. Hurlock, E B. (1970): Child Development, Tata Megraw Hill Publishes, Delhi.
3. Vaikasik Manasashastra: Borude. R. R. , Kumathekar M. , Desai B. , Golvilakar S. , Vidyarthi Gruhprakashan, Pune.
4. Manav Vikas: Kandalkar lina, Vidya Prakashan, Pune.
5. Balvikas, Dr. Varadpande N. Pimpalipure and k. Publishers, Nagpur.
6. Berk L. E. Development through the Lifespan Person Education, Low Price edition. Populia, D.E. and olds, S.W.(1975) "A Childs World" Tata Macqraw Hill Publication, Newuork.

**SEMESTER –I****HS – 104: Fundamentals of Food Science and Nutrition (TH)****Objectives:**

The course will enable the students to:

1. Understand the inter-relationship between food, nutrition and health
2. Know the methods and principles involved in cooking.
3. Understand the knowledge of food science and the changes occurring during food preparation
4. Know the methods and principles involved in cooking.
5. Learn to relate foods with their nutrient content

Theory: 4 Lectures/week

Practical: 4 Lectures

Theory: 100 Marks

Practical: 50 Marks

Unit	Content	No. of Lect.
Unit 1	<b>Introduction to Nutrition</b> <ul style="list-style-type: none"> <li>• Terms used in Nutrition and Health. Definitions - Health, Nutrition, Nutrients, Foods, Diet, R.D.A., Balanced diet, Malnutrition, Under nutrition, Over nutrition, Optimum nutrition. Five Food Groups and</li> <li>• Food guide, relationship between food and nutrition, functions of food, classification of nutrients, factors affecting food consumption and food acceptance.</li> </ul>	4
Unit 2	<b>Food Preparation-</b> <ul style="list-style-type: none"> <li>• Reasons for cooking (enlist and explain the reasons), pre-preparation of foods (discuss various methods,- washing, cutting, peeling soaking, fermentation, germination - its advantages and disadvantages, give examples for each,), Methods and medium of cooking- air, water, fat, microwave and solar (discuss various methods giving its advantages and disadvantages with examples for each).</li> <li>• Nutrient losses during cooking and its prevention(Discuss methods in which nutrient loss is minimum and ways to retain nutrients), Ways to enhance nutritional content while cooking.</li> <li>• Color pigments, Effect of cooking on color pigments. (How to retain natural colors while processing</li> </ul>	6
Unit 3	<b>Carbohydrates</b> -Composition and classification( give example of each type of Carbohydrates with its composition),Sources, Nutritional functions, Requirements(for children ,adolescents and old age),Principles of Cooking, Effect of heat .Gelatinization ,Dextrinization, Identity of Grain, Synerasis ,Lumps Formation,	6
Unit 4	<b>Proteins-</b> Composition, Nutritional classification (complete and incomplete give examples) Sources, Functions, Requirements, DEM	6

Unit 5	<b>Fats - Fats and Oils-</b> Composition, nutritional classification of fatty acids- (Saturated/unsaturated, essential/non-essential), Meaning of SFA, USFA, MUFA, PUFA ,Sources(Visible / invisible ), Nutritional Functions (enlist and discuss the function ) RDA for visible fats, deficiency and excess (discuss in short);Rancidity (what is rancidity and how to prevent it) Changes on heating (melting point, smoking point, frying point, flavors, its composition), smoking point, frying point. Role of fat in cookery	6
Unit 6	<b>Vitamins-</b> Classification, Sources, Functions requirements deficiency, Factors affecting availability of vitamins from the diet. Vitamin A, Vitamin D, Vitamin E, Vitamin K, Vitamin C, Thiamin, Riboflavin, Niacin, Folic acid, Vitamin B6, Vitamin B12	6
Unit 7	<b>Minerals-</b> Calcium, Iron, Phosphorus ,Iodine Distribution in body, functions ,Sources, ,RDA, Deficiency <ul style="list-style-type: none"> <li>Minerals: Calcium, Iron and Iodine, Functions, deficiencies sources, requirements, Calcium- factors affecting absorption, Iron - factors affecting absorption</li> </ul>	5
Unit 8	<b>Water</b> <ul style="list-style-type: none"> <li>Classification, functions, sources, requirements, deficiencies</li> <li>Water balance ,Dehydration and intoxication</li> </ul> <b>Fiber-</b> <ul style="list-style-type: none"> <li>Definition Sources Functions Importance in disease prevention, How to incorporate fiber in daily diet</li> </ul> <b>Energy</b> <ul style="list-style-type: none"> <li>Unit of energy ( define kilo-calorie and joule ), Food as a source of energy,</li> <li>Energy requirement -a)BMR and RMR and factors affecting it</li> <li>b) Physical activities c) SDA , Effects of deficiency and excess</li> </ul>	6

### Fundamentals of Food Science and Nutrition (PR)

Unit	Content	No. of Lect.
Unit 1	<b>Introduction to Laboratory</b> <ul style="list-style-type: none"> <li>Common cooking term</li> <li>Weights and measures</li> </ul>	02
Unit 2	<b>Concept of standardization</b> <ul style="list-style-type: none"> <li>Identification of common recipe and ingredients and methods of preparation</li> </ul>	05
Unit 3	<b>Food guide and RDI</b> <ul style="list-style-type: none"> <li>Food guide its uses in meal planning</li> <li>Concept of food pyramid</li> <li>RDA</li> <li>Principles of cooking ,Colour Pigments</li> </ul>	04
Unit 4	<b>Plan and prepare recipe for</b> <ul style="list-style-type: none"> <li>Calories -high moderate and low</li> </ul>	06

Unit 5	<b>Plan and prepare recipe for</b> <ul style="list-style-type: none"> <li>Carbohydrates-10g,15g, 25g recipes with and without sugar</li> </ul>	06
Unit 6	<b>Plan and prepare recipe for</b> <ul style="list-style-type: none"> <li>Protein rich dishes</li> <li>Using -1. Plant and animal source</li> </ul>	04
Unit 7	<b>Plan and prepare recipe for</b> <ul style="list-style-type: none"> <li>Vitamins-plan and prepare dishes using vitamin A/B-Carotene rich foods           <ol style="list-style-type: none"> <li>Retinol-150 mcg</li> <li>Beta-carotene-600 mcg</li> </ol> </li> </ul>	06
Unit 8	<b>Plan and prepare recipe for</b> <ul style="list-style-type: none"> <li>Thiamin, riboflamin and niacin</li> <li>Vitamin C (15 to 20 mcg)</li> </ul>	06
Unit 9	<b>Plan and prepare recipe for</b> <ul style="list-style-type: none"> <li>Calcium and Iron</li> <li>Dishes from Iron rich food (2 mcg/serving)</li> <li>Calcium rich food (150 mcg calcium/serving)</li> </ul>	06

### References:

- Mudambi, S.R., Rajgopal, M.V.(1990) Fundamentals of Foods and Nutrition, New Age International Pvt. Ltd.
- Kukude, S and others. Food Science, Sheth Publications.
- Mudambi and Sheela Rao: Food science
- Srilaxmi: Food Science, New Age International
- Guthrie Helen (1986) Introductory Nutrition. Times Mirror/ Mosey College Publishing.
- Nutrient Requirements and Recommended Dietary Allowances for Indians- I.C.M.R. Publication 1999.
- Mudambi, S.R. and Rajgopal, M.V. (2012), *Fundamentals of Foods and Nutrition* New Age International Pvt. Ltd.
- Food Science 1<sup>st</sup> Edition (2012) Sheth Publications. Maharashtra State Board of Secondary and Higher Secondary education Pune,
- Roday S. (2012) *Food Science and Nutrition* (2<sup>nd</sup> Ed.) Oxford University Press.
- Joshi S. (2009) *Nutrition and Dietetics* Mcgraw Hill Higher Education
- Robinson, and Lawler (1990) *Normal and Therapeutic Nutrition* (17<sup>th</sup> Edn) Macmillan Pub. Co.
- Introductory Nutrition (1986). Mosby College Publishing. Guthrie Helen Times Mirror
- Wardlaw G.M (1997) *Contemporary Nutrition, Issues and Insights*, 3<sup>rd</sup> Edition Tata Mc Graw Hill Inc. Boston.
- Guthrie H. A. and Frances M. (1994) *Human Nutrition* William C Brown Pub.



**SEMESTER –I****HS – 105: Introduction to Home Science Extension (TH)****Objectives:**

1. To develop understanding about the concept of Extension Education.
2. To comprehend the role and importance of communication in Extension.
3. To be able to plan, prepare and use the different communication methods.
4. To understand the concept of extension education.
5. To know the difference between extension education, formal and non formal education
6. To develop the skills regarding extension teaching methods.
7. To develop the knowledge of Home Science extension education.

Theory: 4 Lectures/week  
Practical: 2 Lectures

Theory: 100 Marks  
Practical: 50 Marks

Unit	Content	No. of Lect.
Unit 1	<b>Concept of Extension:</b> <ul style="list-style-type: none"> <li>• Meaning, Concept, Need and Scope of Extension.</li> <li>• Principles, philosophy and trends of Extension Education.</li> <li>• Home Science Extension- Meaning, concept, need and Significance.</li> <li>• Qualities and role of an extension worker in rural development</li> </ul>	8
Unit 2	<b>Formal And Non Formal Education</b> <ul style="list-style-type: none"> <li>• Concept, meaning and need</li> <li>• Difference between formal and non formal education</li> <li>• Difference between extension, formal and nonformal education</li> <li>• Areas of home science extension education</li> </ul>	10
Unit 3	<b>Importance Communication for extension work</b> <ul style="list-style-type: none"> <li>• Concept, meaning and definition of communication</li> <li>• Elements of communication</li> <li>• Functions of communication</li> <li>• Importance of communication</li> <li>• Barriers to communication</li> </ul>	10
Unit 4	<b>Audio visual aids and communication media</b> <ul style="list-style-type: none"> <li>• Audiovisual aids-Meaning, importance and selection</li> <li>• Classification –Edgardales cone of experience</li> <li>• Traditional media puppets, street play, folk songs and theaters</li> <li>• modern media-Radio, television, Internet</li> </ul>	10
Unit 5	<b>Programme Planning</b> <ul style="list-style-type: none"> <li>• Concept, meaning, definitions</li> <li>• Principles of programme planning</li> <li>• Steps in programme planning</li> </ul>	07

### Introduction to Home Science Extension (PR)

Unit	Content	No. of Lect.
Unit 1	<p><b>Need Assessments of Community</b></p> <ul style="list-style-type: none"> <li>• Assessing prevailing conditions of community focusing on aspects such as Health, Population, Housing, Education, Sanitation, etc.</li> <li>• Compilation of data collected utilizing it for preparing Preparation of questionnaire</li> <li>• Conduct a survey on different current issues of community</li> <li>• Analysis of information about conducting survey (Group discussion)</li> </ul>	15
Unit 2	<p><b>Community Contact Methods</b></p> <ul style="list-style-type: none"> <li>• Preparation of Graphic Aids- Posters, Charts, Leaflets etc. for selected target group. Preparation of suitable communication aids for individual contact</li> <li>• Preparation of suitable communication aids for group contact</li> <li>• Preparation of suitable communication aids for mass contact</li> <li>• Enlist different traditional medias</li> <li>• Enlist modern media</li> </ul>	15

#### References:

1. Chandra, A., A. Shah, U. Joshi (1989) *Fundamentals of Teaching Home Science*, Sterling Publication, New Delhi.
2. Dahama, O.P., O. P. Bhatnagar (1995) *Education and Communication for Extension, Communication and Management*, Naya Prakash, Calcutta Development, Oxford and IBH Publication, New Delhi. Ray, G. L. ( 1991)
3. A Text book on „agricultural communication, process and methods by A. S. Sandhu
4. An introduction to extension education – Dr. S. V. Supe
5. Mass communication – keval kumar

**SEMESTER –II****HS-201-Human Physiology (TH)****Objectives:**

1. The students will understand the basic structure and functions of the human body
2. Student will be acquainted with common diseases/disorders of each system

Theory: 4 Lectures/week

Theory: 100 Marks

Practical: 4 Lectures

Practical: 50 Marks

<b>Unit</b>	<b>Content</b>	<b>No. of Lect.</b>
Unit 1	<b>Introduction</b> <ul style="list-style-type: none"> <li>• General terms- anatomy, physiology,</li> <li>• Various systems in Human body</li> <li>• Tissues: Structure and functions of various types of tissues.</li> <li>• Bones: Various types, functions, structure of bone</li> </ul>	04
Unit 2	<b>Blood And Lymphatic System</b> <ul style="list-style-type: none"> <li>• Physical characteristics of blood</li> <li>• Blood volume, composition of plasma and functions of plasma protein</li> <li>• RBC formation and functions</li> <li>• Information about anemia and thalessemia.</li> <li>• Blood groups, their importance WBC- types, functions, Platelets and mechanism of coagulation</li> <li>• Lymph and lymphatic system, spleen and its functions</li> </ul>	08
Unit 3	<b>Heart</b> <ul style="list-style-type: none"> <li>• Its structure and circulation of blood.</li> <li>• Cardiac cycle</li> <li>• Information about hypertension &amp; ischemic heart disease</li> </ul>	04
Unit 4	<b>Respiratory System</b> <ul style="list-style-type: none"> <li>• Respiratory organs-nose, , larynx, trachea, bronchi lung brief structure and functions.</li> <li>• Mechanism of respiration</li> <li>• Common diseases- TB, asthma, bronchitis, pneumonia</li> </ul>	04
Unit 5	<b>Gastro - Intestinal System</b> <ul style="list-style-type: none"> <li>• Oral cavity, tonsils, pharynx, esophagus, stomach small and large intestine - brief structure and functions.</li> <li>• Accessory organs of digestion-Liver, gall bladder, pancreas structure and functions.</li> <li>• Common disorders- constipation. Hyperacidity, diabetes.</li> </ul>	05
Unit 6	<b>Excretory Systems</b> <ul style="list-style-type: none"> <li>• Organs of excretion, their structure and functions (Kidneys, uretors and Urinary Bladder)</li> <li>• Mechanism of urine formations.</li> <li>• Normal and abnormal constituents of Urine.</li> </ul>	04

	<b>Skin</b> <ul style="list-style-type: none"> <li>• Structure and functions of skin.</li> <li>• Regulation of body temperature.</li> </ul>	
Unit 7	<b>Nervous System</b> <ul style="list-style-type: none"> <li>• Classification of nervous system</li> <li>• Structure and functions of different parts of brain, spinal cord..</li> </ul>	06
Unit 8	<b>Reproductive System</b> <b>Female Reproductive System</b> <ul style="list-style-type: none"> <li>• Structure</li> <li>• Menstrual cycle ,menopause ,menarche</li> <li>• Fertilization</li> </ul> <b>Male Reproductive System</b> <ul style="list-style-type: none"> <li>• Structure</li> </ul>	07
Unit 9	<b>Endocrine System</b> <ul style="list-style-type: none"> <li>• Listing of endocrine glands and their location</li> <li>• Functions of pituitary, thyroid and adrenal</li> </ul>	03

### Human Physiology (PR)

Unit	Content	No. of Lect.
Unit 1	Study of human skeleton and identification of bones.	04
Unit 2	Estimation of hemoglobin	04
Unit 3	Estimation of blood groups	04
Unit 4	Discussion of normal abnormal components of urine. Test for normal constituents in urine sample Test for abnormal components like sugar, albumin and acetone and discussion on diseases in which they are found	12
Unit 5	<b>First Aid</b> -Definition, aims, contents of first aid box. -Different types of bandages and bandaging techniques. <b>Wounds</b> -Classification, dressing and management of hemorrhage- basic principles and discussion about bleeding from various parts of body. <b>Fracture</b> -Types, symptoms, management. Sprain and dislocation <b>First Aid for</b> - foreign bodies in eye, ear, nose, skin. <b>First Aid for</b> - fainting, burns, heat stroke, asthma, convulsions, electric shock and heart attack. <b>First Aid for</b> - common poisoning, dog bite, snake bite, bee-sting and scorpion bite.	18

<b>Unit 6</b>	Measurement of blood pressure.	03
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**References:**

1. Guyton, A.C., Hall J.E.- Textbook of Medical Physiology - Prism Books Pvt Ltd., Bangalore.  
Concise Medical Physiology - Chaudhari.
2. API Text Book of Medicine.
3. Textbook of Gynaecology - Datta.
4. Winwood - Sear's Anatomy and Physiology for Nurses - London, Edward Arnold.  
Wilson - Anatomy and Physiology in Health and Illness, Edinburgh, Churchill Livingstone.
5. Chatterjee Chandi Charan - Textbook of Medical Physiology - London. W.B. Saunderson's company.
6. Glynn M. (2013) Hutchinson's Book of Clinical Medicine (23<sup>rd</sup> ed). Saunders Ltd.  
(2002) First Aid St. John's Ambulance Association (8th Revised edition). Dorling Kindersley Publishers Ltd

**SEMESTER –II****HS – 202 Introduction to Textile and Apparel Design (TH)****Objectives:**

1. To introduce the basic terminologies of Textile.
2. To make aware about the Acts related to Textile standards.
3. To sharpen the fundamental skills of clothing construction.

Theory: 4 Lectures/week

Theory: 100 Marks

Practical: 4 Lectures

Practical: 50 Marks

<b>Unit</b>	<b>Content</b>	<b>No. of Lect.</b>
Unit 1	<b>Introduction to textile science</b> <ul style="list-style-type: none"> <li>• Terminologies in Textile, History.</li> <li>• Textile fiber &amp; it's classification.</li> <li>• Properties &amp; use of different textile fibers-Cotton, Silk, Rayon, Polyester, Acrylic, Polyamide and other fibers.</li> <li>• Yarns-their types, yarn twist, yarn count, yarn crimp and yarn strength.</li> </ul>	15
Unit 2	<b>Yarn manufacturing and Fabric construction process:</b> <ul style="list-style-type: none"> <li>• Methods of fabric construction-</li> <li>• Recent developments in yarn and Fabric construction.</li> <li>• Primitive methods of Fabric construction-</li> <li>• Weaving, Knitting, Braiding, Felting.</li> </ul>	10
Unit 3	<b>Fundamentals of Textile &amp; clothing construction</b> <ul style="list-style-type: none"> <li>• Elements and principles of textile design.</li> <li>• Correlative study of Standard body measurements and general body measurements.</li> <li>• Drafting and Pattern making .</li> </ul>	10
Unit 4	<b>National and International Legislative acts for standardized Textile.</b> <ul style="list-style-type: none"> <li>• Beauru of Indian Standards.</li> <li>• Flammable Fabric Act</li> <li>• Wool Label Act</li> <li>• Eco Labelibg&amp; Sustainability.</li> <li>• Silk Mark</li> <li>• Handloom Mark</li> <li>• Care labeling act &amp; Types of care labeling.</li> </ul>	10

### Introduction to Textile and Apparel Design (PR)

Unit	Content	No.Lect
Unit 1	Introduction to sewing equipments and tools, sewing machine & it's care.	6
Unit 2	Stitching of Baby set for New Born Baby.	6
Unit 3	Preparing album of basic hemming stitches and seams.	6
Unit 4	Swatch collection.(Prepare album showing information Type of fabric, Blends, Use, Further innovation or invention which is possible).	6
Unit 5	Basic stitches of embroidery -20 samples	6

#### References

1. MajoryL.Josheph "Essentials of Textile".
2. Lewis "Comparative clothing construction techniques"
3. Mc.Graw Hill "Textile fiber to fabric"
4. Holman & Sons "Understanding textiles"
5. Bane A,Creative clothing constructions,McGraw Hill book company,New York.
6. Riders Digest,Complete guide to sewing
7. Singer,Sewing step by step stitching,Decosse incorporation USA.

**SEMESTER –II****HS – 203 Human Development (Th)****Objectives:**

1. To become acquainted with the developmental stages from adolescence to old age.
2. To develop awareness of important aspects of development during adolescence to old age.
3. To understand the problems and hazards faced by an individual throughout adolescence to old age.

Theory: 4 Lectures/week  
Practical: 4 Lectures

Theory: 100 Marks  
Practical:50 Marks

<b>Unit</b>	<b>Content</b>	<b>No. of Lect.</b>
Unit 1	<b>Puberty and Adolescence:</b> <ul style="list-style-type: none"> <li>• Definition, characteristics</li> <li>• Development Tasks Physical Development, Puberty, Growth Spurt, Primary and Secondary sex characteristics</li> <li>• Emotional Development during Adolescence, Heightened emotionality, Meaning, Causes, expression, characteristics of emotional maturity</li> <li>• Hazards during Adolsence : Drug Addiction, Alcoholism, Accidents, Suicide, STDs, ATDs Teen age pregnancies</li> </ul>	15
Unit 2	<b>Adulthood: Issues and concerns</b> <ul style="list-style-type: none"> <li>• Young Adulthood (Age 21-40) Definition, Meaning, Characteristics and Developmental Tasks.</li> <li>• Responsibilities and Adjustments : Parenthood, financial.</li> <li>• Middle Adulthood(Age41-60) Definition, Meaning, Characteristics and Developmental Tasks.</li> <li>• Physical changes- during middle adulthood, Menopause and health issues</li> </ul>	15
Unit 3	<b>Old Age</b> <ul style="list-style-type: none"> <li>• Definition, Meaning, Characteristics and Developmental Tasks.</li> <li>• Physiological changes, health problems, cognitive and memory changes.</li> <li>• Retirement:</li> <li>• Effect of retirement on self, family, society and financial problems faced.</li> <li>• Preparing on self for Death</li> </ul>	15



### Human Development (PR)

Unit	Content	No. of Lect.
Unit 1	Sketching of self History on growing up stage.	9
Unit 2	Skit presentation in group on any topic from syllabus.	9
Unit 3	Case on any one topic: Menopause, Interview/ case study on Newly married couple, parenting, etc.	9
Unit 4	Visit on -1. Old age home or 2. Remand home 3. Junile home	9
Unit 5	Conducting recreational activity for grandparents/ aging people.	9

#### References:

7. Craig. G. J. (1974): Child Development, printince Hall Inc. Englewood clifts, New Jersey.
8. Hurlock, E B. (1970): Child Development, Tata Megraw Hill Publishes, Delhi.
9. Vaikasik Manasashastra: Borude. R. R. , Kumathekar M. , Desai B. , Golvilakar S. , Vidyarthi Gruhprakashan, Pune.
10. Manav Vikas: Kandalkar lina, Vidya Prakashan, Pune.
11. Balvikas, Dr. Varadpande N. Pimpalipure and k. Publishers, Nagpur.
12. Berk L. E. Development through the Life span Person Education, Low Price edition. Populia, D.E. and olds, S.W.(1975)
13. "A Childs World" Tata Macqraw Hill Publication, New York.

**SEMESTER –II****HS – 204: Resource Management (TH)****Objectives:**

The course enables students to-

1. Understand concepts, principles and functions of management.
2. Learn the management in family living both at Macro and Micro levels.
3. Recognize the importance of wise use of resources and applying the management process in order to achieve family goals

Theory: 4 Lectures/week

Practical: 4 Lectures

Theory: 100 Marks

Practical:50 Marks

<b>Unit</b>	<b>Content</b>	<b>No. of Lect.</b>
Unit 1	<b>Introduction to Components Of Management</b> <ul style="list-style-type: none"> <li>• Definition, purpose, nature and significance of management</li> <li>• Introduction to basic concepts of management</li> <li>• Management and change</li> <li>• Misconception of management (brief outline)</li> <li>• Obstacles to the improvement of management</li> <li>• Motivation in Management (Introduction to Values, Goals and standards)</li> </ul>	<b>9</b>
Unit 2	<i>Management Process</i> <ul style="list-style-type: none"> <li>• Meaning and elements of the process</li> <li>• Planning – importance, types</li> <li>• Controlling the plan and action</li> <li>• Phases – energizing, checking, adjusting</li> <li>• Factors in success of controlling</li> <li>• Supervision</li> <li>• Evaluation – types, techniques, importance</li> </ul>	<b>9</b>
Unit 3	<i>Decision Making In Management</i> <ul style="list-style-type: none"> <li>• Role of decision making in management</li> <li>• Types of decisions</li> <li>• Process of decision making</li> <li>• Methods of resolving conflicts</li> </ul>	<b>9</b>
Unit 4	<i>Resources and their Management in the Family</i> <ul style="list-style-type: none"> <li>• Introduction , Meaning, classification and Characteristics of resources</li> <li>• Family characteristics influencing management - life style, family type, size and stages of family life cycle.</li> </ul>	<b>4</b>

Unit 5	<b>Management of Time as a Resource</b> <ul style="list-style-type: none"> <li>• Characteristics and nature of time as a resource</li> <li>• Time management process</li> <li>• Time plans</li> </ul>	4
Unit 6	<i>Management of Energy as a Resource</i> <ul style="list-style-type: none"> <li>• Energy management</li> <li>• Energy cost used in home making activities</li> <li>• Energy demands during the stages of family life cycle</li> <li>• Fatigue – classification: physiological and psychological (boredom and frustration), causes and remedies</li> <li>• Work simplification – definition, principles of body mechanics</li> <li>• Ergonomics-Introduction, Meaning, definition and Scope of ergonomics</li> </ul>	10

### Resource Management (PR)

Unit	Content	No. of Lect.
Unit 1	Apply the management process to organize any event. (Interactive Sessions)	8
Unit 2	Write a report on decision making process of selecting Home Science as a field of education at under graduate level. (Interactive Sessions)	6
Unit 3	Identify and categorize the available resources in your family.	6
Unit 4	Causes and remedies of Fatigue	6
Unit 5	Explain work simplification techniques with suitable examples	6
Unit 6	Visit any well known management institute in Maharashtra.	7
Unit 7	Draw and explain ergonomical triangle	6

### References :

1. Gross, Crandall - Management for Modern Families, 4<sup>th</sup> Edition, Appleton Century Crofts Inc - 1972.
2. Nickel P. and Dorsey J.M. - Management in Family Living 4th edition Wiley and Eastern, New Delhi, 1991.
3. Saksena S.C., Business Administration and Management Sahitya Bawan, Agra, 1977.
4. Singh, P.N. Developing and managing human resources-2nd ed.-Bombay : Suchandra Publications. 1993
5. Fontana, David; Managing time/ - New Delhi : Excel Books. 1996
6. Huchheiser, Tobert M - Time management new york : barron's educational series inc..1992
7. Atkinson, Jacqueline - Better time management - New Delhi : Indus, 1993 Batra, Pramod, Vijay Management thoughts for the family in business - New Delhi : Think Inc., 1993
8. Nickell, Paulena - Management in family living - 4th ed. New Delhi: Wiley Eastern Ltd., 1967

9. Bharathi. V.V.Jacintha, M - Family resource management : (new concepts and theory) - new delhi : discovery pub. House,1994
10. Drummond, Helga - Effective decision-making : A Practical guide for management - New Delhi : A.H.Wheeler & Co.,1994
11. Mundel,Marvin E - Motion and Time study: Improving productivity -5th ed. - new delhi : prentice hall of india pvt ltd., 1981
12. Tripathi P.C.&P.N.Reddy (2000) 'Principles of Management' New Delhi: Tata McGraw-Hill Publication Company Limited.
13. Rao V.S.P. & P.S. Narayanan ' Management" New Delhi: Premier Book co.
14. Varma M.M. & R.K.Aggarwal ' Kings Principles of Management" New Delhi: Kings Books Educational Publishers.
15. Chakraborty S.K. Management - Theory and practice. Calcutta: Navbharat Publishers.
16. Deacon R.E. and Firebough F.M. Management context and concepts. Houghton Mifflin. (1975)
17. Deacon R.E. and Firebough F.M. Family Resource management, principles and application. Allyn Bacon. (1981)
18. Drucker Peter F. Management. Bombay: Allied Publishers Pvt. Ltd. (1975)
19. Gross, Crandall and Knoll. Management for Modern Families. Prentice Hall Inc. (1980)
20. Leboef Michael. The greatest management principles in the world. New York: Berkley Book.
21. Donnelly, Gibson and Ivancevich. Fundamentals of management. Texas: Business Publishers Inc.
22. Dale, Ernest. Management –theory and practice. McGraw Hill.
23. Rao, V.S.P. Principles and Practice of Management. Delhi: Konark Publishers Pvt. Ltd.
24. Chatterjee S.S. Management- Introduction, its principles and techniques. Calcutta: prentice Hall Pvt. Ltd.
25. Nickell, Paulena and Jean Muir Dorsey.(IV edition) Management in Family Living. New Delhi: Wiley Eastern pvt. Ltd.
26. Gilberth, M. L. "Management in the Home".
27. Gross, Crandell and Knoll, (1980): "Management for Modern Families". Printice Hall Inc.
28. Kiran Kaur (2007): "Home Management" Srishti Book Distributors, New Delhi.
29. Nickill & Dorsey, (1991): "Management in Family Living", 4<sup>th</sup> Edition, Wiley and Eastern New Delhi.
30. Verghese, M. A., Ogale, N. N. and Srinivasan, K., "Home Management for Std. XI", Elements of Home Science, Premlata Mallick.

**SEMESTER –II****HS-205: Culinary Science (TH)****Objectives:**

The course will enable students to:

1. Understand the nature and composition of food
2. Understand the role of different ingredients in various food preparations in an organized manner.
3. Develop culinary skills using various methods of cooking.
4. Prepare acceptable food products with maximum retention of nutrients.

Theory: 4 Lectures/week

Theory: 100 Marks

Practical: 2 Lectures

Practical:50 Marks

<b>Unit</b>	<b>Content</b>	<b>No. of Lect.</b>
Unit 1	<b>Introduction to Culinary science</b> <b>Culinary terms</b> <ul style="list-style-type: none"> <li>• Food in relation to health</li> <li>• Cooking</li> <li>• Objectives of cooking</li> </ul>	05
Unit 2	<b>Cereals</b> <ul style="list-style-type: none"> <li>• Structure</li> <li>• Composition and nutritive value</li> <li>• Specific cereals</li> <li>• Selection and Storage of Cereals</li> <li>• Role of Cereals and cereals products in cookery</li> </ul>	06
Unit 3	<b>Pulses</b> <ul style="list-style-type: none"> <li>• Nutritive value</li> <li>• Processing</li> <li>• Storage and infestation</li> <li>• Toxic constituents</li> <li>• Pulse cookery</li> <li>• Medicinal values of pulses</li> <li>• <b>Role of pulses in cookery</b></li> </ul>	06
Unit 4	Nuts and oilseeds <ul style="list-style-type: none"> <li>• Nutritive value</li> <li>• Specific nuts and oilseeds</li> <li>• Toxins</li> <li>• Emulsion</li> <li>• Rancidity</li> <li>• Smoking points</li> <li>• Role of nuts and oilseeds in cookery</li> </ul>	06

Unit 5	<b>Milk and milk products</b> <ul style="list-style-type: none"> <li>• Composition and Nutritive value</li> <li>• Milk products</li> <li>• Role of milk and milk products in cookery</li> </ul>	06
Unit 6	<b>Vegetables and fruits</b> <b>Vegetables</b> <ul style="list-style-type: none"> <li>• Classification</li> <li>• Composition and nutritive value</li> <li>• Pigments</li> <li>• Role of vegetables in cookery</li> </ul> <b>Fruits</b> <ul style="list-style-type: none"> <li>• Classification</li> <li>• Composition and nutritive value</li> <li>• Browning (Enzymatic and non-enzymatic)</li> </ul>	06
Unit 7	<b>Condiments and Spices</b> Role of spices in cookery	03
Unit 8	<b>Beverages and appetizers</b> <ul style="list-style-type: none"> <li>• Classification and Function of Beverages</li> <li>• Coffee</li> <li>• Tea</li> <li>• Soups</li> <li>• Carbonated and alcoholic beverages</li> </ul>	04
Unit 9	<b>Convenience Foods</b> <ul style="list-style-type: none"> <li>• Definition</li> <li>• Types of Convenience Foods</li> <li>• Advantages and Disadvantages of Convenience Foods</li> </ul>	03

### Culinary Science (PR)

Unit	Content	No. of Lect.
Unit 1	<b>Introduction to the subject:</b> Culinary terms, Importance of weights and measure, Review of cooking methods, Importance of basic proportion of ingredients.	02
Unit 2	<b>Beverages:</b> Nutritive value, essentials in making beverages, types of beverages, refreshing- fruit juice, panha, cocktails, nourishing- milk based, soups- cream of spinach minestrone, clear, stimulating- tea, coffee.	04
Unit 3	<b>Snacks:</b> Nutritive value- Samosa, Meduwada, Soya based cutlet, Khasta kachori, Kothimbir vadi, different types of chat, accompaniments	04
Unit 4	<b>Cereals:</b> Nutritive value, essentials in making cereal	04

	preparations, rice preparations: Brown Rice, Legume Pulao, Vegetable Biryani. Wheat preparations: Plain paratha with different folds, stuffed paratha, Methi/ Spinach puri	
Unit 5	<b>Vegetable preparations:</b> Essentials in cooking vegetables Various Vegetarian preparations: Dum alu, Spinach kofta, Panir makhani, Korma, Baked vegetable <b>Salads:</b>	04
Unit 6	<b>Pulses and Legumes:</b> Essentials in cooking pulses, various preparations- Punjabi chole, Dal makhani, Dhansak, Sambar.	04
Unit 7	<b>Indian Sweets:</b> Chocolate burfi, Gulab jamun, Kaju katli, Rasgola, Sweet Karanji.	04
Unit 8	<b>Oriental Cooking:</b> Sweet corn soup, Manchurian, Hakka noodles, Spring roll, Tom Yum soup, Tofu in green sauce, Vegetable in red sauce, Pad Thai noodles <b>Mexican, Chinese, Tacos, Tortillas</b>	04

### References:

1. Food science B .Shrilakshmi (Third Edition) New Age International Publication
2. Antia F.P.,1966, Clinical Dietetics and Nutrition , Oxford University press,Mumbai.
3. Ballantyne Janet, 1995 Garden Ways Joy of Gardening Cook Book A Garden Way Publishing Book,Stoery Communications Inc.,Pownal Vermont, U.S.A
4. Cameron G.Allan,fox a Brian 1989 Food Science Nutrition and Health Edward Arnold London Melbourne Auckland
5. Crusius vera Clauseen,1984,Quantity Food Management Surjeet Publications, Delhi
6. Frazier Wcwesthoff D.C 1986.Food Microbiology Tata Mcgrew Hill Publishing Company limited, New Delhi
7. Griswold R.M 1962,Experimental study of Foods, Houghton Mifflin company Boston
8. Meyer Lillian hogland 1987 food chemistry CBS publishers and distributors, new Delhi .
9. Mizer a david ,porter mary ,sonnier beth ,1987 food theory and application 1<sup>st</sup> edn., john wiley sons inc., new work.
10. Philip e thangam ,1965, modern cookery ,2 vols orient longman ,Mumbai.
11. Allok Pande, health-mental vs spiritual perspectives NAMAH, J1 of Sriarobindo International Institute for Integral Health and Research Vol. 8, Issue, 3,15 Oct, 2000
12. Gabriel Cousens, Spiritual Nutrition, Cassandra press, P. O. Box. 868 Sanrafia.
13. Shreelaxmi. R. N. Shakuntala Manay and H. R. Nagendra, Foods Gunas and their utilization, first national convention on science and tradition of foods indias heritage of 5000 yrs CFTRI, Mysore, July, 2004.
14. Dodgshun, G. and Peters, M. (2004) Cookery for the Hospitality Industry, Adapted by Saxena, S. Cambridge University Press, Cambridge, U.K.
15. Philip, T. E. (2001) Modern Cookery, Volumes I and II, Orient Longman Ltd, Mumbai, India.