Department of Home Science
Banaras Hindu University

NEP-Based Syllabus of Four-Years Graduation Programme (Revised)

Name of Degree-B.Sc. Home Science

Department of Home Science
Institute of Science
Banaras Hindu University

Course Syllabus of the Four-year Undergraduate Programme (FYUGP) under National Education Policy (NEP) 2020

B.Sc. 4- Years Syllabus

Department of Home Science

Mahila Mahavidyalaya

Banaras Hindu University, Varanasi

	HSCVA21	Offered by the University	2	-
	HSCVA22	Offered by the University	2	-
Total Credits			**20**	
Semester- III	HSCMJ31	Family Resource Management	4	39-40
	HSCMJ32	Apparel Designing	4(2+2)	41-44
	HSCMJ33	Practical based on HSCMJ32		
	HSCMV31	Basic Dress Designing Skill	4 (2+2)	45-48
	HSCMV32	Practical based on HSCMV31		
	HSCMD31	Introduction to Clothing & Textiles	3	49-51
	HSCAE31	Offered by the University	2	-
	HSCSE31	Computer Applications	3(1+2)	53-55
	HSCSE32	Practical based on HSCSE31		
Total Credits			**20**	
Semester- IV	HSCMJ41	Fundamentals of Human Development	5 (3+2)	56-58
	HSCMJ42	Practical based on HSCMJ41		
	HSCMJ43	Rural Development and Outreach Programme	5 (3+2)	59-61
	HSCMJ44	Practical based on HSCMJ43		
	HSCMJ45	Public Nutrition and Health	4 (2+2)	62-63
	HSCMJ46	Practical based on HSCMJ45		
	HSCMN41	Public Nutrition and Health	4 (2+2)	64-65
	HSCMN42	Practical based on HSCMN41		
	HSCAE41	Offered by the University	2	-
Total Credits			**20**	

Semester -V	HSCMJ51	Textiles; Care and Selection	5 (3+2)	67-70
	HSCMJ52	Practical based on HSCMJ51		
	HSCMJ53	NGO Management and Advocacy	4(2+2)	71-74
	HSCMJ54	Practical based on HSCMJ53		
	HSCMJ55	Human Nutrition	5 (3+2)	75-77
	HSCMJ56	Practical based on HSCMJ55		
	HSCMV51	Bakery and Confectionary	4(2+2)	78-79
	HSCMV52	Practical based on HSCMV51		
	HSCIN51	Internship	2	-
Total Credits			**20**	
Semester -VI	HSCMJ61	Advanced Human Development	4 (3+1)	81-82
	HSCMJ62	Practical based on HSCMJ61		
	HSCMJ63	Family Finance Management and Consumer Education	5 (3+2)	83-86
	HSCMJ64	Practical based on HSCMJ63		
	HSCMJ65	Teaching and Learning in Extension	4 (2+2)	87-89
	HSCMJ66	Practical based on HSCMJ65		
	HSCMJ67	Traditional Textiles and Costumes of India	3	90-91
	HSCMV61	Organisational Communication	4 (2+2)	92-95
	HSCMV62	Practical based on HSCMV61		
Total Credits			**20**	

Note: A * Student will choose any one scheme from the offered schemes-

Scheme-I - 4-Year UG Degree (Honours)

Scheme-II- 4-Year UG Degree (Honours with Research)

** Student will choose any one branch (Honours) in 4th year of graduation -

1. Foods and Nutrition
2. Extension and Communication
3. Clothing and Textiles
4. Human Development and Family Studies
5. Family Resource Management

Note B: **Code Abbreviations

1. **MJ= Major**
2. **MN= Minor**
3. **MV= Minor Vocational**
4. **SE= Skill Enhancement**
5. **AE = Ability Enhancement**
6. **VA = Value Added Courses**
7. **IN= Internship**
8. **DI= Dissertation**
9. **R= Honours with Research**

Foods and Nutrition (Semester VII and VIII)

Scheme-I - 4 - Years UG Degree (Honours)

Semester	Course code	Course name	Credits	Page No.
Semester-VII	HSCMJ71	Technical Writing	4	96-98
	HSCMJ72	Food Safety and Microbiology	5 (3+2)	99-101
	HSCMJ73	Practical based on HSCMJ72		
	HSCMJ74	Applied Food Science	5 (3+2)	102-104
	HSCMJ75	Practical based on HSCMJ74		
	HSCMJ76	Social and health Issues in Society	2	105-106
	HSCMN71	Technical Writing	4	107-108
Total Credits			**20**	
Semester VIII	HSCMJ81	Statistics and Computer Application	4 (3+1)	136-139
	HSCMJ82	Practical based on HSCMJ81		
	HSCMJ83	Nutritional Biochemistry	5 (3+2)	140-142
	HSCMJ84	Practical based on HSCMJ83		
	HSCMJ85	Community Nutrition	4 (3+1)	143-145
	HSCMJ86	Practical based on HSCMJ85		
	HSCMJ87	Food Quality Analysis	3(2+1)	146-147
	HSCMJ88	Practical based on HSCMJ87		
	HSCMN81	Statistics and Computer Application	4 (3+1)	148-151
	HSCMN82	Practical based on HSCMN81		
Total Credits			**20**	

Scheme-II- 4-Years UG Degree (Honours with Research)

	HSCMJ7R1	Research Methodology and Scientific Writing	4	188-190

Semester-VII	HSCMJ7R2	Food Safety and Microbiology	5 (3+2)	191-193
	HSCMJ7R3	Practical based on HSCMJ7R2		
	HSCMJ7R4	Applied Food Science	5 (3+2)	194-195
	HSCMJ7R5	Practical based on HSCMJ7R4		
	HSCMJ7R6	Social and Health Issues in Society	2	196-197
	HSCMN7R1	Research Methodology and Scientific Writing	4	198-199
Total Credits			**20**	
Semester-VIII	HSCMJ8R1	Statistics and Computer Application	4(3+1)	226-229
	HSCMJ8R2	Practical based on HSCMJ8R1		
	HSCDS8R1	Project/Dissertation	12	230-231
	HSCMN8R1	Statistics and Computer Application	4 (3+1)	232-235
	HSCMN8R2	Practical based on HSCMN8R1		
Total Credits			**20**	

Extension and Communication (Semester VII and VIII)

Scheme-I - 4 - Years UG Degree (Honours)

Semester	Course code	Course name	Credits	Page No.
Semester-VII	HSCMJ71	Technical Writing	4	96-98
	HSCMJ77	Participatory Programme Management	5 (3+2)	109-112
	HSCMJ78	Practical based on HSCMJ77		
	HSCMJ79	Development Communication	5 (3+2)	113-116
	HSCMJ710	Practical based on HSCMJ79		
	HSCMJ76	Social and Health Issues in Society	2	105-106

	HSCMN71	Technical Writing	4	107-108
Total Credits			**20**	
Semester VIII	HSCMJ81	Statistics and Computer Application	4 (3+1)	136-139
	HSCMJ82	Practical based on HSCMJ81		
	HSCMJ89	Dynamics of Groups and Leadership Development	5 (3+2)	152-155
	HSCMJ810	Practical based on HSCMJ89		
	HSCMJ811	Diffusion and Adoption of Innovation	4 (3+1)	156-158
	HSCMJ812	Practical based on HSCMJ811		
	HSCMJ813	Social Entrepreneurship	3	159-161
	HSCMN81	Statistics and Computer Application	4 (3+1)	148-151
	HSCMN82	Practical based on HSCMN81		
Total Credits			**20**	

Scheme-II- 4-Years UG Degree (Honours with Research)

Semester-VII	HSCMJ7R1	Research Methodology and Scientific Writing	4	188-190
	HSCMJ7R7	Participatory Programme Management	5 (3+2)	200-203
	HSCMJ7R8	Practical based on HSCMJ7R7		
	HSCMJ7R9	Development Communication	5 (3+2)	204-207
	HSCMJ7R10	Practical based on HSC7R9		
	HSCMJ7R6	Social and Health Issues in Society	2	196-197
	HSCMN7R1	Research Methodology and Scientific Writing	4	198-199
Total Credits			**20**	
Semester- VIII	HSCMJ8R1	Statistics and Computer Application	4(3+1)	226-229
	HSCMJ8R2	Practical based on HSCMJ8R1		

	HSCDS8R1	Project/Dissertation	12	230-231
	HSCMN8R1	Statistics and Computer Application	4 (3+1)	232-235
	HSCMN8R2	Practical based on HSCMN8R1		
Total Credits			**20**	

Clothing and Textiles (Semester VII and VIII)

Scheme-I- 4 - Years UG Degree (Honours)

Semester	Course code	Course name	Credits	Page No.
Semester-VII	HSCMJ71	Technical Writing	4	96-98
	HSCMJ711	Textile Testing and Quality Control	5 (3+2)	117-119
	HSCMJ712	Practical based on HSCMJ711		
	HSCMJ713	Draping, Pattern Making and Grading	5 (3+2)	120-122
	HSCMJ714	Practical based on HSCMJ713		
	HSCMJ76	Social and Health Issues in Society	2	105-106
	HSCMN71	Technical Writing	4	107-108
Total Credits			**20**	
Semester VIII	HSCMJ81	Statistics and Computer Application	4 (3+1)	136-139
	HSCMJ82	Practical based on HSCMJ81		
	HSCMJ814	Fashion Design and Illustration	5 (3+2)	162-164
	HSCMJ815	Practical based on HSCMJ814		
	HSCMJ816	Eco-Friendly Textiles; Processing and Finishes	4 (3+1)	165-167
	HSCMJ817	Practical based on HSCMJ816		
	HSCMJ818	Garment Production Technology and Management	3	168-170
	HSCMN81	Statistics and Computer Application	4 (3+1)	148-151
	HSCMN82	Practical based on HSCMN81		

Total Credits			**20**	

Scheme-II- 4-Years UG Degree (Honours with Research)				
Semester-VII	HSCMJ7R1	Research Methodology and Scientific Writing	4	188-190
	HSCMJ7R11	Textile Testing and Quality Control	5 (3+2)	208-210
	HSCMJ7R12	Practical based on HSCMJ7R11		
	HSCMJ7R13	Draping, Pattern Making and Grading	5 (3+2)	211-213
	HSCMJ7R14	Practical based on HSCMJ7R13		
	HSCMJ7R6	Social and Health Issues in Society	2	196-197
	HSCMN7R1	Research Methodology and Scientific Writing	4	198-199
Total Credits			**20**	
Semester- VIII	HSCMJ8R1	Statistics and Computer Application	4(3+1)	226-229
	HSCMJ8R2	Practical based on HSCMJ8R1		
	HSCDS8R1	Project/Dissertation	12	230-231
	HSCMN8R1	Statistics and Computer Application	4 (3+1)	232-235
	HSCMN8R2	Practical based on HSCMN8R1		
Total Credits			**20**	

Human Development and Family Studies (Semester VII and VIII)

Scheme-I - 4 - Years UG Degree (Honours)				
Semester	**Course code**	**Course name**	**Credits**	**Page No.**
Semester-VII	HSCMJ71	Technical Writing	4	96-98
	HSCMJ715	Gender Issues in Human Development and Relationships	5 (3+2)	123-125
	HSCMJ716	Practical based on HSCMJ715		

	HSCMJ717	Family Ecology, Cultural Diversity and Therapy	5 (3+2)	126-130
	HSCMJ718	Practical based on HSCMJ717		
	HSCMJ76	Social and Health Issues in Society	2	105-106
	HSCMN71	Technical Writing	4	107-108
Total Credits			**20**	

Semester VIII	HSCMJ81	Statistics and Computer Application	4 (3+1)	136-139
	HSCMJ82	Practical based on HSCMJ81		
	HSCMJ819	Methods and Techniques of Assessment in Human Development	5 (3+2)	171-174
	HSCMJ820	Practical based on HSCMJ819		
	HSCMJ821	Programme Development for Vulnerable Families	4 (3+1)	175-178
	HSCMJ822	Practical based on HSCMJ821		
	HSCMJ823	Dynamics of Human Development	3	179-181
	HSCMN81	Statistics and Computer Application	4 (3+1)	148-151
	HSCMN82	Practical based on HSCMN81		
Total Credits			**20**	

Scheme-II- 4-Years UG Degree (Honours with Research)

Semester-VII	HSCMJ7R1	Research Methodology and Scientific Writing	4	188-190
	HSCMJ7R15	Gender Issues in Human Development and Relationships	5 (3+2)	214-216
	HSCMJ7R16	Practical based on HSCMJ7R15		
	HSCMJ7R17	Family Ecology, Cultural Diversity and Therapy	5 (3+2)	217-220
	HSCMJ7R18	Practical based on HSCMJ7R17		
	HSCMJ7R6	Social and Health Issues in Society	4	196-197

	HSCMN7R1	Research Methodology and Scientific Writing	2	198-199
Total Credits			**20**	
Semester- VIII	HSCMJ8R1	Statistics and Computer Application	4(3+1)	226-229
	HSCMJ8R2	Practical based on HSCMJ8R1		
	HSCDS8R1	Project/Dissertation	12	230-231
	HSCMN8R1	Statistics and Computer Application	4 (3+1)	232-235
	HSCMN8R2	Practical based on HSCMN8R1		
Total Credit			**20**	

Family Resource Development (Semester VII and VIII)

Scheme-I- 4 – Years UG Degree (Honours)

Semester	Course code	Course name	Credits	Page No.
Semester-VII	HSCMJ71	Technical Writing	4	96-98
	HSCMJ719	Consumer Product Safety and Legislation	5 (3+2)	131-133
	HSCMJ720	Practical based on HSCMJ719		
	HSCMJ721	Ergonomics and Appropriate Technology	5 (3+2)	134-135
	HSCMJ722	Practical based on HSCMJ721		
	HSCMJ76	Social and Health Issues in Society	2	105-106
	HSCMN71	Technical Writing	4	107-108
Total Credits			**20**	
Semester VIII	HSCMJ81	Statistics and Computer Application	4 (3+1)	136-139
	HSCMJ82	Practical based on HSCMJ81		
	HSCMJ824	Family Finance and Personal Financial Management	5 (3+2)	182-183
	HSCMJ825	Practical based on HSCMJ824		
	HSCMJ826	Interior Designing and Landscaping	4 (3+1)	184-185
	HSCMJ827	Practical based on HSCMJ826		

	HSCMJ828	Advertising and Labelling information	3	186-187
	HSCMN81	Statistics and Computer Application	4 (3+1)	148-151
	HSCMN82	Practical based on HSCMN81		
Total Credits			**20**	

Scheme-II- 4-Years UG Degree (Honours with Research)

Semester-VII	HSCMJ7R1	Research Methodology and Scientific Writing	4	188-190
	HSCMJ7R19	Consumer Product Safety and Legislation	5 (3+2)	221-223
	HSCMJ7R20	Practical based on HSCMJ7R19		
	HSCMJ7R21	Ergonomics and Appropriate Technology	5 (3+2)	224-225
	HSCMJ7R22	Practical based on HSCMJ7R21		
	HSCMJ7R6	Social and Health Issues in Society	2	196-197
	HSCMN7R1	Research Methodology and Scientific Writing	4	198-199
Total Credits			**20**	

Semester-VIII	HSCMJ8R1	Statistics and Computer Application	4(3+1)	226-229
	HSCMJ8R2	Practical based on HSCMJ8R1		
	HSCDS8R1	Project/Dissertation	12	230-231
	HSCMN8R1	Statistics and Computer Application	4 (3+1)	232-235
	HSCMN8R2	Practical based on HSCMN8R1		
Total Credits			**20**	

BANARAS HINDU UNIVERSITY

(Detailed Syllabus of different Courses under NEP 2020)

Department of Home Science

Faculty of Science

Semester -I

<table>
<tr><td>Course Title</td><td colspan="4">Introduction to Community Science (HSCMJ11)</td></tr>
<tr><td>Category of Course</td><td colspan="4">Major</td></tr>
<tr><td>Credits& Hours of Teaching</td><td colspan="4"><table>
<tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr>
<tr><td>Credits</td><td>04</td><td>-</td><td>04</td></tr>
<tr><td>Hours of Teaching (Total)</td><td>60</td><td>-</td><td>60</td></tr>
</table></td></tr>
<tr><td>Course Objectives</td><td colspan="4">To provide fundamental knowledge regarding the basic concept of Community Science and its different branches: Food and Nutrition, Extension & Communication, Textiles & Clothing, Human Development and Family Resource Management</td></tr>
<tr><td colspan="5">Course Content</td></tr>
<tr><td colspan="5"><table>
<tr><th>Units</th><th>Course Content</th><th>Hr. of Teaching</th></tr>
<tr><td>I</td><td>Introduction to Community Science (Home Science)
• Definition, Meaning, Scope and Significance of Community Science, Brief introduction of branches of Home Science (Community Science)
Introduction to Food and Nutrition
• Basic definitions of Food and Nutrition- Nutrition, Balanced Diet, Food Pyramid, My Healthy Plate, Rainbow Diet etc.
• Composition, functions and classification of food
• Food Groups and its significance
• Preliminary preparations in cooking</td><td>12</td></tr>
</table></td></tr>
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	• Principles, Objectives and Methods of cooking: its advantages and disadvantages	
II	**Introduction to Extension Education** • Concept of Education, Extension Education, adult education, distance education, Formal, Non-Formal and Informal Education • Concept, Meaning, objectives, Scope, principles and philosophy of Extension Education, Extension Worker- Qualities and Role • Extension in Community Science/Home Science: Concept, Scope and its role in national development	12
III	**Introduction to Human Development** • Meaning and importance of Human Development • Meaning of terms "Growth and "Development", Principles of Human Development • Different stages of Human Development • Define physical, motor, social, emotional, cognitive and language development and personality development	12
IV	**Introduction to Textile& Clothing** • Importance of studying textiles, Concepts and classification of textile fibres; Natural fibres and Man-made fibres (Basic components, degree of polymerization, properties, uses and care) • Basic terminology related to Technical-textiles; nano textile, agro textile, smart textile, geo textile, medical textile, ecofriendly textiles, auto-mobile textile, sports textile, industrial textile, Home Textile • Basic Principles of Clothing construction, Sewing equipment's and other tools required for drafting, cutting, stitching, basic Sewing machine; parts, uses and care.	12
V	**Introduction to Family Resource management** • Meaning and importance of family resource management • Process of management; planning, controlling andevaluation • Types, of resources. Classification and characteristics of resources. • Time management	12

	• Energy management • Money management • Decision making in family	

Texts / References	1. Srilakshmi, B - Nutrition Science, New Age International Publishers, seventh edition 2. Swaminathan, M. (1997), Essentials of Food and Nutrition, vol I &II, Second edition, Bangalore, BAPPCO 3. Hurlock, B. E. Child Development, McGraw Hill Education, Indian Edition, Sixth Edition 4. Corbman, B.P (1983). Textiles: Fiber to Fabric (6^{th} Edition). New York: McGraw Hill Publication 5. Ray, G.L. Extension Communication and Management, Kalyani Publisher 6. Mullick, P. Textbook of Home Science, Kalyani Publisher 7. Singh, B. Aahar Vigyan Evam Poshan, Hindi Edition, Panchsheel Prakashan
Learning Outcomes	• Understanding of holistic approaches of Community Science like availability of proper nutrition for health, basics of clothing. • Concept and stages of development of Children. • Importance of Extension education in the community and the knowledge of management of vital resources.

Course Title	**Introduction to Community Science (HSCMN11)**
Category of Course	**Minor**
Credits & Hours of Teaching	

	Theory	Practical	Cumulative
Credits	04	NA	04
Hours of Teaching (Total)	60	NA	60

Course Objectives	To provide fundamental knowledge regarding the basic concept of Community Science and its several sections includes Food and Nutrition, Extension Education, Textiles, Child Development and Family Resource Management

Course Content

Units	Course Content	Hr. of Teaching
I	**Introduction to Community Science (Home Science)** • Definition, Meaning, Scope and Significance of Community Science, Brief introduction of branches of Home Science (Community Science) **Introduction to Food and Nutrition** • Basic definitions in Food and Nutrition- Nutrition, Balanced Diet, Food Pyramid, My Healthy Plate, Rainbow Diet • Composition, Functions and Classification of Food • Food Groups and its significance • Preliminary Preparation in cooking • Principles, Objectives and Methods of cooking: its advantages and disadvantages	12
II	**Introduction to Extension Education** • Concept of Education, Extension Education, adult education, distance education, Formal, Non Formal and Informal Education • Concept, Meaning, objectives, Scope, principles and philosophy of Extension Education, Extension Worker- Qualities and Role • Extension in Community Science/Home Science: Concept, Scope and	12

	its role in national development	
III	**Introduction to Human Development** • Meaning and importance of Human Development • Meaning of terms "Growth and "Development", Principles of Human Development • Different stages of Human Development • Define physical, motor, social, emotional, cognitive and language development and personality development	12
IV	**Introduction to Textile** • Importance of studying textiles, Concepts and classification of textile fibres; Natural fibres and Man-made fibres (Basic components, degree of polymerization, properties, uses and care) • Basic terminology related to Technical-textiles; nano textile, agro textile, smart textile, geo textile, medical textile, ecofriendly textiles, auto-mobile textile, sports textile, industrial textile, Home Textile • Basic Principles of Clothing construction, Sewing equipment's and other tools required for drafting, cutting, stitching, basic Sewing machine; parts, uses and care.	12
V	**Introduction to Family Resource management** • Meaning and importance of family resource management • Process of management; planning, controlling and evaluation • Types, of resources. Classification and characteristics of resources. • Time management • Energy management • Money management • Decision making in family	12

Texts / References	1. Srilakshmi, B - Nutrition Science, New Age International Publishers, seventh edition 2. Swaminathan, M. (1997), Essentials of Food and Nutrition, vol I &II, Second edition, Bangalore, BAPPCO

	3. Hurlock, B. E. Child Development, McGraw Hill Education, Indian Edition, Sixth Edition 4. Corbman, B.P (1983). Textiles: Fiber to Fabric (6th Edition). New York: McGraw Hill Publication 5. Ray, G.L. Extension Communication and Management, Kalyani Publisher 6. Mullick, P. Textbook of Home Science, Kalyani Publisher 7. Singh, B. Aahar Vigyan Evam Poshan, Hindi Edition, Panchsheel Prakashan
Learning Outcomes	• Understanding of holistic approaches of Community Science like availability of proper nutrition for health, basics of clothing. • Concept and stages of development of Children. • Importance of Extension education in the community and the knowledge of management of vital resources.

Course Title	**Introduction to Community Science (HSCMD11)**
Category of Course	**MD**
Credits & Hours of Teaching	

	Theory	Practical	Cumulative
Credits	03	NA	03
Hours of Teaching (Total)	45	NA	45

Course Objectives	To provide fundamental knowledge regarding the basic concept of Community Science and its several sections includes Food and Nutrition, Extension Education, Textiles, Child Development and Family Resource Management

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	**Introduction to Community Science** • Definition, Meaning, Scope and Significance of Community Science • Branches of Community Science and its role in the development of the Nation • Role of Nutrition for Nutritional well-being of Nation	09
II	**Introduction to Extension Education** • Concept of Education, Extension Education, adult education, distance education, Formal, Non Formal and Informal Education • Concept, Meaning, objectives, Scope, principles and philosophy of Extension Education, Extension Worker- Qualities and Role • Extension in Community Science/Home Science: Concept, Scope and its role in national development	09
III	**Introduction to Human Development** • Meaning and importance of Human Development • Meaning of terms "Growth and "Development", Principles of Human Development • Different stages of Human Development • Define physical, motor, social, emotional, cognitive and language development and personality development	09

IV	**Introduction to Textile** • Importance of studying textiles, Concepts and classification of textile fibres; Natural fibres and Man-made fibres (Basic components, degree of polymerization, properties, uses and care)	09
V	**Introduction to Family Resource management** • Meaning and importance of family resource management • Process of management; planning, controlling and evaluation • Types, of resources. Classification and characteristics of resources.	09

Texts / References	1. Srilakshmi, B - Nutrition Science, New Age International Publishers, seventh edition 2. Swaminathan, M. (1997), Essentials of Food and Nutrition, vol I &II, Second edition, Bangalore, BAPPCO 3. Hurlock, B. E. Child Development, McGraw Hill Education, Indian Edition, Sixth Edition 4. Corbman, B.P (1983). Textiles: Fiber to Fabric (6^{th} Edition). New York: McGraw Hill Publication 5. Ray, G.L. Extension Communication and Management, Kalyani Publisher 6. Mullick, P. Textbook of Home Science, Kalyani Publisher 7. Singh, B. Aahar Vigyan Evam Poshan, Hindi Edition, Panchsheel Prakashan
Learning Outcomes	• Understanding of holistic approaches of Community Science like availability of proper nutrition for health, basics of clothing. • Concept and stages of development of Children. • Importance of Extension education in the community and the knowledge of management of vital resources.

Course Title	**Language (HSCAE11)**
Category of Course[1]	**AEC -1**
Credits[2]& Hours of Teaching	

	Theory	Practical	Cumulative
Credits	02	-	02
Hours of Teaching (Total)	30	-	30

Course Objectives	NA

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	NA	
II	NA	
III	NA	
IV	NA	
V	NA	

Texts / References	NA
Learning Outcomes	NA

[1] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[2] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

Course Title	**Therapeutic Nutrition and Diet Counseling (HSCSE11 and HSCSE12)**			
Category of Course[3]	**SEC**			
Credits[4]& Hours of Teaching		Theory	Practical	Cumulative
	Credits	2	1	3
	Hours of Teaching (Total)	30	30	60
Course Objectives	To provide fundamental concept and role of the diet therapy to treat different disease conditions.			

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	**Concept of Therapeutic Nutrition and Diet** • Purpose and principles of therapeutic diets, • Modification of normal diet and classification of therapeutic diet, • Routine hospital diets – regular diet, soft diet, clear diet and full fluid diet, • Basic concept and methods of – Oral feeding, Tube feeding, parenteral feeding & intravenous feeding. • Collection of background data – socio-economic, medical and dietary history of patients.	10
II	**Etiology, clinical features and nutritional management of the following conditions-** • **Weight management-** Underweight, Overweight or Obesity • **Gastro-Intestinal Tract-** Diarrhoea**,** Constipation, Esophagitis**,** Gastritis**,** Peptic ulcer**,** Ulcerative Colitis Tropical Sprue and Celiac Disease,	15

[3] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[4] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	• **Liver, Biliary Tract and Pancreas -** Jaundice and Viral Hepatitis, Cirrhosis of Liver, Hepatic Coma, Cholecystitis and Cholelithiasis, Acute and Chronic Pancreatitis • **Cardiovascular Diseases –** Hypertension, Atherosclerosis, Hyperlipidaemia, Myocardial Infarction • **Renal and Urinary Diseases –** Nephritis (type I & II), Acute & Chronic Renal Failure, Renal Calculi. • **Metabolic and Endocrine Disorders** – Gout, Diabetes Mellitus, Hypo and Hyperthyroidism • **Infectious Diseases**- Fever (typhoid, tuberculosis) • **Surgery and Injury** – Gastrectomy, Burns and Fractures. • **Dietary deficiency Disorders**- PEM, Anaemia (Iron and Folic Acid deficiency, Pernicious Anaemia) • **Miscellaneous**– Cancer	
III	**Food and Drug Interaction** • Drugs affecting appetite and food intake • Drugs affecting absorption, metabolism and excretion of nutrients	05
PRACTICAL		
I	Planning and Preparation of liquid diet, soft diet, high and low-calorie diet, with modified fat and carbohydrate level,	10
II	Planning and preparation of low and moderate cost diet for the treatment of PEM and Anaemia	10
III	Preparation of diet chart for the following conditions- • Fever with Diarrhoea • Peptic ulcer with Hyperlipidaemia • Hypertension with Diabetes mellitus • Acute hepatitis.	10

Texts / References	1. Shrilaxmi, B. (2016). Dietetics. New Age International. 2. Khanna K., Gupta S., Passi S.J, Seth R., Mahana R., &Puri S. (2020). Textbook of Nutrition and Dietetics. Elite Publishing House. 3. Swaminathan M. (2015). Advanced Text – Book on Food & Nutrition Volume-2. The Bangalore Printing & Publishing Co., LTD. 4. Joshi S.A. Nutrition and Dietetics, Tata McGraw Hill Publications, New Delhi. 5. Antia F.P.,& Philip A. Clinical Nutrition and Dietetics, Oxford Publishing Company.
Learning Outcomes	Understanding of modification of normal diet to therapeutic diet in different disease conditions, planning and preparation of several diets during specific diseased condition.

<table>
<tr><td>Course Title</td><td colspan="4">Offered by the University (HSCVA11)</td></tr>
<tr><td>Category of Course[5]</td><td colspan="4">VAC-1</td></tr>
<tr><td>Credits[6]& Hours of Teaching</td><td colspan="4"><table>
<tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr>
<tr><td>Credits</td><td>04</td><td>NA</td><td>04</td></tr>
<tr><td>Hours of Teaching (Total)</td><td>60</td><td>NA</td><td>60</td></tr>
</table></td></tr>
<tr><td>Course Objectives</td><td colspan="4">NA</td></tr>
<tr><td colspan="5">Course Content<table>
<tr><th>Units</th><th>Course Content</th><th>Hr. of Teaching</th></tr>
<tr><td>I</td><td>NA</td><td></td></tr>
<tr><td>II</td><td>NA</td><td></td></tr>
<tr><td>III</td><td>NA</td><td></td></tr>
<tr><td>IV</td><td>NA</td><td></td></tr>
<tr><td>V</td><td>NA</td><td></td></tr>
</table></td></tr>
<tr><td>Texts / References</td><td colspan="4">NA</td></tr>
<tr><td>Learning Outcomes</td><td colspan="4">NA</td></tr>
</table>

[5] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[6] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

BANARAS HINDU UNIVERSITY

(Detailed Syllabus of different Courses under NEP 2020)

Department of Home Science

Faculty of Science

Semester -2

<table>
<tr><td>Course Title</td><td colspan="4">Fundamentals of Nutrition and Food Science (HSCMJ21 and HSCMJ22)</td></tr>
<tr><td>Category of Course[7]</td><td colspan="4">Major</td></tr>
<tr><td>Credits[8]& Hours of Teaching</td><td colspan="4"><table>
<tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr>
<tr><td>Credits</td><td>03</td><td>01</td><td>04</td></tr>
<tr><td>Hours of Teaching (Total)</td><td>45</td><td>30</td><td>75</td></tr>
</table></td></tr>
<tr><td>Course Objectives</td><td colspan="4">• To provide basic knowledge of Nutrition and common understandings of health
• To introduce several food groups and to perform different experiments to determine nutrient requirements of Individuals</td></tr>
<tr><td colspan="5">Course Content</td></tr>
<tr><td colspan="5"><table>
<tr><th>Units</th><th>Course Content</th><th>Hr. of Teaching</th></tr>
<tr><td>I</td><td>Basics terms of Nutrition: Nutrients, Phytochemicals, Antioxidants, Functional Foods, Nutritional status, Body Mass Index, Nutraceuticals etc</td><td>05</td></tr>
<tr><td>II</td><td>Relationship of nutrition to health, growth and human welfare: Role of nutrients in the body and Nutritional deficiencies</td><td>10</td></tr>
</table></td></tr>
</table>

[7] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[8] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

III	Recommended Dietary Allowances (RDA): Factors affecting RDA, General principle for deriving RDA, Reference Men & Women and Basal Metabolism-Factors affecting rate of BMR	10
IV	Nutrients and its importance: Macro Nutrients- Carbohydrate, Protein, Fats, Micro Nutrients- Vitamins and Minerals and Water	10
V	Importance, functions and nutritive value of foods: Cereals and Millets, Pulses and Legumes, Milk and Milk Products, Egg, Meat and Fish, Fats and Oils, Fruits & Vegetables, Sugar and Jaggery, Spices and condiments	10
Practical		
I	Understanding food composition table and exchange list	15
II	Learning food frequency table	05
III	Calculation of energy expenditure of individuals Dietary plans for life span stages according to demographic profile and RDA.	10

Texts / References	1. Srilakshmi, B. Food Science, New Age International Publishers, Seventh edition 2. Bamji, S.M., Rao, P.N., and Reddy, V. (2003). Textbook of Human Nutrition. Oxford and IBH Publishing Co Pvt Ltd. 3. Swaminathan, M. (1997), Essentials of Food and Nutrition, VolI& II, Second edition, Bangalore, BAPPCO 4. Shakuntala, M.N., Shadakshara swamy, M. (1998). Foods, Facts and principles New age international publishers, New Delhi. 5. Srilakshmi, B. Nutrition Science, New Age International Publishers, seventh edition 6. Singh, B. Aahar Vigyan Evam Poshan, Hindi Edition, Panchsheel Prakashan,
Learning Outcomes	Learning of basic terms of Nutrition, understanding of different concepts related to health and nutrition, nutritional deficiencies and nutritive values of basic food groups.

Course Title	**Fundamentals of Nutrition and Food Science (HSCMN21 and HSCMN22)**
Category of Course[9]	**Minor**
Credits[10]& Hours of Teaching	

	Theory	Practical	Cumulative
Credits	03	01	04
Hours of Teaching (Total)	45	30	75

Course Objectives	• To provide basic knowledge of Nutrition and common understandings of health • To introduce several food groups and to perform different experiments to determine nutrient requirements of Individuals

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	Basics terms of Nutrition: Nutrients, Phytochemicals, Antioxidants, Functional Foods, Nutritional status, Body Mass Index, Nutraceuticals etc.	05
II	Relationship of nutrition to health, growth and human welfare: Role of nutrients in the body and Nutritional deficiencies	10
III	Recommended Dietary Allowances (RDA): Factors affecting RDA, General principle for deriving RDA, Reference Men & Women and Basal Metabolism-Factors affecting rate of BMR	10
IV	Nutrients and its importance: Macro Nutrients- Carbohydrate, Protein, Fats, Micro Nutrients- Vitamins and Minerals and Water	10
V	Importance, functions and nutritive value of foods: Cereals and Millets, Pulses and Legumes, Milk and Milk Products, Egg, Meat and Fish, Fats and Oils, Fruits & Vegetables, Sugar and Jaggery, Spices and condiments	10

[9] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[10] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

Practical		
I	Understanding food composition table and exchange list	15
II	Learning food frequency table	05
III	Calculation of energy expenditure of individuals Dietary plans for life span stages according to demographic profile and RDA	10

Texts / References	1. Srilakshmi, B. Food Science, New Age International Publishers, Seventh edition 2. Bamji, S.M., Rao, P.N., and Reddy, V. (2003). Textbook of Human Nutrition. Oxford and IBH Publishing Co Pvt Ltd. 3. Swaminathan, M. (1997), Essentials of Food and Nutrition, VolI& II, Second edition, Bangalore, BAPPCO 4. Shakuntala, M.N., Shadakshara swamy, M. (1998). Foods, Facts and principles New age international publishers, New Delhi. 5. Srilakshmi, B. Nutrition Science, New Age International Publishers, seventh edition 6. Singh, B. Aahar Vigyan Evam Poshan, Hindi Edition, Panchsheel Prakashan,
Learning Outcomes	• Learning of basic terms of Nutrition, understanding of different concepts related to health and nutrition, nutritional deficiencies and nutritive values of basic food groups. • Knowledge of performing calculations to determine nutrient requirement of individuals

Course Title	**Basics of Human Development (HSCMD21)**
Category of Course[11]	Multi Disciplinary

Credits[12]& Hours of Teaching

	Theory	Practical	Cumulative
Credits	03	NA	03
Hours of Teaching (Total)	45	NA	45

Course Objectives

- To develop basic understanding of human development.
- To learn about the principles of human development.
- To gain knowledge about characteristics of different stages of human development.

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	Need and Scope of Human Development,	03
II	Principles of Development	08
III	Stages of Human Development; Characteristics and Hazards of different stages of life span; Prenatal, Infancy, Early, Middle and Late Childhood, Puberty, Early and Late Adolescence, Early, Middle, Late Adulthood and Old age. Developmental Task.	16
IV	Reproductive System (Male & Female), Conception. Prenatal Development, Maternal health and Care during pregnancy, Hazards during prenatal development, Birth Process and Complications, Postnatal care of the mother and new born	16
V	Study of developmental Pattern in brief.	02

[11] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[12] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

Texts / References	1. Elizabeth B. Hurlock; child Development (sixth edition); McGraw Hill Education (India) private limited (2017). 2. 2. Dr. Vrinda Singh; Manav Vikas Evam ParivarikSambandh (Human Development & Family Relationship; panchsheelprkashan (2019). India. 3. Prof. Kamlesh Sharma, Dr. Lalita Sharma; Baal Vikas (Child Development); star publication Agra (Hindi), (2020), India. 4. . Ross & Wilson; Anatomy and Physiology in Health and Illness (thirteenth edition); Shree Ram publication (2021). 5. Neeta Aggarwal & Dr. Akanksha Tripathi; Manav Vikas (paperback,1 st edition, Hindi), Agrawal publications, India.
Learning Outcomes	▪ Understanding will be developed about the concepts of human growth and development. ▪ Basic knowledge of the male and female reproductive system. ▪ Awareness among the students about care in different stages of life.

<table>
<tr><td>Course Title</td><td>Language (HSCAE21)</td></tr>
<tr><td>Category of Course[13]</td><td>AEC -2</td></tr>
<tr><td>Credits[14]& Hour of Teaching</td><td>
<table>
<tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr>
<tr><td>Credits</td><td>02</td><td>NA</td><td>02</td></tr>
<tr><td>Hour of Teaching (Total)</td><td>30</td><td>NA</td><td>30</td></tr>
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</td></tr>
<tr><td>Course Objectives</td><td>NA</td></tr>
<tr><td colspan="2">Course Content
<table>
<tr><th>Units</th><th>Course Content</th><th>Hr. of Teaching</th></tr>
<tr><td>I</td><td>NA</td><td></td></tr>
<tr><td>II</td><td>NA</td><td></td></tr>
<tr><td>III</td><td>NA</td><td></td></tr>
<tr><td>IV</td><td>NA</td><td></td></tr>
<tr><td>V</td><td>NA</td><td></td></tr>
</table>
</td></tr>
<tr><td>Texts / References</td><td>NA</td></tr>
<tr><td>Learning Outcomes</td><td>NA</td></tr>
</table>

[13] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[14] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

<table>
<tr><td>Course Title</td><td colspan="4">Textile Surface Design and Basic Stitching (HSCSE21 and HSCSE22)</td></tr>
<tr><td>Category of Course[15]</td><td colspan="4">Skill Enhancement Course</td></tr>
<tr><td>Credits[16]& Hours of Teaching</td><td colspan="4"><table><tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr><tr><td>Credits</td><td>01</td><td>02</td><td>03</td></tr><tr><td>Hours of Teaching (Total)</td><td>15</td><td>60</td><td>75</td></tr></table></td></tr>
<tr><td>Course Objectives</td><td colspan="4">To impart knowledge regarding the fundamentals of textile surface designing and basic stitching
To develop an understanding of different stitching methods used in clothing construction.
To make Students learn various techniques to create surface designs on fabric
To enhance students' creativity, designing skills and technical skills in textile designing and sewing</td></tr>
<tr><td colspan="5">Course Content</td></tr>
<tr><td colspan="5"><table><tr><th>Units</th><th>Course Content</th><th>Hr. of Teaching</th></tr><tr><td>I</td><td>Introduction to Textile Surface Designing
Overview of textile surface designing, Understanding principles and elements of design, Introduction to various techniques of textile surface designing; Printing, Dyeing, Embroidery Stitches& other embellishment</td><td>06</td></tr></table></td></tr>
</table>

[15] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[16] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

II	**Dyeing & Printing techniques** Introduction to various methods of dyeing & printing; solid dyeing, tie & dye, batik, Block, Stencil, screen, spray printing	02
III	**Embroidery Stitches & other embellishment techniques** Introduction to various embroidery stitches, applique & patch, Bead & sequins work	04
IV	**Basic Stitching Process** Working of simple Sewing machine, Design details; Seam, Pleats, gathers, smoking, darts, tucks, loops, fasteners, yokes	03
PRACTICAL		
I	Development of samples using solid dyeing and Printing; Block printing, screen printing, stencil & spray printing, tie & dye and Batik	10
II	Making samples by using various embroidery stitch running, buttonhole, herringbone, chain, satin, stem, French knot, feather, fly etc. stitches.	10
III	Practicing other embellishment techniques; aariwork, mirror work, applique work, patch work and bead &sequins work, quilts.	10
IV	Practicing basic seam on straight line, curves and corners, Development of samples of different seams, darts, tucks, smoking, pleats, gathers, pockets, collars, loops, fasteners	20
V	Project Development Stitching and embellishing self-designed fabric projects (Cushion covers//table mats/apron/kurta/Jacket/child frock/wall hanging etc.	10
Texts / References		

	1. Haynes Christine (2014). *The Complete Photo Guide to Clothing Construction*. United States: Quarry Books. 2. The Reader's Digest Association (2010). *Reader's Digest NewComplete Guide to Sewing*. New York: Trusted Media Brand. 3. Mullick, P. (2002). *Garment Construction Skills.* New Delhi: Kalyani Publishers. 4. Kallal Mary J. (1985). *Clothing Construction*. London: Prentice Hall
Learning Outcomes	By the end of the course, students will be able to: • Understand the principles and elements of textile surface designing. • Acquire understanding for design concepts and transfer them onto fabric. • Apply basic stitches for textile construction and embellishment. • Demonstrate proficiency in various surface design techniques. • Create textile samples and finished projects using learned techniques. • Practice proper safety measures while working with textiles and stitchingtools

Course Title	**Offered by the University (HSCVA21)**
Category of Course	VAC-2
Credits& Hours of Teaching	

	Theory	Practical	Cumulative
Credits	02	NA	02
Hours of Teaching (Total)	30	NA	30

Course Objectives	NA

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	NA	
II	NA	
III	NA	
IV	NA	
V	NA	

Texts / References	NA
Learning Outcomes	NA

<table>
<tr><td>Course Title</td><td>Offered by the University (HSCVA22)</td></tr>
<tr><td>Category of Course[17]</td><td>VAC-3</td></tr>
<tr><td>Credits[18]& Hour of Teaching</td><td>
<table>
<tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr>
<tr><td>Credits</td><td>02</td><td>NA</td><td>02</td></tr>
<tr><td>Hour of Teaching (Total)</td><td>30</td><td>NA</td><td>30</td></tr>
</table>
</td></tr>
<tr><td>Course Objectives</td><td>NA</td></tr>
<tr><td colspan="2">Course Content
<table>
<tr><th>Units</th><th>Course Content</th><th>Hr. of Teaching</th></tr>
<tr><td>I</td><td>NA</td><td></td></tr>
<tr><td>II</td><td>NA</td><td></td></tr>
<tr><td>III</td><td>NA</td><td></td></tr>
<tr><td>IV</td><td>NA</td><td></td></tr>
<tr><td>V</td><td>NA</td><td></td></tr>
</table>
</td></tr>
<tr><td>Texts / References</td><td>NA</td></tr>
<tr><td>Learning Outcomes</td><td>NA</td></tr>
</table>

[17] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[18] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

BANARAS HINDU UNIVERSITY

(Detailed Syllabus of different Courses under NEP 2020)

Department of Home Science

Faculty of Science

Semester -III

Course Title	**Family Resource Management (HSCMJ31)**
Category of Course[19]	**Major**
Credits[20]& Hours of Teaching	

	Theory	Practical	Cumulative
Credits	04	-	04
Hours of Teaching (Total)	60	-	60

Course Objectives	▪ To develop basic understanding about family resource management. ▪ To learn about the steps of home management. ▪ To gain knowledge about different stages of family life cycle.

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	Meaning and importance of family resource management Family: Meaning, Definition, Characteristics, Types, functions and Stages of Family Life Cycle	12
II	Resources: Concept and Types, Importance of resources, Characteristics, factors affecting utilization of resources, methods to maximize the use of resources	10
III	Management: Introduction, Development of management process, Management process: Planning; steps of planning, characteristics of	14

[19] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[20] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

Units	Course Content	Hr. of Teaching
	planning, controlling; steps in controlling, adjustment, Evaluation; types of evaluation, Relationship between Planning, Controlling and Evaluation	
IV	Energy management: Fatigue, Reasons for fatigue, Types of fatigue, Measures to relieve or avoid fatigue, Work-Simplification; Advantages of work simplification, Techniques of work Simplification, Mundel's classes of change	12
V	Elements of Arts; Line, Shape, Texture, Design, Light, Colour and Shape Principles of Designs; Harmony, Proportion, Balance, Emphasis, Rhythm Colour; Meaning, Prangs Colour System Qualities or Dimensions of Colours, Classification of Colours, Colour Wheel, Types of Colour schemes. Flower arrangements; Types of Flower Arrangement, Rules for Flower Arrangement, Japanese flower arrangement in brief. Ergonomics; Meaning, Principles, Benefits of Ergonomics.	12

Texts / References	1. Tami J. Moore, Sylvia M. Asay ; Family Resource Management; SAGE piblications, Inc; third edition (2017). 2. Maike Andresen Christian Nowak; Human Resource Management Practices, Springer International Publishing AG. India 3. Imam Nadaf ; Diploma in family management: your family members are the potential energy of your life ; Notion Press; 1st edition (2017), India . 4. BelaBhargava; Family Resource Management & Interior Decoration, university book house pvt. Ltd, First Reprint edition (2018), india 5. PremavathySeetharaman , Sonia Vatra , PreetiMehra ; An introduction to family resource management;CBS publisher, (2019) India , 6. Dr.Brinda Singh ; Home Management & Interior Decoration; panchsheelprakashan , seventeenth edition (2023), india 7. PremlataMullick , Text Book Of Home Science; Kalyani publishers (2012) India.
Learning Outcomes	▪ To understand the concepts of human and non-human resources. ▪ Deep knowledge about the steps of decision making. ▪ Learn about the concept of time, energy and money management.

	▪ To study about the principles of art and design.

Course Title	**Apparel Designing (HSCMJ32 and HSCMJ33)**
Category of Course	**Major**
Credits & Hours of Teaching	

	Theory	Practical	Cumulative
Credits	02	02	04
Hours of Teaching (Total)	30	60	90

Course Objectives

- To make students learn fundamental techniques of apparel design and its application
- To impart comprehensive understanding and enable students to learn structural design as well as applied design details in apparel construction
- To lead students through the step-by-step entire apparel design process.
- To make the students familiar with multiple pattern-making techniques.
- To enhance students' creativity and skills in apparel designing and sewing
- To impart skills for applying structural and applied designing techniques in apparel construction

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	**Introduction to Apparel Designing** Components of Apparel design; silhouette, texture, colour, details, and their application in relation to different figures, Basic principles of apparel designing, Sources of inspiration for designing; current fashion trends, Steps for apparel designing; analyzing body measurements, designing/sketching of dress details, pattern making, layout preparation and marking, cutting, stitching, applied designing.	7
II	**Body measurements &Fabric selection** Body measurements; types, procedures, and precautions while taking	5

	body measurements for different garments, Standard textile fabric terms; chiffon, georgette, cambric, denim, gabardine, poplin and velvet etc, Selection & calculation of fabric required for different apparel; gown, topper, shirt, T-shirt, pants, kurta, skirt, jackets etc.		
III	**Pattern-making & Layout preparation** Techniques of Pattern making; Drafting, flat pattern, draping, Dart manipulation; Pivot method and slash & spread method. Understanding the commercial paper pattern, Pattern envelop, Guide sheet, Layout types and preparation for different garments.	4	
IV	**Apparel designing Details; structural and applied designing** **Structural designing details;** machine stitches/seams – plain seam and it's finishing, french, lapped, run and fell, decorative seams- slot, piped. Disposal of fullness; darts, princess line, pleats, tucks, gathers, smoking, shirring, pockets; patch, inseam, welt, Plackets and fasteners, sleeves; plain, cap, flared, gathered, puffed, Necklines, Collar – baby, cape, Chinese, mandarian, stand, peter pan, sailor, shirt, Yokes- straight, round, V shape, U shape Understanding the use of facing, interfacing, interlining, underlining and lining **Applied designing details;** Hand Stitches- Running, basting, back, buttonhole, hemming, overcasting, picko Basic Embroidery stitches- blanket, buttonhole, chain, couching, french knot, fly, feather, herringbone, lazy daisy, running, stem, satin, sequence and mirror work, patchwork, application of Trimmings	7	
V	**Sewing &Fitting** Basic principles of sewing, Equipment's required for Measuring, marking, cutting, and stitching; Sewing machine- types, parts, care, handling and problems. Factors affecting good fit, problems and remedies.	7	

PRACTICAL		
I	Application of components & principles of apparel Designing, Application of Drafting, flat Pattern and Draping, Drafting of Child Bodice & sleeve Block and Adult Bodice & sleeve Block, Dart manipulation	10
II	Drafting of Blouse, Shirt, Kurta, Pant and Salwar, Importance of grain-line, Calculation of fabric, Understanding of Body measurements.	10
III	Development of samples- Basic stitching (learning machine stitch), seams; plain seam and it's finishing, french, lapped, run and fell, decorative seams- slot, piped, Disposal of fullness; darts, princess line, pleats, tucks, gathers, smoking, shirring, Pockets; patch, inseam, welt, Plackets and fasteners, Hand Stitches; Running, basting, back, buttonhole, hemming, overcasting, picko Basic Embroidery stitches; blanket, buttonhole, chain, couching, french knot, fly, feather, herringbone, lazy daisy, running, stem, satin, sequence and mirror work, patch work, application of Trimmings	20
IV	Drafting & Construction of Samples- Sleeves; plain, cap, flared, gathered, puffed, Necklines finishing with piping & facing, Collar; baby, cape, Chinese, mandarian, stand, peter pan, sailor, shirt, Yokes- straight, round, V shape, U shape	10
V	Project Development- Designing & construction of any one Complete article with structural and Applied designs Portfolio Development and Understanding of different measures to start up Apparel design and development related Business; procedures and guidance	10

Texts / References	1. Haynes Christine (2014). ***The Complete Photo Guide to Clothing Construction*. United States:** Quarry Books. 2. Mullick, P. (2002). *Garment Construction Skills.* New Delhi: Kalyani Publishers. 3. Kallal Mary J. (1985). ***Clothing Construction*. London:** Prentice Hall 4. Armstrong, H.J., (2009). *Pattern Making for Fashion Design*. New York: Harper Collins Publishers Inc. 5. Doongaji (1975). *Basic Process & Clothing Construction*, New Delhi, Raj Book Dep. 6. The Reader's Digest Association (2010). *Reader's Digest NewComplete Guide to Sewing*. New York: Trusted Media Brands.
Learning Outcomes	Upon completion of the course, students will be able to; • Understand and apply core elements of dress design for diverse body types. • Acquire proficiency in various pre-preparatory processes involved in fabric preparation for garment construction & get familiar with fabric grain & its importance. • Understand the procedure of taking accurate body measurements and selecting appropriate fabric for garments. • Create patterns for garments using different pattern-making techniques. • Utilize knowledge of body measurements for garment fitting. • Design and construct garments incorporating structural and applied techniques.

Course Title	**Basic Dress Designing Skill (HSCMV31 and HSCMV32)**
Category of Course[21]	Minor (VOC-1)

Credits[22]& Hours of Teaching

	Theory	Practical	Cumulative
Credits	02	02	04
Hours of Teaching (Total)	30	60	90

Course Objectives

- To make students learn fundamental techniques of dress design and its application
- To impart comprehensive understanding and enable students to learn structural design as well as applied design details in clothing construction
- To lead students through the step-by-step entire dress design process
- To make the students familiar with multiple pattern-making techniques
- To enhance students' creativity and skills in dress designing and sewing
- To impart skills for applying structural and applied designing techniques in clothing construction
- To promote hands-on experience with dress designing skills

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	**Introduction to Dress Designing** Components of dress design; silhouette, texture, colour, details, and their application in relation to different figures, Basic principles of dress designing, Sources of inspiration for designing; current fashion trends, Steps for dress designing; analyzing body measurements,	7

[21] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[22] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	designing/sketching of dress details, pattern making, layout preparation and marking, cutting, stitching, applied designing.	
II	**Body measurements &Fabric selection** Body measurements; types, procedures, and precautions while taking body measurements for different garments, Standard textile fabric terms; chiffon, georgette, cambric, denim, gabardine, poplin and velvet etc, Selection & calculation of fabric required for different dresses; gown, topper, shirt, T-shirt, pants, kurta, skirt, jackets etc.	5
III	**Pattern-making & Layout preparation** Techniques of Pattern making; Drafting, flat pattern, draping, Dart manipulation; Pivot method and slash & spread method. Understanding the commercial paper pattern, Pattern envelop, Guide sheet, Layout types and preparation for different garments.	4
IV	**Dress designing Details; structural and applied designing** **Structural designing details;** machine stitches/seams – plain seam and it's finishing, french, lapped, run and fell, decorative seams- slot, piped. Disposal of fullness; darts, princess line, pleats, tucks, gathers, smoking, shirring, pockets; patch, inseam, welt, Plackets and fasteners, sleeves; plain, cap, flared, gathered, puffed, Necklines, Collar – baby, cape, Chinese, mandarian, stand, peter pan, sailor, shirt, Yokes- straight, round, V shape, U shape Understanding the use of facing, interfacing, interlining, underlining and lining **Applied designing details;** Hand Stitches- Running, basting, back, buttonhole, hemming, overcasting, picko Basic Embroidery stitches- blanket, buttonhole, chain, couching, french knot, fly, feather, herringbone, lazy daisy, running, stem, satin, sequence and mirror work, patchwork, application of Trimmings	7
V	**Sewing &Fitting**	7

	Basic principles of sewing, Equipment's required for Measuring, marking, cutting, and stitching; Sewing machine- types, parts, care, handling and problems. Factors affecting good fit, problems and remedies.	
PRACTICAL		
I	Application of components & principles of dress Designing, Application of Drafting, flat Pattern and Draping, Drafting of Child Bodice & sleeve Block and Adult Bodice & sleeve Block, Dart manipulation	10
II	Drafting of Blouse, Shirt, Kurta, Pant and Salwar, Importance of grain-line, Calculation of fabric, Understanding of Body measurements.	10
III	Development of samples- Basic stitching (learning machine stitch), seams; plain seam and it's finishing, french, lapped, run and fell, decorative seams- slot, piped, Disposal of fullness; darts, princess line, pleats, tucks, gathers, smoking, shirring, Pockets; patch, inseam, welt, Plackets and fasteners, Hand Stitches; Running, basting, back, buttonhole, hemming, overcasting, picko Basic Embroidery stitches; blanket, buttonhole, chain, couching, French knot, fly, feather, herringbone, lazy daisy, running, stem, satin, sequence and mirror work, patch work, application of Trimmings	20
IV	Drafting & Construction of Samples- Sleeves; plain, cap, flared, gathered, puffed, Necklines finishing with piping & facing, Collar; baby, cape, Chinese, mandarin, stand, peter pan, sailor, shirt, Yokes- straight, round, V shape, U shape	10
V	Project Development- Designing & construction of any one Complete article with structural and Applied designs Portfolio Development and Understanding of different measures to start up a dressmaking business; procedures and guidance	10
Texts / References		

	1. Haynes Christine (2014). ***The Complete Photo Guide to Clothing Construction*. United States:** Quarry Books. 2. Mullick, P. (2002). *Garment Construction Skills.* New Delhi: Kalyani Publishers. 3. Kallal Mary J. (1985). ***Clothing Construction*. London:** Prentice Hall 4. Armstrong, H.J., (2009). *Pattern Making for Fashion Design*. New York: Harper Collins Publishers Inc. 5. Doongaji (1975). *Basic Process & Clothing Construction*, New Delhi, Raj Book Dep. 6. The Reader's Digest Association (2010). *Reader's Digest NewComplete Guide to Sewing*. New York: Trusted Media Brands
Learning Outcomes	Upon completion of the course, students will be able to; • Understand and apply core elements of dress design for diverse body types. • Acquire proficiency in various pre-preparatory processes involved in fabric preparation for garment construction & get familiar with fabric grain & its importance. • Understand the procedure of taking accurate body measurements and selecting appropriate fabric for garments. • Create patterns for garments using different pattern-making techniques. • Utilize knowledge of body measurements for garment fitting.

Course Title	**Introduction to Clothing & Textiles (HSCMD31)**
Category of Course[23]	**Multi Disciplinary**
Credits[24]& Hours of Teaching	

	Theory	Practical	Cumulative
Credits	03	-	03
Hours of Teaching (Total)	45	-	45

Course Objectives	• To familiarize the students with different properties of textile fibers, yarn and fabric • To impart knowledge on laundry process and garment care • To give detailed knowledge about understanding and usage of elements and principles for creating a good design in clothing

Course Content

Units	Course Content	Hr. of Teaching
I	**Textile Fundamentals** Importance of studying textiles, properties of textiles, natural and man-made fibers; properties and uses, Identification of textile fibers.	8
II	**Fiber spinning**; Mechanical and Chemical spinning method, Basic terminology related to production and manufacturing of yarn from different fibers, yarn definition, Blending	6
III	**Fabric Manufacturing Techniques**	8

[23] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[24] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	Understanding Weaving, Knitting, Braiding, Nets, & Laces; Definition & terminology: warp, weft, selvedge, grain, bias, Comparison between knits and woven; Weaving defects	
IV	**Clothing and Home-textile** Importance of Clothing; physiological, psychological and social aspect of clothing. Different types of clothes; business wear, sportswear, traditional wear, casual wear, party wear etc. Labelling to help consumer in intelligent selection and care, Precautions to be observed during purchase of clothing, Definition and intelligent buying & care of table linen, towels and bathroom ensemble, Buying guidelines for bed sheet, pillow slips, blanket. Selection of upholstery, carpet and cushion materials,	10
V	**Basics to Design** Elements and Principles of Design, Types of design (structural and decorative); **Laundry** Washing equipment's, washing principles and washing methods, Dry-cleaning, procedure of stain removal, Care of different fiber fabrics (Washing, Ironing, and Storage).	13

Texts / References	1. Murthy H.V. Sreenivasa (2016). *Introduction to Textile fibers*, Revised edition. New Delhi: Woodhead Publishing India Pvt. Ltd 2. Kadolph Sara j. (2015). Textiles (11th ed.) United states: Pearson Education Limited 3. Corbman, B.P. (1983). *Textiles: Fiber to Fabric* (6th ed.). New York: McGraw Hill Publication. 4. Dantyagi, S. (2006). *Fundamentals of Textiles and their Care* (5th ed.). Delhi: Orient Longman private ltd. 5. Deulkar, D. (1982). *Household textiles and Laundry Work.* Delhi: Atma ram and Sons. 6. सिंहवृन्दा. (2020). वस्त्रविज्ञानएवमपरिधान, पंचशीलप्रकाशन, जयपुर

Learning Outcomes	By the end of the course, students will be able to:- • Understand and identify the attributes of different textile fibers, Yarn, Fabric. • Understand nature and behavior of various textile materials. • Identify basic weaves and their variations. • Apply effective textile care, including laundering, stain removal and proper storage considering fabric types.

Course Title	**Offered by the University (HSCAE31)**
Category of Course[25]	AEC -3
Credits[26]& Hours of Teaching	

	Theory	Practical	Cumulative
Credits	02	NA	02
Hours of Teaching (Total)	30	NA	30

Course Objectives	NA

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	NA	
II	NA	
III	NA	
IV	NA	
V	NA	

Texts / References	NA
Learning Outcomes	NA

[25] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[26] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

Course Title	**Computer Application (HSCSE31 and HSCSE32)**
Category of Course[27]	Skill Enhancement Course

Credits[28] & Hours of Teaching

	Theory	Practical	Cumulative
Credits	01	02	03
Hours of Teaching (Total)	15	60	75

Course Objectives

- To learn about the basics of computer and its application
- To learn about the processing of data
- To acquire knowledge and understanding of various image file formats
- To enable the students to design brochures, certificates, cards, pamphlets etc.

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	Basics of computer: generations of computer, software and hardware, Input-output devices, operating system, computer memory, computer networks	06
II	Basic introduction, functioning and application of Microsoft Office and Paint, use of Artificial Intelligence in project management	03
III	Data Processing: Processing and Analysing data on Excel sheet	04
IV	Various image file formats; JPEG, PDF, TIFF, BMP, PNG, GIF etc.	02
PRACTICAL		

[27] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[28] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

Units	Course Content	Hr. of Teaching
I	• Creating document on word using different tools of page setting, paragraph editing and designing. • Creating professional slides for presentations using PowerPoint.	10
II	Processing and Analysing of data using excel sheet	20
III	Designing of brochures, certificates, cards, pamphlets etc. through computer-based designing	10
IV	Working on Google Workspace using its cloud-based tools for productivity and collaboration- • Communication tools: Gmail, Contacts, Calendar, Meet, and Chat • Storage: Drive • Content creation: Google Docs Editors, which includes Google Docs, Google Sheets, Google Slides, Google Drawings, and Google Forms	12
V	Designing for the World Wide Web: Developing for the Web, Text for the Web, Images for the Web, Sound for the Web, Animation for the Web, Video for the Web.	08

Texts / References	1. Sinha, P.K. & Sinha Priti (2004). *Computer Fundamentals.* Delhi: BPB Publications; 8th Edition 2. Penn, J (2020). *Data Analysis With Excel : Learn Step-By-Step How To Analyze Data With Excel, Formulas, Business Modeling And Grasp Spreadsheets To The Fullest.* Kindle eBook

	3. Nigam, M. (2019). *Data Analysis with Excel.* New Delhi*:* BPB Publications; First Edition 4. Kumar, B. (2017). *Mastering Ms Office: Computer Skill Development*. New Delhi: V&S Publishers
Learning Outcomes	Upon completion of the course, students will be able to; • Understand about the application and fundamentals of computer • Develop brochures, certificates, cards, pamphlets etc • Create an understanding of processing of data

BANARAS HINDU UNIVERSITY

(Detailed Syllabus of different Courses under NEP 2020)

Department of Home Science

Faculty of Science

Semester -IV

<table>
<tr><td>Course Title</td><td colspan="4">Fundamentals of Human Development (HSCMJ41 and HSCMJ42)</td></tr>
<tr><td>Category of Course[29]</td><td colspan="4">Major</td></tr>
<tr><td>Credits[30]& Hours of Teaching</td><td colspan="4"><table>
<tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr>
<tr><td>Credits</td><td>03</td><td>02</td><td>05</td></tr>
<tr><td>Hours of Teaching (Total)</td><td>45</td><td>60</td><td>105</td></tr>
</table></td></tr>
<tr><td>Course Objectives</td><td colspan="4">• To make the students familiar with different methods studying human development
• To provide knowledge of theories given by different psychologists
• To gain practical experiences in the field of human development.</td></tr>
<tr><td colspan="5">Course Content</td></tr>
<tr><td colspan="5"><table>
<tr><th>Units</th><th>Course Content</th><th>Hr. of Teaching</th></tr>
<tr><td>I</td><td>Methods of studying human development; case study, interview, naturalistic observation and laboratory observation, experimental method,</td><td>05</td></tr>
</table></td></tr>
</table>

[29] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[30] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	data collection methods: cross sectional and longitudinal and sequential studies, Ethics in research on human being	
II	Introduction to theories of human development; Piaget's theory of cognitive development, Psychosexual theory of Sigmund Freud (Defense Mechanism, stages of psychosexual development; id, ego, super-ego). Psychosocial theory of Erik-Erikson. Traditional learning theories; Pavlov, Watson, and Skinner. Social learning theory (Bandura). Kohlberg's theory of Moral Development. Theories of language Acquisition. Maslow's self - actualization theory. Theory of Attachment; Bowlby.	10
III	Early Childhood Education and Management; Meaning, Objectives, Importance of ECCE. Philosophy of Early Childhood Education (Pre-basic Education of Gandhiji, Maria Montessori, Gijubhaibadheka, Frobel). ECCE center; Infrastructure and building, Staff, Equipments, record keeping, parent teacher meeting. Importance of Science, nature, music, role plays and stories in ECCE programs.	10
IV	Child Guidance and Counseling; Guidance; meaning and definition, principles of guidance, need of guidance, types of guidance; Educational guidance, Vocational guidance, Personal guidance. Counseling; Meaning and Definition, principles of counseling, Elements of counseling, need for counseling, aims and objectives of counseling, role of counselor, counseling process, and types of counseling, pre-marital and marital counseling	15
V	Meaning and Objectives of Nari Niketan, Creche, Old age Home, Day Care Centre	5
PRACTICAL		
I	Visit to any one pre-school centre situated in Varanasi city.	04
II	Study of all development patterns in different age groups • Infancy • Babyhood • Pre-school child • School going child	28

	• Child in puberty	
III	Study of all development patterns in different age groups • Adolescent • Adult • Old age person	20
IV	Visit to Old Age Home	04
V	Visit to Creche	04

Texts / References	1.Tami J. Moore, Sylvia M. Asay; Family Resource Management; SAGE publications, Inc;third edition (2017). 2. Maike Andresen Christian Nowak ; Human Resource Management Practices, Springer International Publishing AG. India 3. Imam Nadaf; Diploma in family management: your family members are the potential energy of your life; Notion Press; 1st edition (2017), India . 4.BelaBhargava; Family Resource Management & Interior Decoration, university book house pvt. Ltd, First Reprint edition (2018), India 5.PremavathySeetharaman Sonia Vatra, Preeti Mehra; An introduction to family resource management; CBS publisher, (2019) India , 6.Dr.Brinda Singh; Home Management & Interior Decoration; panchsheel prakashan , seventeenth edition (2023), India 7.PremlataMullick, Text Book of Home Science; Kalyani publishers (2012) India.
Learning Outcomes	Upon completion of the course students will be able to : ▪ Use different methods of data collection and have knowledge about research ethics. ▪ To facilitate the students to understand the theories of human developments. ▪ To learn about the objectives of Early Childhood Care & Education.

Course Title	**Rural Development and Outreach Programme (HSCMJ43 and HSCMJ44)**
Category of Course[31]	Major

Credits[32]& Hours of Teaching

	Theory	Practical	Cumulative
Credits	03	02	05
Hours of Teaching (Total)	45	60	105

Course Objectives

- Students gain hands-on experience in developing and implementing rural development projects.
- It opens up job prospects in government, NGOs, and international development organizations focused on rural areas.
- Students learn how to make a positive difference in the lives of rural communities.
- The course teaches students about sustainable practices that can be applied to real-world challenges in rural settings.
- To identify various organization working in the rural areas,
- To know about the different programmes running by Govt. for the rural people

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	**Rural development** Definition; Issues and concepts; Historical perspective of community development in India and emerged changes since inception to current era.	05
II	**Approaches to rural development** Concept and characteristic features Gandhian approach, community development approach, target approach, area approach, minimum need	07

[31] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[32] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	approach, integrated or holistic approach, participatory development approach.	
III	**Key principles of Rural development** Community participation - definition and scope; Inclusion; Equality; Collective action; Empowerment and community development process.	08
IV	**Rural development and governance in India** Rural development policy in India; rural development perspectives in five-year plans.	10
V	**Cross cutting edges of rural development** Horizontal edges - education, health, women empowerment, skill development, agriculture and caste occupations; **Outreach of rural development** General orientation to outreach models - precede model, evaluation and indicator metrics; Outreach of urban; Rural and tribal community development programmes; Impact - economic and social perspectives	15
PRACTICAL		
I	Identify the various organizations working in the rural areas for community empowerment. Selection of rural development programme and detailed description of the programme in terms of objectives, targets, inputs, expected outputs and outcome	20
II	Visit to programme operating area and interaction with stakeholders implementing agency, personnel and beneficiaries. Identify the project evaluation criteria and submit the report of the programme in terms of objectives, targets, inputs, expected outputs and outcome	20
III	Visit of Rural/ Community organizations (any Four) and submit report- • PHC • NGO • Panchayat • Anganwadi	20

	• Women Organisation's School • Cooperative Society	
Texts / References	1. Jerry WR and Gary P. 2014. *Introduction to Community Development*: *Theory, Practice, andService-Learning.* 1st Edition, *ISBN*-13: 978-1412974622 ISBN-10: 1412974623 2. Manohar P. 2014. S*ocial and Community Development Practice* http://dx.doi.org/10.4135/ 3. Marianne R, Woodside and Tricia McClam. 2015. *An Introduction to Human Services.* 8th Edition, ISBN-13: 978-1285749907 ISBN-10: 1285749901 4. Patil AR. 2013. *Community Organization and Development*: *An Indian Perspective.* PHI 5. Learning Private Limited, Delhi 110092ISBN 978-81-203-4694-9 6. Rhonda P and Robert P. 2015. *An Introduction to Community Development* (*Volume 1*) 2nd Edition, ISBN-13: 978-0415703550 ISBN-10: 0415703557 7. *A Step by Step Guide to 'Turning Outward' in Your Community.* American LibraryAssociation. http://www.ala.org/tools/sites/ala.org.tools/files 8. From Project to Branch Integration and Sustainability: Community-Led Work.	
Learning Outcomes	After successful completion of the curse the students will be able to: • Comprehend and differentiate OD processes and HRD strategies • Critically analyze different approach of rural development • Plan and execute special project • Analyze the results and write report. • Participants will gain a thorough understanding of rural development concepts and practices.	

Course Title	**Public Nutrition and Health (HSCMJ45 and HSCMJ46)**
Category of Course	Major

Credits & Hours of Teaching

	Theory	Practical	Cumulative
Credits	02	02	04
Hours of Teaching (Total)	30	60	90

Course Objectives

- To explore the concepts of food, nutrition and health in order to promote optimal well-being across the life span
- To conduct the thorough nutritional assessment of vulnerable groups in order to identify their unique dietary needs and develop strategies to support their health and health of their infants
- To provide fundamental concept of the role diet therapy to treat different disease conditions
- To equip individuals with essential knowledge and skills in safety education to effectively promote health and respond to emergencies in various settings

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	Concept of Food, Nutrition and Health, Nutritional Assessment of Childhood, Adolescence, Elderly and Old age	10
II	Nutritional Assessment of Vulnerable Groups (pregnant and lactating women)	05
III	Public Health and Diseases: Non communicable diseases, food borne diseases and water borne diseases, reemerging diseases (TB, Malaria etc.), Vector borne diseases (dengue, chikungunya)	10
IV	Safety Education in Health promotion: First aid and emergency care	05

Practical		
I	Assessment of Nutritional status of Childhood, Adolescence, Elderly and Old age	25
II	Visit to local health center to assess the health status of individuals	25
III	Planning and preparation of nutritional recipes for pregnant and lactating women	10

Texts / References	1. Shrilaxmi, B. (2016). Dietetics. New Age International. 2. Khanna K., Gupta S., Passi S.J, Seth R., Mahana R., &Puri S. (2020). Textbook of Nutrition and Dietetics. Elite Publishing House. 3. Swaminathan M. (2015). Advanced Text – Book on Food & Nutrition Volume-2. The Bangalore Printing & Publishing Co., LTD. 4. Joshi S.A. Nutrition and Dietetics, Tata McGraw Hill Publications, New Delhi. 5. Antia F.P., & Philip A. Clinical Nutrition and Dietetics, Oxford Publishing Company.
Learning Outcomes	After the end of the course, students will able to learn • About concept of health and nutritional assessment • About trends of communicable diseases • Planning and preparation of new recipes for vulnerable groups

<table>
<tr><td>Course Title</td><td colspan="2">Public Nutrition and Health (HSCMN41 andHSCMN42)</td></tr>
<tr><td>Category of Course[33]</td><td colspan="2">Minor</td></tr>
<tr><td>Credits[34]& Hours of Teaching</td><td colspan="2"><table>
<tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr>
<tr><td>Credits</td><td>02</td><td>02</td><td>04</td></tr>
<tr><td>Hours of Teaching (Total)</td><td>30</td><td>60</td><td>90</td></tr>
</table></td></tr>
<tr><td>Course Objectives</td><td colspan="2">
To explore the concepts of food, nutrition and health in order to promote optimal well-being across the life span
To conduct the thorough nutritional assessment of vulnerable groups in order to identify their unique dietary needs and develop strategies to support their health and health of their infants
To provide fundamental concept of the role diet therapy to treat different disease conditions
To equip individuals with essential knowledge and skills in safety education to effectively promote health and respond to emergencies in various settings
</td></tr>
<tr><td colspan="3">Course Content</td></tr>
<tr><td colspan="3"><table>
<tr><th>Units</th><th>Course Content</th><th>Hr. of Teaching</th></tr>
<tr><td>I</td><td>Concept of Food, Nutrition and Health, Nutritional Assessment of Childhood, Adolescence, Elderly and Old age</td><td>10</td></tr>
<tr><td>II</td><td>Nutritional Assessment of Vulnerable Groups (pregnant and lactating women)</td><td>05</td></tr>
<tr><td>III</td><td>Public Health and Diseases: Non communicable diseases, food borne diseases and water borne diseases, reemerging diseases (TB, Malaria etc.), Vector borne diseases (dengue, chikungunya)</td><td>10</td></tr>
</table></td></tr>
</table>

[33] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[34] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

IV	Safety Education in Health promotion: First aid and emergency care	05
Practical		
I	Assessment of Nutritional status of Childhood, Adolescence, Elderly and Old age	25
II	Visit to local health center to assess the health status of individuals	25
III	Planning and preparation of nutritional recipes for pregnant and lactating women	10

Texts / References	1. Shrilaxmi, B. (2016). Dietetics. New Age International. 2. Khanna K., Gupta S., Passi S.J, Seth R., Mahana R., &Puri S. (2020). Textbook of Nutrition and Dietetics. Elite Publishing House. 3. Swaminathan M. (2015). Advanced Text – Book on Food & Nutrition Volume-2. The Bangalore Printing & Publishing Co., LTD. 4. Joshi S.A. Nutrition and Dietetics, Tata McGraw Hill Publications, New Delhi. 5. Antia F.P., & Philip A. Clinical Nutrition and Dietetics, Oxford Publishing Company.
Learning Outcomes	After the end of the course, students will able to learn • About concept of health and nutritional assessment • About trends of communicable diseases • Planning and preparation of new recipes for vulnerable groups

<table>
<tr><td>Course Title</td><td colspan="4">Offered by the University (HSCAE41)</td></tr>
<tr><td>Category of Course[35]</td><td colspan="4">AEC -4</td></tr>
<tr><td>Credits[36]& Hour of Teaching</td><td colspan="4"><table>
<tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr>
<tr><td>Credits</td><td>02</td><td>NA</td><td>02</td></tr>
<tr><td>Hour of Teaching (Total)</td><td>30</td><td>NA</td><td>30</td></tr>
</table></td></tr>
<tr><td>Course Objectives</td><td colspan="4">NA</td></tr>
<tr><td colspan="5">Course Content<table>
<tr><th>Units</th><th>Course Content</th><th>Hr. of Teaching</th></tr>
<tr><td>I</td><td>NA</td><td></td></tr>
<tr><td>II</td><td>NA</td><td></td></tr>
<tr><td>III</td><td>NA</td><td></td></tr>
<tr><td>IV</td><td>NA</td><td></td></tr>
<tr><td>V</td><td>NA</td><td></td></tr>
</table></td></tr>
<tr><td>Texts / References</td><td colspan="4">NA</td></tr>
<tr><td>Learning Outcomes (not more than 100 words)</td><td colspan="4">NA</td></tr>
</table>

[35] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[36] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

BANARAS HINDU UNIVERSITY

(Detailed Syllabus of different Courses under NEP 2020)

Department of Home Science

Faculty of Science

Semester -5

<table>
<tr><td>Course Title</td><td>Textiles; Care and Selection (HSCMJ51 and HSCMJ52)</td></tr>
<tr><td>Category of Course[37]</td><td>Major</td></tr>
<tr><td>Credits[38]& Hours of Teaching</td><td>
<table>
<tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr>
<tr><td>Credits</td><td>3</td><td>2</td><td>5</td></tr>
<tr><td>Hours of Teaching (Total)</td><td>45</td><td>60</td><td>105</td></tr>
</table>
</td></tr>
<tr><td>Course Objectives</td><td>

To make the students familiar with uses of different textiles
To facilitate the students to understand and analyze the type of fabric
To educate the students about different techniques of textile printing & finishing
To guide students about purchasing and taking care of different types of textiles article
To impart skills related to identification of different textile components
To enhance students’ proficiency and creativity in motif arrangement and weaving process of fabric.

</td></tr>
</table>

[37] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[38] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

Course Content

Units	Course Content	Hr. of Teaching
I	Importance of studying textiles, properties of textiles, natural and man-made fibers; properties and uses, Fiber spinning; Mechanical and Chemical spinning method, Basic terminology related to production and manufacturing of yarn from different fibers, Blending. Minor fibers; properties and uses, New generation textile fibres; origin, components, characteristics and uses, Eco-friendly fibers; definition and concept.	15
II	Fabric Construction; weaving, basic loom, parts and operations, types of basic weaves and other fabric construction methods; knitting, felting and non-woven, knotting, crocheting, braiding.	6
III	Fabric finishes: Processes of removing impurities from fabric; scouring, degumming, bleaching, carbonizing. Basic finishes that alter texture; felting, singeing, stiffening, decatizing, delustering, calendering, beetling, napping, flocking, burnt out design, tentering, shearing and brushing. Functional finishes - water proofing, water repellent, shrinkage control, flame retardation, mildew proof, moth proof, anti-bacterial, anti-static.	5
IV	Dyeing & printing- Classification of dyes; Natural and synthetic dyes; Direct dye, acid dye, basic dye, vat dye, sulphur dye, azoic dye, mordant dye, disperse dye, reactive dye, pigment dye. Techniques of dyeing; Solution dyeing, fibre and yarn dyeing, piece dyeing, cross dyeing, union dyeing. Printing: Different styles of Printing, Hand printing methods; block printing, stencil, screen printing, spray printing, tie & dye, batik, warp printing. Machine printing; roller, screen printing, heat transfer printing, flock printing, Textile dyeing and printing auxiliaries used for different textile processing	8

V	Laundry Agents- water, soap, detergent, Blueing& stiffening agents and stain removers, Washing equipment's, washing principles and washing methods, Dry-cleaning, procedure of stain removal, Care of different fiber fabrics (Washing, Ironing, Storage): cotton, wool, silk and man-made. Labelling to help consumer in intelligent selection and care, Precautions to be observed during purchase of textile, Definition and intelligent buying & care of table linen, towels and bathroom ensemble, Buying guidelines for bed sheet, pillow slips, blanket. Selection of upholstery, carpet and cushion materials.	11
PRACTICAL		
I	Identification of Textile Fiber Identification of Yarns Identification of Fabrics Study of Loom; Parts & operation, Preparation of basic weaves; graph & ribbon interlacement, Warp and weft yarn counting in fabric. Development of samples of weaving, knitting, crocheting, knotting	22
II	Dyeing of cotton with natural & synthetic dyes. Preparation of sample by Tie & Dye Techniques, Batik, Block printing, Stencil printing, screen printing & spray Printing.	16
III	Process of Designing, Textile motifs, Motif development; geometric, simplified, stylized, naturalized, abstract and ornamental, Textile motif; repeat and patterns, different arrangement/placements	4
IV	Group discussion of care (Laundering, ironing, storage) of different fabric articles, practicing laundering, Bleaching, blueing, starching and Stain removal, Identification & Collection of different label, understanding of care label; symbols and instructions	13
V	Project development; Make any one article of Weaving/Knitting/Crocheting/ Knotting/Tie & Dye/Printing.	5

Texts / References	1. Murthy H.V. Sreenivasa (2016). *Introduction to Textile fibers*, Revised edition. New Delhi: Woodhead Publishing India Pvt. Ltd

	2. Kadolph Sara j. (2015). Textiles (11th ed.) United states: Pearson Education Limited 3. Corbman, B.P. (1983). *Textiles: Fiber to Fabric* (6th ed.). New York: McGraw Hill Publication. 4. Dantyagi, S. (2006). *Fundamentals of Textiles and their Care* (5th ed.). Delhi: Orient Longman private ltd. 5. Deulkar, D. (1982). *Household textiles and Laundry Work.* Delhi: Atma ram and Sons. 6. Gohl, E. P. G. & Vilensky, L. D. (1981). *Textiles-for modern living*. Melbourne: Longman Cheshire. 7. Joseph, M. L. (1986). *Introductory Textile Science*. New York: Holt, Rinehart and Winston.
Learning Outcomes	Upon completion of the course students will be able to; • Select and evaluate textile material critically for the specific end use. • Acquire knowledge for various types of materials, reagents, equipment's and processes involved in care of textiles. • Purchase and utilize textile articles intelligently and more effectively. • Identify, Select and evaluate textile material critically for the specific end use. • Use various types of materials, reagents, equipment's and processes involved in care of textiles.

Course Title	**NGO Management and Advocacy (HSCMJ53 and HSCMJ54)**
Category of Course[39]	Major

Credits[40]& Hours of Teaching

	Theory	Practical	Cumulative
Credits	2	2	4
Hours of Teaching (Total)	30	60	90

Course Objectives

- To develop key management competencies and analytical in the management of NGOs
- To develop understanding about the legal framework of NGOs and various issues/risk associated with NGOs.
- To develop basic understanding regarding the structure and functioning of NGOs with effective strategies for networking and fundraising
- To inculcate understanding of communication campaigning and advocacy with the importance of effective campaigning in achieving objectives and changing public policy through mediums like media, legislation, marketing, and advertising.

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	Introduction to Non-governmental Organizations • Meaning of NGO and GO and private sector • Difference between Government Organizations and NGO • Relationship between NGO, GO and private sector • Characteristics of good NGO • Structure of NGO • Functions of NGO • Classification of NGOs	10

[39] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[40] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	• Historical evolution of NGOs • Growth and status of NGOs in India • Contribution and Role of NGOs in development • Mapping Voluntarism in the Third sectors • 1Challenges faced by NGOs.	
II	Management of Non-governmental Organizations • Organizational types and structures • Registration of NGO • Legal Procedures for establishment of NGOs • Overview of Societies Registrations Act, India's Companies Act, Charitable Endowment Act and FCRA, Memorandum of Association and Bye-Laws • Tax Relief Under Section 80G • Management of NGOs • NGO management competencies • Human Resource Management- Human Resource Policy, Staffing and Salaries • Selection and training of Personnel • Managing people and teams in NGOs • Communication and Networking in NGOs • Planning, Implementation and Evaluation strategy under NGO • Fundraising • Resource mobilization	8
III	Introduction to Advocacy • Concept and relevance of Advocacy • Types or approaches of Advocacy • Steps in planning an Advocacy Campaigns • Tools and Techniques of Advocacy • Elements of an advocacy strategy • Advocacy Planning Cycle - planning advocacy campaigns for different stakeholders	12

	• Case studies of advocacy campaigns • Community Advocacy • Media Advocacy • Relationship between advocacy, programme communication and social mobilization	
PRACTICAL		
I	Visit to non-government organizations Profiling of NGOs	18
II	Evaluation of promotional/IEC materials developed by NGOs Case studies and Evaluation of Advocacy Initiatives/ Campaigns	22
III	Planning an advocacy campaign	20

Texts / References	
	1. R. Kumar, S. L. Goel. (2005). Administration and Management of NGOs: Text and Case Studies Paperback. Deep & Deep Publications, India. ISBN 8176296015. 2. S. Chandra (2003). Guidelines for NGO Management in India. Kanishka Distributors, New Delhi. ISBN 978-8173916038. D. Lewis (2001). Management of Non-Governmental Development Organization. Second Edition, Routledge, New York. ISBN 9780203002162. 3. Subedi, N R, (2008). Advocacy Strategies and Approaches: A Training of Trainers Manual. International Centre for Integrated Mountain Development (ICIMOD). ISBN : 9291150830 4. Abraham, A. (2003). Formation and Management of NGOs. Third Edition, Universal Law Publishing Co. Pvt Ltd., New Delhi. ISBN 9350350122. Suggested Readings: 5. Sundar, P. (2013). Business and Community: The Story of Corporate Social Responsibility in India. New Delhi, Sage Publication. ISBN 978-81-321-0955-6. 6. Agarwal, S.K. (2008). Corporate Social Responsibility in India, Sage

	publication Pvt. Ltd. https://doi.org/10.4135/9788132100027. 7. Lewis. D. (2014). Non-governmental Organizations: Management and Development. 3rd Edition. Routledge. ISBN 9781138294097. Til, J.V. (1988). Mapping the Third Sector: Voluntarism in a Changing Social Economy. Foundation Centre, New York. ISBN 0879542403.
Learning Outcomes	• Gain an understanding of the unique nature of the non-government sector and distinguish it from the government (public) and business (for-profit) sectors. • the historical, theoretical, and legal perspectives on non-government organizations, as well as current trends and issues of consequence to non-government organizations. • Develop an understanding of management techniques and leadership skills for enhancing the effectiveness of non-government organizations. • Be able to design and assess the effectiveness of governance models, volunteer programs, organizational capacity, and inter-organizational relationships. • Develop an understanding of advocacy skills and knowledge and also key stages involved in developing an advocacy strategy.

Course Title	**Human Nutrition (HSCMJ55 and HSCMJ56)**
Category of Course[41]	Major

Credits[42]& Hours of Teaching

	Theory	Practical	Cumulative
Credits	3	2	**05**
Hours of Teaching (Total)	45	60	**105**

Course Objectives

- To gain knowledge about composition of human body and nutrition
- To understand the chemistry of macro & micro nutrients

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	• Concept and scope of Nutrition, Brief history of Nutritional Science. Relation of nutrition to health, optimum nutrition, adequate nutrition, malnutrition. • Food Guide-Basic five food groups (How to use according to RDA) • Composition of human body, structure and functions of digestive organs, excretion of waste products, study of urine, sweat and faces, blood body fluids and hormones.	15

[41] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[42] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

II	• Utilization of Food in the body: - Digestion, absorption transport & utilization of Macro and micro nutrients. • Role of fibers in human nutrition. • Carbohydrates: Functions, classification, food sources, storage in body. • Fats & oils: composition, saturated and unsaturated fatty acids, classification, food sources, function of fats. • Proteins - composition, sources, essential & non-essential amino acids, functions, Protein deficiency. • Water - as a nutrient, function, sources, requirement, water balance & effect of deficiency. • Minerals - macro & micronutrients. - functions, sources. Bioavailability and deficiency of Calcium, Iron, Iodine, Sodium & Potassium (in very brief) 12. Vitamins (water & fat soluble) - definition, classification & functions	15
III	• Effect of cooking & heat processing on the nutritive value of foods. • Processed supplementary foods. • Food sanitation in hygiene	15

PRACTICAL		
I	• Preparation of dishes rich in Energy, protein, fat, fiber, calcium, iron, vitamin A, vitamin C, thiamine, riboflavin and niacin.	20
II	• Reactions of different types of fats (saponification and iodine value). • Reactions of proteins.	20
III	• Reaction of mono, Di and polysaccharides and their identification in unknown mixtures, Iodine test for cooked and uncooked starch & dextrin.	20

Texts / References	1. Srilakshmi, B - Nutrition Science, New Age International Publishers,

	seventh edition 2. Swaminathan, M. (1997), Essentials of Food and Nutrition, vol I &II, Second edition, Bangalore, BAPPCO 3. Singh, B. AaharVigyan Evam Poshan, Hindi Edition, Panchsheel Prakashan, 4. Sundararaj P and Siddhu A. (1995). Quantitative tests and Quantitative procedures in Biochemistry - A practical manual, Wheeler Publishing. 5. Lehinger A.K., Nelson D.L. and Cox M.M. (1993), 2nd Ed. Principles of Biochemistry, CBS Publishers and Distributors. 6. Guyton A.C., Hall J.E. (1996): Textbook of Medical Physiology, 9th Ed. Prism Books (Pvt.) Ltd., Bangalore.
Learning Outcomes	• Upon the completion of the course students will able to understand the relation between nutrition and human body, Role of macro and micro nutrients in the human body. • Learning of nutrient rich dishes preparation, identification of the major nutrients in the foods

Course Title	**Bakery and Confectionery (HSCMV51 and HSCMV52)**
Category of Course[43]	Minor (Vocational)
Credits[44]& Hours of Teaching	

	Theory	Practical	Cumulative
Credits	2	2	4
Hours of Teaching (Total)	30	60	90

Course Objectives	To develop foundational knowledge of baking industry To inculcate knowledge of baking and confectionery and depth inputs about ingredients requiring for baking To prepare several baked products

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	**Introduction to Bakery and confectionery:** Introduction and scope of bakery, Bakery terms and organization chart for bakery.	5
II	• **Wheat and Flour:** Different types of flour, Constituents of flour, pH value of flour, water absorption power of flour, Gluten, diastatic capacity of flour, grade of flour, Temperature and weight conversions. • **Bread making:** Raw materials required for bread making (flour, Yeast, water, sugar, salt, milk etc.), bread improvers, methods of bread making, characteristics of good bread. Bread faults and their remedies.	10
III	• **Basic Sponges and Cakes**: Pastry technique and principles. Principles behind making of sponge. Baking and cooling of	5

[43] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[44] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	sponges. Basic sponges and their uses. Equipment used in sponges and cakes making • **Role of Yeast in Bakery industry:** Basics of knowledge of baker's yeast and its role in fermentation of dough and condition influenced its working, effects of over and under fermentation.	
IV	**Cookies and Biscuits:** preparation of various types of cookies and biscuits, factors affecting the quality of biscuits or cookies, storage of confectioneries.	5
V	**Bakery Layout:** Approval required to set up a bakery unit, Government bye – laws, selection of sites, equipment, Layout design, electricity, quality control of the products.	5
PRACTICAL		
I	Introduction to basic equipment required for bakery	20
II	Different types of cake and cookies preparation	20
III	Preparation of bread.	20

Texts / References	1. Textbook of Bakery and Confectionery (2023), Yogambal Sivalingam, 3rd Edition, PHI Learning Pvt. Ltd. ISBN- 978-9391818890 2. Textbook of Bakery and Confectionery, Gupta, Amit Kumar, Generic Publishers, ISBN- 978-B08X77TZHX 3. Foods Facts and Principles, N Shakuntala Manay& M. Shadakharaswamy, 5th Edition, New Age International Publishers, ISBN-978-9395161091
Learning Outcomes	Upon completion of the course, the students will able to learn about the Preparation of baked product Gain understanding of several ingredients needed for preparation

<table>
<tr><td>Course Title</td><td colspan="2">Internship (HSCIN51)</td></tr>
<tr><td>Category of Course[45]</td><td colspan="2">Internship</td></tr>
<tr><td>Credits[46]& Hours of Teaching</td><td colspan="2"><table>
<tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr>
<tr><td>Credits</td><td>-</td><td>02</td><td>02</td></tr>
<tr><td>Hours of Teaching (Total)</td><td>-</td><td>60</td><td>60</td></tr>
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<tr><td>Course Objectives</td><td colspan="2">NA</td></tr>
<tr><td colspan="3">Course Content
<table>
<tr><th>Units</th><th>Course Content</th><th>Hr. of Teaching</th></tr>
<tr><td>I</td><td>NA</td><td></td></tr>
<tr><td>II</td><td>NA</td><td></td></tr>
<tr><td>III</td><td>NA</td><td></td></tr>
<tr><td>IV</td><td>NA</td><td></td></tr>
<tr><td>V</td><td>NA</td><td></td></tr>
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<tr><td>Texts / References</td><td colspan="2">NA</td></tr>
<tr><td>Learning Outcomes</td><td colspan="2">NA</td></tr>
</table>

[45] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[46] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

BANARAS HINDU UNIVERSITY

(Detailed Syllabus of different Courses under NEP 2020)

Department of Home Science

Faculty of Science

Semester -6

<table>
<tr><td>Course Title</td><td colspan="4">Advanced Human Development (HSCMJ61 and HSCMJ62)</td></tr>
<tr><td>Category of Course[47]</td><td colspan="4">Major</td></tr>
<tr><td>Credits[48]& Hours of Teaching</td><td colspan="4"><table><tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr><tr><td>Credits</td><td>03</td><td>01</td><td>04</td></tr><tr><td>Hours of Teaching (Total)</td><td>45</td><td>30</td><td>75</td></tr></table></td></tr>
<tr><td>Course Objectives</td><td colspan="4">• To provide knowledge regarding the concept of family life education.
• To educate the students about different types of disability
• To gain practical experiences in various institutions of special needs.
• To study about marital adjustment in different time span of marriage</td></tr>
<tr><td colspan="5">Course Content</td></tr>
<tr><td colspan="5"><table><tr><th>Units</th><th>Course Content</th><th>Hr. of Teaching</th></tr><tr><td>I</td><td>Family life education: meaning, need, importance and objectives of family life education. IVF and AI pregnancy and its management.</td><td>06</td></tr><tr><td>II</td><td>Parent education: meaning, need, importance and objectives of parent education.</td><td>04</td></tr><tr><td>III</td><td>Child with special needs: concept of children with special needs, definition, types of exceptional children, history of studying disability in India. Classification of different types of disabilities; Visual Impairment,</td><td>20</td></tr></table></td></tr>
</table>

[47] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[48] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	Hearing Impairment, Mental Retardation, Physical Disability, Learning Disability	
IV	Holistic Approach of Rehabilitation, empowerment of person with disabilities, role of guardian, teacher and society	08
V	Brief introduction of CARA (Central Adoption Resource Authority), PNDT (Pre-natal Diagnostic Technique) Act, POCSO (the protection of children from sexual offences Act).	07
PRACTICAL		
I	Visit to various institutions related to special need children. • Blind school • Integrated children care centre • Deaf and Dumb school	10
II	Study of relationship in different types of families. • Nuclear family • Joint family • Working women	10
III	Presentation by student on any one topic	10

Texts / References	1.Park K. ;Parks Textbook of Preventive and Social Medicine (English,Hardcover),Banarsidas Bhanot Publishers 27 th edition(2023). 2. Dr. R.A. Joseph; Aspects of Rehabilitation; samakalan publishers, Varanasi(2014), India. 3. K.C. Panda ;Education of Exceptional Children; Vikas Publication House Pvt Ltd, India. 4. Aprajita Chowdhary, David K. Carson & Carson; Family Life Education in India:perspectives, challenges, and applications, Rawat publication. India 5. Deepa Chaudhury ; Parenting tips for Indian parents : pre –conception to adulthood, nationpress publication, India (2017).
Learning Outcomes	After completion of the course students will be able to: ▪ Understand the concept and importance of parent education and family life education. ▪ Learn about the needs of different disabled children.

Course Title	**Family Finance Management and Consumer Education (HSCMJ63 andHSCMJ64)**
Category of Course[49]	Major

Credits[50] & Hours of Teaching

	Theory	Practical	Cumulative
Credits	03	02	05
Hours of Teaching (Total)	45	60	105

Course Objectives

- To provide comprehensive study of the concept of the family finance management and it's importance.
- To impart knowledge of family income, expenditure and budgeting for prudent financial management.
- To be familiarized with rights and responsibilities of consumer, changing trends in consumerism, issues faced by consumers and tools of communication with consumers for educating them.

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	**Family finance** - • Family finance Management: Meaning, purpose and importance of family finance management. • Process of financial management: Planning, controlling and evaluation. • Income: Concept of income, types of income, sources of family income.	15

[49] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[50] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	• Expenditure: Meaning of family expenditure, different items of expenditure, factors affecting family expenditure. • Budgeting: Objective and importance of family budget, types of budgets. • Investment: Meaning, time value of money, principals of investment, types of investment - bank and post office deposits, shares bonds and mutual funds. • Insurance: Meaning, importance and types of insurance. • Planning for future : • Financial goals: Paying of debts, buying home, building emergency funds and saving for retirement.	
II	. Consumer Education: Consumer education: Meaning, importance, and scope of consumer education. Consumer rights: Right to safety, right to choose, right to be informed, right to be consumer education, right to be heard, right to seek redressal , consumer protection act and other legislations for consumer and product safety. Consumer responsibilities: Ask yourself, be critically aware, be organized, practice sustainable consumption, be responsible to environment. Consumer issues and challenges: Changing trends in consumerism, consumer finance, multiple tax structure, gender issues in consumerism, marketing and gender consumerism, green consumerism - definition objectives and necessity of green consumerism. Communication tools for consumer education : Consumer communication - importance and types, communication media and social change, media and consumer demand, advertising as a mode of communication, trends and impart of advertising on consumer.	15
III	Online marketing: Evolution, growth and challenges, legislative framework.	15

PRACTICAL		
I	Study of effects of different factors on consumption pattern of household.	10
II	Project work: Analysis of expenditure pattern of different income groups in urban and rural areas.	30
III	Analysis of impact of advertising and social media on consumption trends. Study of measures taken by government for promoting green consumption for environmental safety in urban areas	20

Texts / References

1. Consumer Economics - The Consumer In Our Society, Mel J. Zelenak, Holcomb Hathway, Publisher 14 Edition - 2005
2. Home Management and Family Finance-Veena Gandotra, Publishers and Distribution Dominant- -1993
3. The Family Financial Bank, Victory M.Caron - 2017
4. Basic Financial Management: Dr. R P. Rustogi, Publishers Sultan Chand and Sons -2017
5. K.K. Dewett and J.D. Varma JD.2017 Elementary Economic Theory. S. Chand & Company Ltd. New Delhi
6. Consumer Economic: Issues and Behavior, 4th Edition and Elizabeth B. Goldsmith
7. Consumer Economic. Dr. Manju Patni Star publication, Agra - 2020
8. Consumer Economic (Hindi) Dr Naresh Chandra Tripathi, Garima Tripathi,Publishers: Shri Vinod Pustak Mandir, 2020
9. Consumer Education & Economic Mcgraw Hill, 2008
10. Economic Issues for Consumer , Miller Roger LeRoy, Publisher - West Publishing Co - 1975
11. Consumer Economics, Wyllie, Eugene D , Publisher - Thomson South - Western -1987
12. Sparks C. 2008, Globalization , Development and Mass Media, Sage Publications.

	13. Law of Consumer Protection,Prof.V.K. Agarwal , 4th Edition , Bharat Law House Pvt. Ltd. 14. Customer Relationship Management Emerging Concepts, Tools and Applications , Jagdish N. Seth and others , Mcgraw Hill Education, 2015 15. Ahuja HL, 2012 Modern Micro Economics: Theory and Application , Chand Company Ltd. New Delhi. 16. Consumer Education, Veena Gandotra , Ami Divatia, Dominant Publishers & Distributors - 2013 17. Consumer Behaviour, Leon G. Schiffman,Joseph Wisenblit, S. Ramesh Kumar Pearson Education, 12th Edition - 2018 18. Consumer Protection Law , Dr. S. R. Myneni , 2nd Edition, Publisher - Asia Law House – 2021
Learning Outcomes	After successful completion of the course student with be able - • To manage limited financial income optimally on consumption and investment. • To take prudent financial decision for family and society. • To provide knowledge of consumer rights and responsibilities through different communication media.

Course Title	**Teaching and Learning in Extension (HSCMJ65 and HSCMJ66)**
Category of Course[51]	Major

Credits[52]& Hours of Teaching

	Theory	Practical	Cumulative
Credits	2	2	4
Hours of Teaching (Total)	30	60	90

Course Objectives

Objectives –

- To make students aware of concept teaching and learning and its importance in extension education.
- .To orient students about various teaching methods.

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	• Concept of Learning, elements & principles involved in learning, Type of learners, Effective learning situation • Extension Teaching - Concept, Definition, Steps and Factors Affecting Teaching • Teaching methods in Extension – concept and importance, classification of Methods - according to use, nature, form, learning objectives	7
II	• Purpose, procedure, advantages, and limitations of each teaching method	7
III	• Factors affecting the use and selection of Teaching Methods. • Teaching and learning through e-resources – Moocs / online platform	6
IV	• Teaching Aid- concept and selection Criteria	6

[51] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[52] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	• Classification of teaching aids based on material used in the teaching-learning process • Projected and non-projected • Audio, Visual and Audio –visual	
V	• Concept, importance, strategies for development and uses, advantages and limitations of each teaching Aid • Cone of Experience	4
PRACTICAL		
I	Development of skill in Planning, preparation, and use of the following Audio -Visual aids (any four):- • Audio aids • Visual aids and • Audio Visual	24
II	Development of skills in planning and use of extension teaching methods • Demonstration, • Drama • Interactive lecture • Group discussion	26
III	Practice the mass communication techniques- • Role Play • Puppetry	10
Texts / References		

1. Dahama O.P. (1988) : Education and Communication for Development , , Oxford and IBH Publishing Co. Pvt. Ltd. New –Delhi
2. Directorate of Adult Education, Govt. of India (1994): New Delhi, Literacy Digest. National Literacy Mission.
3. Hussain Institute for non-formal and continuing education.
4. Jain, R. (1993) Mass Media and Rural Development. Voll. II Manak Publication Pvt. Ltd. New-Delhi
5. Kindervalter, Suzanne (1979): Non-formal Education as an Empowering Process , Centre for International Education , 285 , Hills House South Amherst , Massachuseets 01003. USA. University of Massachusetts.

6. Mistry S.P.(1998) Non Formal Education 1998 Radha Publications 437814B , Ansari Road , Darya Ganj. New Delhi – 1100002.
7. Pankajam G. (2000) – Extension – Third Dimension of Education, Gyan Publishing House, New –Delhi
8. Ray.G.L. (2015) Extension Communication and Management, Kalyani Publication,
9. Pillai , K.S. (1993) : ABC of Non-Formal Education , 17-B , Indraprasth Estate, New Delhi , Indian Adult Education Association.
10. Rajani R. Stirurr – Non-Formal Education for Development. APH Publishing Corporation , 5 , Ansari Road Darya Ganj New Delhi – 1 , 10002
11. Reddy R.S. (1999) – Adult and Non- Formal EducationCommon wealth Publisher.
12. Sharma SR (1997) – Reflections on Continuing and Non – Formal Education –Pointer Publisher , S.M.S. Highway , Jaipur.
13. Singh dev Raj (1995) -Infrastructure Planning for non-formal Education –Commonwealth Publishers.
14. Singh UK , Sudarshan KN. (1996) Non-Formal and continuing Education Discovery Publishing House , 4831/24 , Ansari Road , Darya Ganj , New-Delhi- 110002.
15. Srinivasn , Iyer (1977) : Perspectives on Non-Formal Adult Learning 251 , Park Avenue South , New York 10010 U.S.A. World Education Inc.
16. Supe , S.V. (1997) An Introduction to Extension Education. Oxford IBH Publishing Co. Pvt. Ltd. , New-Delhi.
17. Uttam Kumar Singh and A K Nayak , (1997) Extension Education, Commonwealth Publishers in association with Dr. Zakir Hussain Institute of Non-formal and Continuing Education.
18. Dhama, O.P (2019) Education and communication for Development, Kalyani Publication

Learning Outcomes	1. Students will be able to differentiate between various teaching methods 2. Students can understand the importance of each teaching aid and procedure to develop and use it for effective teaching.

Course Title	**Traditional Textiles and Costumes of India (HSCMJ67)**
Category of Course[53]	Major

Credits[54]& Hours of Teaching

	Theory	Practical	Cumulative
Credits	3	-	3
Hours of Teaching (Total)	45	-	45

Course Objectives

- To enable students to gain knowledge on the arts and designing of historic costumes and textiles of India.
- To understand about the different woven, painted, dyed, printed and embroidered textiles of India.

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	Traditional embroidered textiles; Kashida of Kashmir & Bihar, Kantha of Bengal, Kasuti of Karnataka, Embroidery of Kutch &Kathiavar, Phulkari of Punjab, Chikankari of Lucknow, Manipuri Embroidery, Chamba Rumal, Quilting of Bihar etc.	8
II	Dyed & Printed textiles; Patola, Pochampalli, Ikat of Orissa, Tie & Dye of Tamil Nadu, Printing of Rajasthan (Sanganeri, Bagru, Dabu) Block print of Madhya Pradesh.	6
III	Painted textiles; Kalamkari, Madhubani, Picchwai, Patchitrra, Warli,	6
IV	Woven Textiles; Brocades, Shawls of Kashmir, Muslins of Bengal, Silk of Karnataka, Cotton of Kerala,	6
V	Sociological, physical and psychological aspect of clothing, Famous traditional Indian attire*; Saree, Dhoti, Pagdi, Kurta, Salwar, Lungi* etc.	19

[53] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[54] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	Traditional costumes of Different States of India Traditional *saree* of different States of India	
Texts / References	1. Bhatnagar Parul (2004). *Traditional Indian Costumes & Textiles*, Chandigarh: Abhishek publications. **2.** Gillow & Barnard (2008). *TraditionalIndian Textiles*. London: Thames & Hudson. **3.** Kumar Ritu (2008). *Costumes and Textiles of Royal India*. India: Antique collectors club. **4.** Neumann & Neumann (2020). Textiles of India. London: Prestel	
Learning Outcomes	Upon completion of the course, students will be able to; • Understand the traditional costumes and textiles of India. • Choose and utilize traditional accessories in costumes designing. • Differentiate different textiles and costumes of India.	

Course Title	**Organizational Communication (HSCMV61 and HSCMV62)**
Category of Course[55]	Minor (Vocational)

Credits[56]& Hour of Teaching

	Theory	Practical	Cumulative
Credits	2	2	4
Hour of Teaching (Total)	30	60	90

Course Objectives

- To develop competency of students in effective communication skills.
- To plan an effective communication strategy
- To understand formal and organizational communication

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	Communication: An Introduction • Definition, Nature and Scope of Communication • Importance and objectives of Communication • Process and Elements of Communication • Essentials of Communication • Ten Commandments of Communication • Barrier of Communication	5
II	Communication in Organizations- Formal Vs Informal, Written vs Oral and Horizontal(Lateral), Vertical(Downward) & Vertical(Upward) Communication	6
III	• Verbal or Oral Communication- • Effective Speaking- Principles, Techniques of Effective Speech • Interpersonal communication – Interview, its type and	7

[55] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[56] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	techniques • Advantages and Disadvantages of Oral Communication Mechanical Devices used in Verbal/Oral Communication	
IV	Effective Listening- • The Art of Listening, Meaning, Nature and Importance of Listening Principle of Good listening, Observations in Listening, barrier in listening and Guidelines for effective listening , Note Making	5
V	Effective Writing- • The objective of Written Communication, • Various media are used for written communication – their merits and demerits Reading Skills- • Purpose, Process, Methodologies, • Non-Verbal Communication- Importance, Forms, Kinesics, and Functions of non-verbal Communication • Professional communication skills - preparing and doing (making) Presentations- Do's and Don'ts, drafting email, writing Notices, writing minutes of meetings and press releases	7
PRACTICAL		
I	1. Speaking Skills: Introducing yourself, describing a person, place, situation, and event, giving instruction, making inquiries – at a bank, post-office, air-port, hospital, reservation counter and role play 2. Reading skills: o Reading Rates o Skimming and scanning skills. o Intensive and extensive reading. o Comprehension of general and technical articles	22

II	1. Writing skills o Effective writing- Sentence and paragraph construction o Precise writing- Summarizing o Referencing skills 2. Written forms o Business letters o Emails o Job application letter- Cover letter, Resume o Letter to the editor and social appeals o Report Writing: Format,Structure and Types, Technical Reports, Description and Proposal Presentation Skills: o 4Ps (Planning, Preparation, Practice, Presentation), Outlining; o Effective use of A/V aids and Modes of Delivery o Treatment of reports for presentation. o Practice in using media in oral presentation o Individual and Group Presentations	22
III	1. Interview skills: - o Face to Face and Telephonic interviews o Content • Preparing questions • Communication skills during Interview (with emphasis on intonations, pronunciation, confidence, dictation, audible, moderate, speech speed etc. 2. Non-verbal Communication and Body Language: • Understanding body language of interviewer (body posture, appearance etc.)	16

Texts / References	1. Basic communication skills for Technology, Andreja. J. Ruther Ford, 2nd Edition,Pearson Education, 2011 2. Communication skills, Sanjay Kumar, Pushpalata, 1 stEdition, Oxford Press, 2011 3. Organizational Behaviour, Stephen .P. Robbins, 1st Edition, Pearson, 2013 4. Brilliant- Communication skills, Gill Hasson, 1 stEdition, Pearson Life, 2011 5. The Ace of Soft Skills: Attitude, Communication and Etiquette for success, GopalaSwamy Ramesh, 5 thEdition, Pearson, 2013 6. Developing your influencing skills, Deborah Dalley, Lois Burton, Margaret, Greenhall, 1st Edition Universe of Learning LTD, 2010 7. Communication skills for professionals, Konar nira, 2ndEdition, New arrivals –PHI, 2011 8. Personality development and soft skills, Barun K Mitra, 1 stEdition, Oxford Press,2011 9. Soft skill for everyone, Butter Field, 1st Edition, Cengage Learning india pvt.ltd,2011 10. Soft skills and professional communication, Francis Peters SJ, 1stEdition, McGraw Hill Education, 2011 11. Effective communication, John Adair, 4 thEdition, Pan Mac Millan,2009 12. Bringing out the best in people, Aubrey Daniels, 2 ndEdition, Mc Graw Hill, 1999
Learning Outcomes	• Understanding different communication skill • Differentiate between formal and informal communication • Develop skills of effective reding and listening skills.

BANARAS HINDU UNIVERSITY

(Detailed Syllabus of different Courses under NEP 2020)

Department of Home Science

Faculty of Science

Semester -7

4-years U.G Degree (Honours)

****Student will choose any one paper according to selected branch in VII and VIII Semester**

Food and Nutrition

<table>
<tr><td>Course Title</td><td colspan="4">Technical writing (HSCMJ71)</td></tr>
<tr><td>Category of Course[57]</td><td colspan="4">Major</td></tr>
<tr><td>Credits[58]& Hours of Teaching</td><td colspan="4"><table>
<tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr>
<tr><td>Credits</td><td>4</td><td>NA</td><td>4</td></tr>
<tr><td>Hours of Teaching (Total)</td><td>60</td><td>NA</td><td>60</td></tr>
</table></td></tr>
<tr><td>Course Objectives</td><td colspan="4">• To address the issue in selecting a research problem.
• To understand the tools and techniques needed for completing research
• To learn about writing scientifically</td></tr>
<tr><td colspan="5">Course Content</td></tr>
</table>

[57] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[58] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

Units	Course Content	Hr. of Teaching
I	**RESEARCH METHODS** **Science, scientific methods, scientific approach: Role** of statistics and research in Home Science discipline: Objectives of research: Explanation, control and prediction.	10
II	**Types of Research:** Historical, survey, experimental, case study, social research, participative research. Definition and Identification of a Research Problem, Selection of research problem, Justification, Theory, hypothesis, basic assumptions, limitations and delimitations of the problem. Types of variables	10
III	**Theory of probability:** Population and sample, Probability sampling: systematic random sampling, two stages and multi stage sampling, cluster sampling, Non-Probability sampling: purposive, quota and volunteer sampling/snowball sampling. Basic Principles of Research Design and hypothesises: Purposes of research design; Fundamental, applied and action exploratory and descriptive experimental, survey and case study, ex-post facto, Longitudinal and cross sectional	15
IV	**Qualitative Research Methods:** Theory and design in qualitative research, Definition and types of qualitative research, Methods and techniques of data collection, Informal group discussions, Interviews; Key informants, in-depth interviews, Observations	15
V	**Critical analysis of research.**	10

Texts / References	1. Bandarkar, P.L. and Wilkinson, T.S. (200): Methodology and Techniques of Social Research, Himalaya Publishing House, Mimbai. 2. Bhatnagar, G.L. (1990): Research Methods and Measurements in Behavioural and Soxial Sciences, Agri. Cole Publishing Academy, New Delhi. 3. Dooley, D. (1995): Strategies for interpreting Qualitative Data; Saga Publications, Claifornia.

	4. Gay, L.R. (1981, 2nd Ed.): Educational Research, Charles, E. Merill, Columbus, Ohio. 5. Long, J.S. (Ed.) (1988): Common Problems Proper Solutions: Avoiding Errors in Quantitative Research Beverly Hills, Sage Publications, California. 6. Mukherjee, R. (1989): The Quality of lIfe: Valuation in Social Research, Saga Publications, New Delhi. 7. Stranss, A. and Corbin, J. (1990): Basis of Qualitative Research: Grounded Theory Procedures and Techniques, Saga Publications, California.
Learning Outcomes	Understanding of statistical techniques, learning of various statistical test used to approve hypotheses and uses of computer in research

Course Title	**Food Safety and Microbiology (HSCMJ72 and HSCMJ73)**
Category of Course[59]	**Major**

Credits[60] & Hours of Teaching

	Theory	Practical	Cumulative
Credits	3	2	**05**
Hours of Teaching (Total)	45	60	**105**

Course Objectives	To provide fundamental concept of the microorganism associated with food and their characteristics. This course also provides the concept of preservation and microbiological safety in various food operations.

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	**Introduction to Food Microbiology** • Definition and scope of Microbiology • History of Microorganism in food- Food Preservation, spoilage Infections and Legislations	5
II	**Microorganism in Food** • **Taxonomy, Role and Significance of microorganisms in food-** Food Borne Bacteria, Food Borne Moulds, Food Borne Yeasts, Viruses and Parasite • **Factors affecting growth of Microorganism–**Intrinsic Parameters, Extrinsic Parameters, Bacterial Growth Curve • **Food Borne Diseases: Origin and symptoms -** Types- Food Borne Infections, Intoxications and Toxic infection	10
III	**Cultivation of Microorganism**	10

[59] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[60] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	• Repair, detection and sampling of microorganism • Methods of sampling and detection- a. Conventional Methods of isolation-Pure culture methods (Standard Plate Count), Membrane filter technique, Most probable number, Direct microscopic count, electronic counter, dye reduction test b. Rapid Methods of isolation-Physical Methods: Biosensors, Flow Cytometry, Microcalorimetry. Biological/ Immunological Methods: Fluorescent Antibody, Radioimmunoassay, ELISA, Gel Diffusion. Molecular GeneticMethods- Polymerase Chain Reaction, Chemical Methods: Thermostable Nuclease, Adenosine Triphosphate Measurement • Bioassay	
IV	**Cultivation of Microorganism** • Repair, detection and sampling of microorganism • Methods of sampling and detection- a. Conventional Methods of isolation-Pure culture methods (Standard Plate Count), Membrane filter technique, Most probable number, Direct microscopic count, electronic counter, Dye reduction test b. Rapid Methods of isolation-Physical Methods: Biosensors, Flow Cytometry, Microcalorimetry. Biological/ Immunological Methods: Fluorescent Antibody, Radioimmunoassay, ELISA, Gel Diffusion. Molecular Genetic Methods- Polymerase Chain Reaction, Chemical Methods: Thermostable Nuclease, Adenosine Triphosphate Measurement • Bioassay	10
V	**Food Safety and Quality Control** • **Concept of Food Safety Management, GHP and GMP** • HACCP. ISO 22000 • Food Laws, Regulations and Standards	10

	Control of Microorganism in Foods: Principles and methods of preservation, Physical Methods of Food Preservation-Dehydration,Freezing, Cool Storage, Heat Treatment, Irradiation, Chemical Methods, Biopreservatives esp. Bacteriocins, Introduction to Hurdle concept and Non Thermal Methods	

PRACTICAL		
I	• Understanding Morphology and Structural Features of Various Microorganism: Preparing different types of media. • Learning of different instruments used in microbiology laboratory	20
II	• Staining of bacteria: Gram's Staining, acid-fast spore, capsule and Flagellar Staining, Motility of bacteria, Staining of yeast and molds. • HACCP plan for a food process	20
III	• Microbiological analysis for- Water (Most Probable Number), Milk (Methylene Blue Reduction Test), Curd and probiotic count, adulteration test for microorganism detection.	20

Texts / References	1. Jay, B. J., Loessner,J. M., Golden, A. D.Modern Food Microbiology.SeventhEdition.Food Science Text Series. 2. Frazier, W.C.&Westhoff, D.C.(2014). Food Microbiology. Fifth Edition. TMH Publication, New Delhi. 3. Garbutt, J. (1997). Essentials of Food Microbiology. Arnold London. 4. Mathur, P. (2018). Food Safety and Quality Control. 1st Edition. Orient Blackswan Private Ltd. India. 5. Ravishashankar, R. &Jamuna, B. (2015). MicrobialFood Safety and Food Preservation. CRC Press, Boca Raton.
Learning Outcomes	• Develop understanding of important genera of microorganism associated with food and their characteristics, their growth pattern and parameters. • Develop learning about various preservation and control techniques in various food operations.

Course Title	**Applied Food Science (HSCMJ74 and HSCMJ75)**
Category of Course[61]	**Major**
Credits[62]& Hours of Teaching	See table below
Course Objectives	The goal of the course is to give students a systematic understanding of the chemistry of food ingredients such as proteins, fats, and carbohydrates as well as pigments. Students will also gain insight into the additives that are important to the processed food industry.

	Theory (T)	Practical (P)	Cumulative
Credits	3	2	**05**
Hours of Teaching (Total)	45	60	**105**

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	**Properties of food**- physical, chemical and functional, Protein Structure and properties, factors affecting properties and its interaction with other food constituents- Denaturation, Coagulation.	05
II	• **Carbohydrate**: Structure and properties, factors affecting properties and its interaction with other food **a. Sugar-** Structure and properties, their application in food system, crystallization, caramelization, Maillard reaction and its industrial application, factors affecting properties and its interaction with other food constituents- Sweetness, preservation, appearance, freezing point, fermentation **b. Starches-** Structure and properties, factors affecting properties and its interaction with other food constituents- Starch gelatinization, Dextrinization, Functional properties-	15

[61] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[62] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	Thickening property, binding properties. Introduction to polysaccharides, Resistant starch, Genetically Modified Starch, Non-starch polysaccharide, dietary fibre	
III	• **Lipids**: Structure and properties, factors affecting properties and its interaction with other food constituents- Rancidity, emulsion, Role of Food lipids in flavour.	10
IV	• **Food pigments, colorants and additives:** Pigments in animal and plant tissues, Food colours; Types and properties, regulatory aspects, safety issues.	10
V	• **Food adulteration**: Its types and contaminant & Detection **Beverages:** Harvesting, processing and by-products; Coffee, tea, cocoa, alcoholic beverages.	05
Practical		
I.	• Preparation and preservation of Jam and Jellies and pickles • Drying and dehydration of fruits and vegetables	20
II	• Spray drying of Milk • Preparation of fermented products • Sensory evaluation of food items	20
III	• Identification of food packaging materials • Determination of quality of eggs • Quality analysis of water from different sources	20

Texts / References	1. B. Srilakshmi - Food Science, New Age International Publishers, 8th edition 2. Shakuntala, M. N., Shadaksharaswamy, M. (1998). Foods, Facts and principles, new age international publishers, New Delhi. 3. BIS standards for food products and analysis manual. 4. Manuals of methods of analysis of various food products, FSSAI, 2016

Learning Outcomes	• To provide learning of chemistry of components like proteins, carbohydrates and lipids. This course will also enable learning of food additives that are relevant to processed food industry.

Course Title	**Social and health issues in Society (HSCMJ76)**
Category of Course[63]	Major
Credits[64]& Hour of Teaching	

	Theory	Practical	Cumulative
Credits	2	--	2
Hour of Teaching (Total)	30	--	30

Course Objectives	• To inculcate a positive outlook on health and well-being among students • To increase student's understanding of National development policies of Government and Non-Government organization

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	Health & well-being • Mental health & wellbeing • Physical • Emotional • Social	05
II	Policies to improve health in different age group by Government & Non-governmental organization with recent trends • Health care system in India • Disabilities	05
III	Policies regarding societal issues in different stages of life of human being by Government &Non-governmental organization • Child protection acts • Gender Issues- Women empowerment, Gender Gap, Triple Talaq , Sexual Harassment at Workplace	10

[63] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[64] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	• Poverty related issues	
IV	Role of traditional media and modern media in development communication- • Communication technology • Gender in extension (Issues & prospects)	10

Texts / References	1. Park, K. (2019). Preventive and social medicine. Banarsidas Bhanot Publishers. Edition- 27, ISBN-9789382219194. 2. Dhama,O.P., &Bhatnagar,O.P.(1987). Extension and communication for development. Oxford & IBH Publishing Co .Edition- 2nd,ISBN – 9786459990314. 3. Ahuja,R. (2000). Bhartiya Samaj. Rawat Publications. Edition- 2007, ISBN -8170336392. 4. Srivastava, D.N. Asamanya Manovigyan. Sahitya Prakashan Agra. Edition- 13th. 5. India Year Book (2024) Publications Division, Ministry of Information and Broadcasting, Government of India.
Learning Outcomes	• Students will develop skills to critically evaluate and analyze health and well-being policies, understanding their effectiveness for various age groups and disabilities. • They will gain insights into the impact of legal frameworks like the Child Protection Act and societal policies on development and integration. • Students will assess the roles of traditional and modern media in health communication and explore how gender issues influence extension services, proposing strategies for improved gender equity.

Course Title	**Technical writing (HSCMN71)**
Category of Course[65]	Minor

Credits[66] & Hours of Teaching

	Theory	Practical	Cumulative
Credits	4	NA	4
Hours of Teaching (Total)	60	NA	60

Course Objectives

- To address the issue in selecting a research problem.
- To understand the tools and techniques needed for completing research
- To learn about writing scientifically

Course Content

Units	Course Content	Hr. of Teaching
I	**RESEARCH METHODS** **Science, scientific methods, scientific approach: Role** of statistics and research in Home Science discipline: Objectives of research: Explanation, control and prediction.	10
II	**Types of Research:** Historical, survey, experimental, case study, social research, participative research. Definition and Identification of a Research Problem, Selection of research problem, Justification, Theory, hypothesis, basic assumptions, limitations and delimitations of the problem. Types of variables	10

[65] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[66] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

III	**Theory of probability:** Population and sample, Probability sampling: systematic random sampling, two stages and multi stage sampling, cluster sampling, Non-Probability sampling: purposive, quota and volunteer sampling/snowball sampling. Basic Principles of Research Design and hypothesises: Purposes of research design; Fundamental, applied and action exploratory and descriptive experimental, survey and case study, ex-post facto, Longitudinal and cross sectional	15
IV	**Qualitative Research Methods:** Theory and design in qualitative research, Definition and types of qualitative research, Methods and techniques of data collection, Informal group discussions, Interviews; Key informants, in-depth interviews, Observations	15
V	**Critical analysis of research.**	10

Texts / References	1. Bandarkar, P.L. and Wilkinson, T.S. (200): Methodology and Techniques of Social Research, Himalaya Publishing House, Mimbai. 2. Bhatnagar, G.L. (1990): Research Methods and Measurements in Behavioural and Soxial Sciences, Agri. Cole Publishing Academy, New Delhi. 3. Dooley, D. (1995): Strategies for interpreting Qualitative Data; Saga Publications, Claifornia. 4. Gay, L.R. (1981, 2nd Ed.): Educational Research, Charles, E. Merill, Columbus, Ohio. 5. Long, J.S. (Ed.) (1988): Common Problems Proper Solutions: Avoiding Errors in Quantitative Research Beverly Hills, Sage Publications, California. 6. Mukherjee, R. (1989): The Quality of lIfe: Valuation in Social Research, Saga Publications, New Delhi. 7. Stranss, A. and Corbin, J. (1990): Basis of Qualitative Research: Grounded Theory Procedures and Techniques, Saga Publications, California.
Learning Outcomes	Understanding of statistical techniques, learning of various statistical test used to approve hypotheses and uses of computer in research

Extension and Communication

<table>
<tr><td>Course Title</td><td colspan="4">Participatory Programme Management (HSCMJ77 and HSCMJ78)</td></tr>
<tr><td>Category of Course[67]</td><td colspan="4">Major</td></tr>
<tr><td>Credits[68]& Hours of Teaching</td><td colspan="4"><table><tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr><tr><td>Credits</td><td>3</td><td>2</td><td>5</td></tr><tr><td>Hours of Teaching (Total)</td><td>45</td><td>60</td><td>105</td></tr></table></td></tr>
<tr><td>Course Objectives</td><td colspan="4">• To understand the key concepts and skills in effective programme designing and evaluation
• To demonstrate the ability to develop, implement, and constructively evaluate program and evaluation plans.
• To develop tools for monitoring and evaluation of extension programmes
• To develop skill in designing an extension programme (Home Science Based) to bring change in knowledge, skill and attitude</td></tr>
<tr><td colspan="5">Course Content</td></tr>
<tr><td colspan="5"><table><tr><th>Units</th><th>Course Content</th><th>Hr. of Teaching</th></tr><tr><td>I</td><td>• Overview to PPM - Concept, Meaning and Importance.
• Types of Participation in Development.
• Advantages and disadvantages of participation by different stakeholders
• Programme designing in extension– Meaning of programme planning, principles of programme building process, steps involved in programme building process, programme development cycle, planning models and frameworks, planning</td><td>13</td></tr></table></td></tr>
</table>

[67] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[68] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	and developing teaching methods, precautions used in programme building	
II	• Role of Government and Non-Profit Techniques of participatory planning - RRA, PRA, PLA and their application in extension. • Approaches of participatory planning - cooperative, democratic, bottom up and down. • Situation analysis, Needs and Objectives– Types of needs, methods of identifying needs • Objectives- types, levels and characteristics	8
III	• Participatory planning – Engaging the community and other stakeholders, organisations and committees • Role of officials, non-officials, groups and agencies in programme building process for extension work. • Utilisation of local infrastructure	7
IV	• Programme budgeting, marketing and strategic planning • Sources of budget • Management of budget, • Marketing strategies, steps.	8
V	• Monitoring and Evaluations–Approaches to monitoring, principles, indicators • Evaluation -meaning, purpose, elements, steps, criteria for evaluation, types of evaluation, methods of evaluation, Challenges and issues in monitoring and evaluation • Ethical issues in monitoring and evaluation. • Documentation and follow up – Need for documentation, methods, meaning and need for follow up, methods	9
PRACTICAL		

I	o Identification of the background information of the community o Identification of community needs using participatory methods (any four) a) Social mapping b) Transect walk c) Focus group discussion d) Matrix raking e) Seasonal calendar f) Chapati diagram	20
II	o Planning a two/three days programme on one of the selected needs o Collection of subject matter /content for the designed programme and their presentation o Preparation of teaching aids o Implementation of the planned programme	28
III	o Evaluation of the programme (Designing questionnaire / tool for pre post test o Report writing	12

Texts / References

1. Sharma,FL, Shri Ram, (2013)Extension Teaching Methods,Agrotech Publishing company, Udaipur
2. Dangi, KL and Santhosh Devi Samota, (2013) Agrotech Publishing Academy, Udaipur
3. Mikkelsen, Britha,(2002), Methods for development work and research.New Delhi:Sage Publications
4. Dale R, (2004) Evaluating Development programmes and projects.New Delhi: Sage Publications
5. Reddy,A(1998) Extension education,Sree lakshmi press,Bapatala
6. Gopal lal Jain,(1997) Rural development,Mangaldeep publications,Jaipur

<table>
<tr><td colspan="2">7. Subah Singh Yadav,Ramkumar, Rural Development and poverty alleviation,Pinter Publishers,Jaipur
8. Misganaw, Seraw,(2011) Extension programme planning and evaluation.LAP Lambert Academic Publishing,</td></tr>
<tr><td>Learning Outcomes</td><td>Students will be able to -
• To develop the ability to demonstrate, implement and constructively evaluate programme.
• To invent tools for monitoring and evaluation of extension programmes
• To examine the strategies and approaches in monitoring and evaluating the extension programme</td></tr>
</table>

Course Title	**Development Communication (HSCMJ79 and HSCMJ710)**
Category of Course[69]	Major

Credits[70] & Hours of Teaching

	Theory	Practical	Cumulative
Credits	3	2	5
Hours of Teaching (Total)	45	60	105

Course Objectives

- To familiarize students with global perspective of development communication issues
- To impart analytical skills with regard to the process of development communication
- To understand the role and use of media in attaining sustainable development goals.
- To analyze the indicators of development
- To design media for development

Course Content

Units	Course Content	Hr. of Teaching
I	**Concept : Development and Communication** Communication process – concept, elements and their characteristics, communication competence and empathy, communication effectiveness and credibility, feedback in communication, social networks , Barriers in communication, Message – Meaning, dimensions of a message, characteristics of a good message, Message treatment and effectiveness, distortion of message. Concept of Development as a goal, development as a	10

[69] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[70] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	process, Indicators of Development-Human, development Index, gender empowerment measure, human poverty index etc.	
II	**Development Communication** Definition, prerequisites of development communication, communication links in development communication, development effort, role and significance of development communication, communication links in development, Models of development communication; independent model, Dependency model, Basic needs model, New paradigm of development, approaches to development communication; Diffusion and Extension approach to development communication, planned Strategies for development communication.	10
III	**National and international perspectives of development communication** National and international perspectives; Evolution of development communication concept; Government and non-government initiatives; Government and nongovernment organisations - FAO, UNDP, WHO, UNICEF, CARE and strategies. National projects of development communication - SITE, Jhabnaetc, case studies on development communication	10
IV	**Media and Development Communication** Understanding the role of traditional and modern media in development communication, Development Journalism- roles and responsibilities of a development reporter, ethics in, reporting, specialized skills required and issues in development reporting News reporting: definition of news, ingredients and qualities of news, news	5

	value, types of news reports, structure of news, ICTs: scope in development communication	
V	**Participatory development communication** Participatory approaches in development communication, planning a Development Communication Campaign, Implementation of Development Communication Project, role of NGOs in development communication, need for information and communication policy for development, Development support communication, Challenges in a participatory development communication, participatory communication and civil society. **Research perspectives of development communication** Emerging issues; Measurable and variables of development communication; Existing research projects; Research lag and supporting organizations, Use of Information technology for development communication research.	10
PRACTICAL		
I	o Analysis of development indicators - national and international perspectives o Critical analysis of selected development initiatives	20
II	o Analysis of media for development communication o Designing media for development communication	20
III	o Evaluate strategies used by development agencies for implementation of development programmes	20

Texts / References	1. Mody, Bella (1991), Designing messages for development communication- An audience participation based approach, Sage, Delhi. 2. Melkote, R. Srinivas and Steeves, H. Leslie (2015), Communication for Development in the third world.Theory and practice of empowerment, Sage, New Delhi. 3. Narula, Uma (2014). Handbook of Communication- Models, Perspectives, Strategies, Atlantic, New Delhi. 4. Sen, Amartya (2000). Development as Freedom, Oxford University Press, New Delhi. 5. Development Communication- A Resource manual for teaching , Asian Mass Communication Research Centre 39 Newton Road , Singapore. 6. Servaes, J. (Ed.) (2008). Communication for Development and Social Change, Sage, New Delhi. Sinha, 7. Dipankar. (2013), Development Communication- Contexts for the twenty-first century, Orient Black Swan, New Delhi
Learning Outcomes	• Understand the process of development communication in various national and international organizations • Raise awareness among students about global and local development challenges. • Plan and disseminate communication media on development issues • Encourage ethical and socially responsible communication policies. • Students will learn how to create clear and impactful messages for development projects. • Students will understand how to use different media, like radio and social media, to spread important information.

Clothing & Textiles

<table>
<tr><td>Course Title</td><td>Textile Testing and Quality Control (HSCMJ711 and HSCMJ712)</td></tr>
<tr><td>Category of Course[71]</td><td>Major</td></tr>
<tr><td>Credits[72]& Hours of Teaching</td><td>
<table>
<tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr>
<tr><td>Credits</td><td>3</td><td>2</td><td>5</td></tr>
<tr><td>Hours of Teaching (Total)</td><td>45</td><td>60</td><td>105</td></tr>
</table>
</td></tr>
<tr><td>Course Objectives</td><td>

To educate the students about the techniques used to analyse textile fibre, yarns and fabrics for end-use performance.
To make the student help in acquiring knowledge and understanding of various structural properties of textiles and relate them to end use fabric performance and product.
To familiarize the students about the different testing equipment, their underlying principles, the international accepted standards, test methods and language of Measurement.
To expedite the students to analyse and interpret the results and predict the general textile testing.

</td></tr>
</table>

Units	**Course Content**	**Hr. of Teaching**
I	Introduction to Textile Testing; Concept and Scope, Application areas, Use of Statistics in Data Management, Sampling Procedures	05
II	Total Quality Management (TQM) approach in the field of Textiles & Clothing	05

[71] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[72] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

III	Standardization; Standards for Fabric Performance, Organizations for Standardization (National and International), Quality Control of Textile products, Quality Standards as applicable to various types of Textiles (Garments, yardage, knits, woven, carpets, processing, dyeing)	10
IV	Properties of textiles at different stages: processing and their principles of measurement • Fibres – length, fineness, evenness • Yarn – strength, evenness, openness, load, elongation, crimp • Fabrics – strength, elongation, shrinkage, thickness, cover, air permeability, crease recovery, weight, comfort, stiffness, flammability, repellency, colour fastness • Garment Finishing – colour fastness, shrinkage • Concept of Fabric faults as related to stages of manufacture and the remedies.	15
V	Concept of Statistical Quality Control; Sampling, Test methods used, Tolerance limits, CV%	10

Practical

I	Physical Testing of Textiles using appropriate standardized procedures • Fibres – length, diameter, fineness • Yarn – count, heaviness, twist, crimp, strength • Fabric – thread count, thickness, air porosity, abrasion, strength (Tensile, Tear, Bursting) water vapour permeability, cover, stiffness, drapability, crease recovery, pilling, abrasion	10
II	Chemical Testing • Identification of fibres • Binary Fabrics, blend composition • Shrinkage, water, oil repellency • Sensitivity to various reagents	20

	• Colour fastness	
III	Mechanical Testing • Seam Strength • Identification of fabric weave • Threat count	15
IV	Inspection of Final Garment	15

Texts / References	1. Booth, J.E. (1968) *Principles of Textile Testing* (3rd ed.) London: Newnes-Butterworth 2. Collier, B. J., & Epps, H. H. (1998). *Textile testing and analysis*. Upper Saddle River, NJ: Prentice Hall 3. Skinkle, J. H. (1949). *Textile testing*. New York: Chemical Publishing Co., Inc. 4. Grover, E. B., Grover, E. B., & Hamby, D. S. (2011). *Handbook of textile testing and quality control*. Wiley India Pvt Ltd **5.** Bureau of Indian Standards. (1986) Manual of BIS and ISI standards related to textiles in India. **https://www.bis.gov.in/ministry-of-textile** 6. American Society for Testing and Materials (1898). Annual book of ASTM standards. ASTM International. https://www.astm.org/products-services/standards-and-publications/standards/textile-standards.html
Learning Outcomes	By the end of the course, students will be able to: • Learn different techniques involved in fibre, yarn and fabric preparation • Understand about the fabric performances • Acquire efficiency over different testing methods of textiles.

Course Title	**Draping, Pattern Making and Grading (HSCMJ713 and HSCMJ714)**
Category of Course[73]	Major
Credits[74]& Hours of Teaching	

	Theory	Practical	Cumulative
Credits	3	2	5
Hours of Teaching (Total)	45	60	105

Course Objectives	• To enable the students to make pattern from sketch/photograph • To enable the students to obtain perfect fit and harmony between the fabric and design of the garment • To develop an understanding of a sample pattern using industrial sample room procedure • To develop an understanding of the use of design elements in the process of range development

Units	**Course Content**	**Hr. of Teaching**
I	Introduction to draping and silhouette of the individual- Dress form, Elements of fabric – woven, knitted.	05
II	Development of the Ladies and Kids block and garments by Flat pattern and draping.	05
III	Development of pattern with variation in • One-piece dresses • Two-piece dresses • Dart less dresses	10

[73] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[74] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	(Incorporating various collars, sleeves, yokes, necklines, pockets and plackets etc.)	
IV	Draping of bodice block and skirt block and their variation, draping of asymmetrical designs and preparing patterns. Drafting	10
V	Pattern markings, Pattern envelope and Guide sheet.	15

Practical

I	Developing draping Pattern for garments Introduction to grading terminology and methodology; track or stack method, Grading standard size blocks to various sizes	18
II	Procedure for grading blocks to various sizes • Children – bodice block, sleeve block, skirt & shorts block • Women – bodice block, sleeve block, skirt & short block	20
III	Preparation of Portfolio Preparing 2 patterns with complete sets of markings Designing and preparing pattern envelope (front and back) Preparing markers for 3 different fabric width and designs (stripes, plaids) Preparing guide sheet Preparing 3 accompanying pattern promotional items.	22

Texts / References	1. Crawform, C.A. (2018). *The Art of Fashion Draping* (5th ed.). New York: Bloomsbury Academic. 2. Stringer, P.C. (1992). *Pattern Drafting for Dressmaking* (1st ed.). B T Batsford Ltd. 3. Hillhouse, M.S. and Mansfield, E.A. (1948). *Dress Design, Draping and Flat Pattern Making* (1st ed.). London: Houghton Mifflin Company. 4. Shelden, M.G. (1974). *Design through Draping* (2nd ed.) USA: Burgers Publishing Company.

	5. Brockman, H.L. (1965). *Theory of Fashion Design* (1st ed.). New York: John Wiley and Sons. 6. Strickland, G. (1956). *A Tailoring Manual* (3rd ed.). New York: Macmillan Company. 7. Pepin H. (1942). *Modern Pattern Design* (2nd ed.). New York: Funk & Wagnalls. 8. Cooklin, G., Hayes, S. G., McLoughlin, J., & Fairclough, D. (2011). *Garment Technology for Fashion Designers* (2nd ed.). John Wiley & Sons. 9. Ireland. P.J. (1996), *Fashion Design Illustration: Men* (1st ed.). Batsford Ltd. 6.
Learning Outcomes	By the end of the course, students will develop understanding about: • The principles of draping and get to know about the various tools and equipment used for draping. • The cutting and sketching of pattern, draping procedure of dresses, sample preparation and grading of the material.

Human Development and Family Studies

<table>
<tr><td>Course Title</td><td>Gender issues in Human Development and Relationships (HSCMJ715 and HSCMJ716)</td></tr>
<tr><td>Category of Course[75]</td><td>Major</td></tr>
<tr><td>Credits[76]& Hours of Teaching</td><td>
<table>
<tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr>
<tr><td>Credits</td><td>3</td><td>2</td><td>5</td></tr>
<tr><td>Hours of Teaching (Total)</td><td>45</td><td>60</td><td>105</td></tr>
</table>
</td></tr>
<tr><td>Course Objectives</td><td>

To orient the students regarding the gender issues in human development and family relationships.
To impart experiences regarding gender issues, family practices and biases prevalent in Indian Society.
To understand about gender analysis, orientation and role of mass media,
To familiarize with NGO, and other organization
To know about gender role

</td></tr>
<tr><td colspan="2">Course Content</td></tr>
<tr><td colspan="2">
<table>
<tr><th>Units</th><th>Course Content</th><th>Hr. of Teaching</th></tr>
<tr><td>I</td><td>Unit I: Gender perspectives and theories
Concept of gender- biological and socio-cultural connotations.Historical perspectives.
Gender differences in human development.Gender theories- Gender Orientationtheory of Sandra Bem. Gender Schema theory, theory of Ego</td><td>10</td></tr>
</table>
</td></tr>
</table>

[75] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[76] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	Development andGender. Gender Stratification theory by Blumberg. Gender Identity Formation theory.	
II	**Unit II: Gender discrimination, gap and parity** Gender equality and development.Gender inequalities in human development–dimensions, causes and consequences.Gender discrimination indicators- globalgender gaps.Gender Development Index, Global Gender Gap Index and GenderParity Index. Demographic challenges to family ecology- gender role socialization.	10
III	**Unit III: Gender violence and empowerment** Gender violence- dowry harassment and deaths, suicides, prostitution, sexualharassment and exploitation and prevention. Family violence, amniocentesis, femalefeticide, infanticide, eve teasing. Gender empowerment strategies- working towardsfamily solidarity and social well-being. Gender main streaming- concept, policy ofUnited Nations, objectives, requirements and principles. Empowering lives of women by controlling – patriarchy system, women's sexuality, fertility, labour, lack ofvisibility. Gender budgeting.	15
IV	**Unit IV: Changing trends in status of women** Status of women in India. Various plans and policies designed for achieving genderequality. Changing trends in gender role orientation- early civilization, preindependence,post independent India, contemporary times, socio economic impact on the family and society, cultural impact on the family. Gender role portrayal inmass media.Gender stereotyping in schools. Gender issues at workplace.	10
PRACTICAL		
I	Gender analysis of mass media: Print media and E-media and report writing Study of adopted socialization practices for children of both genders and report writing	20
II	Case studies of three generations on dynamics of gender orientation, Gender roles and responsibilities, report presentation and discussion	20

	Views of adolescents on their gender role orientation- designing questions survey through questionnaire, report presentation	
III	Case studies on changing trends of roles and responsibilities of women and men report writing Visits to women welfare Govt. organizations/ agencies/ NGOs, presentation of report and class discussion	20

Texts / References	1. Banddarage A. 1997. Women Population and Global Crisis - A Political and EconomicalAnalysis.Zed books, London. 2. Barnett RC, Biner L and Baruch GK. 1987. Gender Stress. The Free Press, New York. 3. Chanana K. 1989. Gender and the Household Domain.Sage Publications, New Delhi. 4. Kapadia S and Gala J. 2015. Gender Across Cultures: Sex and Socialization in Childhood. Sage Publications, New Delhi. 5. Kumar CS. 2017. Gender Socialization and The Making of Gender in The Indian Context. Sage Publications. New Delhi. 6. Menon L. 1997. Gender Issues and Social Dynamics.KAnishka Publishers and Distributors, New Delhi. 7. Sudha DK. 2000. Gender Roles. A.P.H. Publishing Corporation, New Delhi.
Learning Outcomes	• Learning of gender roles, orientation and issues • Understanding of role of several organizations

Course Title	**Family Ecology, Cultural Diversity and Therapy (HSCMJ717&HSCMJ718)**
Category of Course[77]	Major

Credits[78]& Hours of Teaching

	Theory	Practical	Cumulative
Credits	3	2	5
Hours of Teaching (Total)	45	60	105

Course Objectives

- To orient the students regarding family as an institution.
- To impart knowledge about family transitions and impact of social change and Development
- To sensitize the students, regarding the theories and issues pertaining to cultural difference in family studies.
- To orient the students regarding various methods and techniques of family therapy.
- To know about conflict resolution
- To learn role-playing
- To gain knowledge of Genogram construction

Course Content

Units	Course Content	Hr. of Teaching
I	**Families in India and Family relationships**	10

[77] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[78] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	Families in India - Types of traditional and modern family structures based on different dimensions (Marriage type, nature of residence, nature of authority, nature of relations among the family members, nature of kin composition, single parent families, unrelated families etc.). Families in rural, tribal, and agrarian community – status of women, children, elderly, and men in these families. Family as a social system. Socialization within the family. Models of parenting. Parent child relationships. Family cohesion, conflict and family disorganization –impact on children. Effect of childbirth on marital life. Child abuse. Family interactions and delinquency. Improving family communication and interpersonal relations.	
II	**Family under transition, Family stressors and resilience** Family transitions. Change and continuity over life cycle. Impact of social change on family and changing family patterns in India. Religion and family. Family as an institution under stress. Family crisis. Poverty and children. Stressors and family relations - with special reference to family disruption, sickness, divorce, substance abuse and disability. Family's adaptation to stress. Family resilience and protective factors for promotion of family resilience, Intergenerational family dynamics in management of family conflicts and negative patterns.	15
III	**Culture, family and diversities in family life and challenges** Culture- definition, components and characteristics of culture. Agents of cultural influences- school, family, community and other social groups. Cultural factors and impact on families. Elements of India's diverse culture – religion, philosophy, cuisine, language, fine arts, dance, music. Diversities in family life – ethnic, linguistic, regional, etc. Effect of urbanization, secularization, westernization, technological advancement, globalization and other such developments on families in general and	10

	agrarian in particular. Challenges before families across cultures. Legal provisions – emerging cultural trends. Research trends in cross-cultural family studies, methodological issues.	
IV	**Family therapy – orientation, types and theoretical perspectives** Family Therapy – concept, need, significance, areas, scope, goals and application of marriage and family therapies. Evolution of family therapy. Early models and basic techniques of family therapy- group process and communications analysis. Theoretical developments in marital and family therapy. Approaches in family therapy - Social Learning approach, Psychoanalytic, Behavioural, Systems approach. Social Constructionism theory. Attachment theory. Classic schools of family therapy- Bowenian Family Systems therapy, Strategic, Structured, Communication and Experiential therapies, Psychodynamic Therapy, Cognitive- Behaviour family therapy and integrated family therapy. Contemporary marital therapies. Family therapy in the 21st century and its application to multicultural, single parent and disorganized families, solution focused therapy, narrative therapy and integrative models. Application of family therapy in depression, substance abuse, schizophrenia and eating disorders.	10
PRACTICAL		
I	Conflict Resolution Role-plays - Create role-playing exercises that involve family conflicts and resolutions. Students can practice mediating conflicts and developing strategies for effective communication and resolution.	10
II	Comparative Analysis Project-Students choose two families—Both from different cultures. They analyze and compare aspects such as family roles, marriage customs, child-rearing practices, and conflict resolution strategies.	10
III	Role-Playing Difficult Scenarios-Create role-playing exercises involving challenging family scenarios, such as conflict resolution, crisis management, or working with resistant clients. Students can take on different roles, including therapist, client, and family members.	10

IV	Genogram Construction-Have students create genograms of a family of their choice (real or fictional), incorporating family relationships, patterns, and histories. Students can then analyze the genogram using different theoretical lenses	14
V	Cultural Competency Training-Conduct training sessions on cultural competence, focusing on how to address and incorporate cultural differences in family therapy. This could include case studies or role-plays that highlight cultural nuances Interviews with Families in Transition-Have students conduct interviews with families who have experienced or are experiencing significant transitions (e.g., migration, loss of a family member, economic changes). Students should focus on how these transitions have impacted family dynamics and resilience strategies used.	16

Texts / References	1. Ballard SM and Taylor AC. 2012. *Family Life Education with Diverse Populations*. Sage Publications, Los Angeles. 2. Brislin RW. 1990. *Applied Cross Cultural Psychology*. Sage Publications, New Delhi. 3. Carson DK, Carson CK and Chowdhury A. 2007. *Indian Families at the Crossroads*. Gyan Publishing House, New Delhi. 4. Ratra A, Kaur P, Chhikara S, Varma T and Chawla P. 2006. *Marriage and Family- InDiverse and Changing Scenario.* Deep & Deep Publications Pvt. Ltd, New Delhi. 5. Carr A. 2008. *Family Therapy – Concepts, Process and Practice.* 2nd Ed., John Wiley & Sons Ltd, Chichester. 6. Carson DK, Carson CK, Chowdhury A. 2007. *Indian Families at The Crossroads*. Gyan Publishing House, New Delhi.
Learning Outcomes	• Understanding of family as an institution, learning of family transition, cultural differences in family studies and techniques applied in family therapy.

	• Students can practice mediating conflicts and developing strategies for effective communication and resolution. • Students can then analyze the Genogram using different theoretical lenses

Family Resource Development

<table>
<tr><td>Course Title</td><td colspan="2">Consumer Product Safety and Legislation (HSCMJ719 and HSCMJ720)</td></tr>
<tr><td>Category of Course[79]</td><td colspan="2">Major</td></tr>
<tr><td>Credits[80]& Hours of Teaching</td><td colspan="2"><table>
<tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr>
<tr><td>Credits</td><td>3</td><td>2</td><td>05</td></tr>
<tr><td>Hours of Teaching (Total)</td><td>45</td><td>60</td><td>105</td></tr>
</table></td></tr>
<tr><td>Course Objectives</td><td colspan="2">• To know about the basics of consumer safety.
• To know about the consumer rights
• To aware about the different acts related to safety and liabilities, redressal and complaints of consumers
• To impart field related knowledge of consumer safety and product hazards and redressal.</td></tr>
<tr><td colspan="3">Course Content</td></tr>
</table>

Units	**Course Content**	**Hr. of Teaching**
I	•**Introduction-**Meaning, Definition, scope and Importance. •**Product related Hazards-**Physical hazards, Health hazards and Environment hazards. •**Production formation and Labeling** Brand Labels, Information Labels Descriptive Labels and grade labels. •**Product Liability** Meaning, Liability of manufacture trader, importance	15
II	**Provision of the product Safey &liabilities under various Laws-** •Consumer protection ACT, 2019(CPA) •Sale of goods ACT,1930(SGA)	20

[79] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[80] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	•Indian contract ACT, 1872 •Bureau of Indian Standard ACT,2016(BIS) •Consumer protection (Direct Selling) Rules,2021 •Consumer protection (Ecommerce Rules, 2020) •Food safety and standard Act,2006 (FASSAI) •Medical Devices Rules, (2017) •Motor Vehicle ACT,1940(MVA)	
III	• **Mechanism of consumer redressal**-Time limit for complaint filling, Burden of proving fault/defect, Noncompliance with the regulatory standards, non-issue of adequate information on labels.	05
IV	• **Redressal of consumer complaints**-Rectification of defects, return of price paid, compensation for the damage and mental agony, recall of the product.	05

Practical		
I	• Project work on requirements of product safety education to consumers and its implementation.	20
II	• Survey of consumer product-hazards and redressal.	20
III	• Market analysis on different safety measures used in types of food products	20

Texts / References	1. Banddarage A. 1997. Women Population and Global Crisis - A Political and EconomicalAnalysis.Zed books, London. 2. Barnett RC, Biner L and Baruch GK. 1987. Gender Stress. The Free Press, New York. 3. Chanana K. 1989. Gender and the Household Domain.Sage Publications, New Delhi. 4. Kapadia S and Gala J. 2015. Gender Across Cultures: Sex and Socialization in Childhood. Sage Publications, New Delhi. 5. Kumar CS. 2017. Gender Socialization and The Making of Gender in The Indian Context. Sage Publications. New Delhi.

	6. Menon L. 1997. Gender Issues and Social Dynamics.Kanishka Publishers and Distributors, New Delhi. 7. Sudha DK. 2000. Gender Roles. A.P.H. Publishing Corporation, New Delhi.
Learning Outcomes	• Understanding of consumer rights, safety, liabilities, redressal and complaints • Understanding of consumer safety education, product hazards and handling of problems.

Course Title	**Ergonomics and Appropriate Technology (HSCMJ721 and HSCMJ722)**
Category of Course[81]	Major
Credits[82]& Hours of Teaching	

	Theory	Practical	Cumulative
Credits	3	2	**05**
Hours of Teaching (Total)	45	60	**105**

Course Objectives	• To impart the fundamental knowledge, scope and importance of Ergonomics. • To provide the understandings of hazards, and tools of Ergonomics • To gain information about anthropometry and ergonomics • To gain knowledge of employee satisfaction in work environment • To understand the relationship between man, machine and environment

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	• **Definition and meaning of ergonomics.** • Scope of ergonomics - In work spaces, sports, leisure and healthy, safety. • **Types of ergonomics:** Physical ergonomics, Cognitive ergonomics, Organisation ergonomics	10
II	• **Ergonomics Hazards and injuries-** • Ergonomics hazards - Repetitive movements, Manual handling, Workplace design. Ergonomics Injuries - Repetitive stress injuries (RSI), Repetitive motion injuries (RMIs), Cumulative Trauma Disorder (CTDs)	10
III	• **Importance of ergonomics -** Efficiency of work, Physical efficiency, Training efficiency.	10

[81] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[82] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	• **Benefits of ergonomics in workplace-** • Benefits regarding- production cost, Productivity, quality, employee engagement, safety culture.	
IV	• **Ergonomic process and tools-** Physical assessment, Employee injury history, Benefits of ergonomics assessments • **Ergonomic assessment tools-** NIOSH Lifting equation (National institute for occupational safety and health), RULA (Rapid upper limb assessment), HAV (Hand arm vibration calculator)	10
V	• **Anthropometry-** Definition, meaning and types Elements of anthropometry-Height, weight, BMI (Body mass index) Body circumferences (waist, hip, limbs)	05

PRACTICAL		
I	• Survey on finding out different sources of satisfaction of employee needs in the work environment.	30
II	• To know the relationship between man, machine and environment.	15
III	• Application of ergonomics to improve productivity and safety in different field	15

Texts / References	1. Patni. M., (2015), Ergonomics, Star Publications, 1st Edition, ISBN-9789381246511. 2. Shrilakshmi,B., Nutrition Science, New Age Publishers Pvt. Ltd, 6th Edition, ISBN-9789386418883.
Learning Outcomes	• Learning of fundamentals of Ergonomics, different types of hazards, ergonomics in workplaces, assessment and anthropometry • Understanding of employee satisfaction in workplace, and the relationship between man, machine and environment

BANARAS HINDU UNIVERSITY

(Detailed Syllabus of different Courses under NEP 2020)

Department of Home Science

Faculty of Science

Semester -8

4-years U.G Degree (Honours)

Food and Nutrition

<table>
<tr><td>Course Title</td><td>Statistics and Computer Application (HSCMJ81 And HSCMJ82)</td></tr>
<tr><td>Category of Course[83]</td><td>Major</td></tr>
<tr><td>Credits[84]& Hours of Teaching</td><td>
<table>
<tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr>
<tr><td>Credits</td><td>3</td><td>1</td><td>4</td></tr>
<tr><td>Hours of Teaching (Total)</td><td>45</td><td>30</td><td>75</td></tr>
</table>
</td></tr>
<tr><td>Course Objectives</td><td>• To enable the students to develop knowledge in statistical tools and computer applications.
• To understand the meaning of correlation, regression analysis for estimation and prediction purposes.
• To discuss about the needs of various statistical test in Home Science discipline.</td></tr>
</table>

[83] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[84] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	• To teach the students how to organize, analyze, interpret and present the research data effectively. • To demonstrate the understanding of descriptive statistics by practical application of quantitative reasoning and data visualization • To demonstrate the use of correlation, regression analysis and association for estimation and prediction purposes.

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	Introduction to Statistics - Definition, importance and scope of statistics, Descriptive and Inferential statistics. Data Management; Raw data, ungrouped frequency distribution, grouped frequency distribution, relative frequency table, cumulative frequency tables, how to convert raw data to the form of a frequency distribution, Graphs; histogram, frequency polygon, frequency curve, ogives. Scales of measurement-nominal, ordinal, interval and ratio scales. Coding of data.	8
II	Measures of central tendency; Definition, arithmetic mean; simple and weighted arithmetic mean, median, mode, geometric mean, their uses, merits and demerits, Partition values – quartiles and percentiles, Measures of dispersion; Definition, Absolute and relative measures of dispersion; range, variance, standard deviation, standard error, coefficient of variation.	10
III	Normal Distribution and its applications, Probability- classical approach, random variable- discrete and continuous random variables, Normal random variable, characteristics and properties of a normal curve, standard normal distribution, converting raw scores into standard normalized scores, standard normal curve.	6
IV	Correlation, Regression and Association of Attributes, Linear correlation- meaning and types of correlation, scatter diagram, Karl Pearson's coefficient of correlation, Spearman's Rank correlation coefficient, Linear Regression and Prediction: Concept of regression	8

	lines and regression equations, use of regression lines, role of coefficient of alienation in prediction.	
V	Testing of Hypotheses; Definition, concepts of statistical hypothesis- simple and composite, null hypothesis, alternative hypothesis, test of a statistical hypothesis, critical region, Type I error, Type II error, significance level, confidence level. Parametric test- Testing of hypothesis concerning the mean of a population, testing the equality of means of two populations, Testing of hypothesis concerning the proportion of a population, testing the equality of proportions of two populations, chi-square test, F test, ANOVA concepts, ANOVA-single factor, Non parametric; chi-square test- testing goodness of fit, independence of attributes. Computer; importance and uses in research & statistics, Basic features of Microsoft word and Excel, Statistical analysis using Excel sheet and SPSS, tabular & graphical representation of data using computer, frequency distribution; Histogram, pie diagram, scatter diagram graphs using Excel.	13
PRACTICAL		
I	Preparation of different types of tables with research data on computer. Graphical representation of research data; Different types of statistical graphs and their uses in statistics, Line graph; types and different uses, pie diagram, scatter diagram etc. Preparation of Frequency distribution curves and graphs- histogram, frequency polygon and ogives through computer.	10
II	Discussing and solving practical problems of Statistics -Related to central tendency; mean, median, mode, partition values, dispersion; standard deviation, mean deviation, concept of Skewness and kurtosis and their measures etc., and hypothesis and hypothesis testing; Correlation, chi-square, t-test, Z - test, ANOVA.	10
III	Basic Statistical tools in computer for research and data analysis; MS-word, MS- Excel, SPSS etc.	10

	Learn about SPSS software and Solving above given statistical problems using Excel sheet and SPSS.	
Texts / References	1. Kothari, C. R. (2014). *Research Methodology – methods and techniques*, 3rd edition, New Delhi: New age International Publishers 2. Gupta, S. C., & Kapoor, V. K. (2020). Fundamentals of mathematical statistics. New Delhi: Sultan Chand & Sons. 3. Gupta, S. P. (2001). Statistical Methods, New Delhi: Sultan Chand & Sons. 4. Gupta, S. P. (2001). Advanced Practical Statistics. New Delhi: S. Chand and Company Ltd., 5. Landau, S. (2019). A handbook of statistical analyses using SPSS. London: Chapman & Hall. 6. Singh, V. P. (2009). Simplified MS Office 2007. New Delhi: Computech Publications Limited. 7. Wackerly, D., Mendenhall, W., & Scheaffer, R. L. (2008). Mathematical statistics with applications. USA: Thomson Learning	
Learning Outcomes	By the end of course the students will be able to; • Discuss the significance of statistics in the discipline of Home Science. • Describes the basic concepts of statistical inferences and test of significance. • Apply the appropriate statistical techniques for analysis and interpretation of data. • Understand working on a computer system and assess of MS- WORD, MS-EXCEL. • Analyze Research data through various test as chi-square, mean, median, mode, standard deviations, t-test etc. and present result through graphical presentation and tabulation using computer	

Course Title	**Nutritional Biochemistry (HSCMJ83 and HSCMJ84)**
Category of Course[85]	Major

Credits[86] & Hours of Teaching

	Theory	Practical	Cumulative
Credits	3	2	**05**
Hours of Teaching (Total)	45	60	**105**

Course Objectives

- To provide core knowledge of application of biochemistry in different areas, metabolism of basic nutrients required for the sustenance of the life, to educate about the activity of enzymes required for several biological reaction
- To learn the detection method of sugar, protein and cholesterol in food and blood samples.

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	**Introduction to Biochemistry** Scope and importance Biochemistry, Familiarization with different phenomenon Surface tension, Colloidal state, Osmotic pressure, Permeability, Water activity, Entropy	05
II	**Introduction to Carbohydrate Metabolism** • Classes of carbohydrate along with structures (monosaccharides, disaccharides, oligosaccharides and polysaccharides) • Properties and dietary importance of starch, sucrose, lactose, glucose and fructose	20

[85] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[86] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	• Metabolism: Glycolysis, Tricarboxylic acid (TCA) cycle, Gluconeogenesis.	
III	**Introduction to Protein Metabolism** • Classes, properties, functions and secondary structure of protein (alpha helix, beta pleated sheets) • Classification of Amino acids- essential and non-essential • Basic concept and definition of: Complete and incomplete protein, biological value, Protein Efficiency Ratio. • Metabolism: Deamination, Transamination and Urea Cycle.	10
IV	**Introduction to Lipid Metabolism** • Classification of lipids • Properties and function of fats, oils and fatty acids (MUFA, PUFA, SFA,TFA) • Metabolism: Beta-oxidation of fatty acids**.**	05
V	**Basics of Enzymes** • Definition and classification of enzymes • Properties of enzymes and factors affecting enzyme activity • Brief idea of model of enzyme action (lock and Key model) • Basics concept of enzyme inhibition	05

Practical

I	• **Basic Instruments/Equipment used in Laboratories and its important working tips:** • pH meter • Spectrophotometer • Fluorimetry • Electrophoresis • Colorimeter • Centrifuge • Desiccator, Oven, Electronic Digital Balance etc.	30
II	• Qualitative detection of protein (Biuret-ninhydrin)	20
III	• Qualitative detection of Sugar (Molisch's test, Benedict's test, Iodine test), non-reducing sugars (hydrolysis test)	10

Texts / References	1. B. Srilakshmi - Nutrition Science, New Age International Publishers, seventh edition 2. Swaminathan, M. (1997), Essentials of Food and Nutrition, vol I Second edition, Bangalore, BAPPCO 3. Park,K. (2017), Parks Textbook of Preventive and Social Medicine, 24thed.Jabalpur M/s,Banarasidas Bhanot.
Learning Outcomes	• Learning about the concept of health and nutrition, dealing with common nutritional diseases, gathering knowledge of several nutritional programmes being implemented to combat the diseases. • In hand experiences in solving nutrition and health related problems related to community, a better understanding of several problems prevailing in the community

Course Title	**Community Nutrition (HSCMJ85 and HSCMJ86)**
Category of Course[87]	Major
Credits[88]& Hours of Teaching	

	Theory	Practical	Cumulative
Credits	3	1	**04**
Hours of Teaching (Total)	45	30	**75**

Course Objectives	• To provide knowledge regarding the basic concept of health, nutrition, healthcare services and their impact in the community in Indian Context. • To gain practical experiences in the field of community nutrition

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	**Concept of Community Nutrition** • Basics of community and community nutrition, concept of health and Well-being (Quality of Life), • Behavioural Change Intervention in Community Settings • Health Care System in India with special reference to Primary Health Care (PHC), Vital Health Statistics, • Assessment of Nutritional Status- Introduction to ABCD Methods, • Role of Community nutritionist as an essential part of the Health Care Delivery System.	10
II	**Approaches for Improving Nutrition and Health status of the community**	10

[87] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[88] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	• Health based interventions including immunization, provision of safe drinking water, prevention and management of diarrhoeal diseases. • Education based intervention including growth monitoring and promotion. • Concept of Food Security, Participation of women in Income generation with special reference to nutrition profile of the family.	
III	**Food choices of community and Nutrition Education** • Factor affecting food choices of the consumers (cultural,psychological, lifestyle) • Basic concept of Nutrition Education, Methods used in nutrition education (Lecture, group discussion, role play, storytelling, demonstration, exhibition etc).	10
IV	**National programmes for Improving Health and Nutrition Status of the community** • Evolution of Health Policy in India (NHP), • Programmes for communicable disease control (diarrhoeal disease control, Universal Immunization Programme, National AIDS Control programme, National Malaria eradication programme, National Tuberculosis programme,programmes for non-communicable diseases (Blindness Control programme, diabetes control programme, national mental health programme, child survival and safe motherhood programmes etc.	10
V	**Policies and Programmes related to Nutrition in India** Concept, Aim and prevention strategy of the Policy and Programmes- National Nutrition Policy, Integrated Child Development Services Scheme , Prevention of Blindness due to Vitamin A Deficiency, National Nutritional anaemia Control programme, Iodine Deficiency disorder control programme, Mid-day-meal programme, PM Poshan etc.	05

	Role of International and National Agencies in combating nutritional deficiency diseases Functions of the International and National Organization – WHO, FAO, UNICEF, CARE, ICAR, ICMR, NIN, FNB, CFTRI, NNMB.	

Practical		
I	• Visit to any Anganwadi Centre or school for nutritional assessment of the children	10
II	• Visit to Primary Health Centers	10
III	• **Nutritional surveillance;** epidemiological studies of diet and also the development, implementation and evaluation of dietary recommendations and goals.	10

Texts / References	1. B. Srilakshmi - Nutrition Science, New Age International Publishers, seventh edition 2. Swaminathan, M. (1997), Essentials of Food and Nutrition, vol I Second edition, Bangalore, BAPPCO 3. Park,K. (2017), Parks Textbook of Preventive and Social Medicine, 24thed.Jabalpur M/s,Banarasidas Bhanot.
Learning Outcomes	• Learning about the concept of health and nutrition, dealing with common nutritional diseases, gathering knowledge of several nutritional programmes being implemented to combat the diseases. • In hand experiences in solving nutrition and health related problems related to community, a better understanding of several problems prevailing in the community

Course Title	**Food Quality Analysis (HSCMJ87 and HSCMJ88)**
Category of Course[89]	Major

Credits[90]& Hours of Teaching

	Theory	Practical	Cumulative
Credits	2	1	**03**
Hours of Teaching (Total)	30	30	**60**

Course Objectives

- To provide fundamental concept of the microorganism associated with food and their characteristics.
- To provide the concept of preservation and microbiological safety in various food operations.

Course Content

Units	Course Content	Hr. of Teaching
I	**Basic terms used in Food Quality Analysis** • Standard Solution (Normal, Molar, Molal, Buffer Solution). • pH and Hydrogen ion concentration • Preliminary concepts of free fatty acid, Acid value, Saponification, Refractive Index, Iodine value, RM and PV value of fats. • Moisture and Ash content in different foods • Conceptoftitration	10
II	**Principle, Technique and Applications of the following methods-** • Colorimetry • Spectrophotometry • Electrophoresis (Paper and Gel) • Chromatography (Paper, Thin Layer, Gas, High Performance) • Photometry for analysis for minerals in different foods	15
III	**Basic methods of nutrient analysis of foods:**	5

	• Kjeldahland Dumas Method for analysis of protein • Anthronemethod for analysis carbohydrates. • Quantitative method for Ash Content analysis in different foods. • Methods for Determination of crude fibre in different foods.	

PRACTICAL		
I	**Experiments on the following-** • Preparation of standard Solutions • Determination of pH in different foods using pH meter	10
II	• Acid-base titration • Carbohydrate determination using Spectrophotometer	10
III	• Determination of crude fibre in different foods • Determination of ash content in different foods	10

Texts / References	1. Instrumental methods of analysis By Dr. B. K. Sharma. 2. A first course in food analysis By A. Y. Sathe. 3. Hand book of analysis and quality control for fruit & vegetable products By S. Ranganathan. **4.** Food science chemistry & experimental food By Dr. M. Swaminathan.
Learning Outcomes	• Learning of principles and techniques of analysis of different nutrients present in foods • Knowledge of performing several experiments to determine nutrient content in foods.

[89] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[90] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

Course Title	**Statistics and Computer Application (HSCMN81 and HSCMN82)**
Category of Course[91]	Minor
Credits[92]& Hour of Teaching	

	Theory	Practical	Cumulative
Credits	3	1	4
Hour of Teaching (Total)	45	30	75

Course Objectives	• To enable the students to develop knowledge in statistical tools and computer applications. • To understand the meaning of correlation, regression analysis for estimation and prediction purposes. • To discuss about the needs of various statistical test in Home Science discipline. • To teach the students how to organize, analyze, interpret and present the research data effectively. • To demonstrate the understanding of descriptive statistics by practical application of quantitative reasoning and data visualization • To demonstrate the use of correlation, regression analysis and association for estimation and prediction purposes.

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	Introduction to Statistics - Definition, importance and scope of statistics, Descriptive and Inferential statistics. Data Management;	8

[91] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[92] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	Raw data, ungrouped frequency distribution, grouped frequency distribution, relative frequency table, cumulative frequency tables, how to convert raw data to the form of a frequency distribution, Graphs; histogram, frequency polygon, frequency curve, ogives. Scales of measurement-nominal, ordinal, interval and ratio scales. Coding of data.	
II	Measures of central tendency; Definition, arithmetic mean; simple and weighted arithmetic mean, median, mode, geometric mean, their uses, merits and demerits, Partition values – quartiles and percentiles, Measures of dispersion; Definition, Absolute and relative measures of dispersion; range, variance, standard deviation, standard error, coefficient of variation.	10
III	Normal Distribution and its applications, Probability- classical approach, random variable- discrete and continuous random variables, Normal random variable, characteristics and properties of a normal curve, standard normal distribution, converting raw scores into standard normalized scores, standard normal curve.	6
IV	Correlation, Regression and Association of Attributes, Linear correlation- meaning and types of correlation, scatter diagram, Karl Pearson's coefficient of correlation, Spearman's Rank correlation coefficient, Linear Regression and Prediction: Concept of regression lines and regression equations, use of regression lines, role of coefficient of alienation in prediction.	8
V	Testing of Hypotheses; Definition, concepts of statistical hypothesis-simple and composite, null hypothesis, alternative hypothesis, test of a statistical hypothesis, critical region, Type I error, Type II error, significance level, confidence level. Parametric test- Testing of hypothesis concerning the mean of a population, testing the equality of means of two populations, Testing of hypothesis concerning the proportion of a population, testing the equality of proportions of two populations, chi-square test, F test, ANOVA concepts, ANOVA-single	13

	factor, Non parametric; chi-square test- testing goodness of fit, independence of attributes. Computer; importance and uses in research & statistics, Basic features of Microsoft word and Excel, Statistical analysis using Excel sheet and SPSS, tabular & graphical representation of data using computer, frequency distribution; Histogram, pie diagram, scatter diagram graphs using Excel.	
PRACTICAL		
I	Preparation of different types of tables with research data on computer. Graphical representation of research data; Different types of statistical graphs and their uses in statistics, Line graph; types and different uses, pie diagram, scatter diagram etc. Preparation of Frequency distribution curves and graphs- histogram, frequency polygon and ogives through computer.	10
II	Discussing and solving practical problems of Statistics -Related to central tendency; mean, median, mode, partition values, dispersion; standard deviation, mean deviation, concept of Skewness and kurtosis and their measures etc., and hypothesis and hypothesis testing; Correlation, chi-square, t-test, Z - test, ANOVA.	10
III	Basic Statistical tools in computer for research and data analysis; MS-word, MS- Excel, SPSS etc. Learn about SPSS software and Solving above given statistical problems using Excel sheet and SPSS.	10

Texts / References	1. Kothari, C. R. (2014). *Research Methodology – methods and techniques*, 3rd edition, New Delhi: New age International Publishers 2. Gupta, S. C., & Kapoor, V. K. (2020). Fundamentals of mathematical statistics. New Delhi: Sultan Chand & Sons. 3. Gupta, S. P. (2001). Statistical Methods, New Delhi: Sultan Chand & Sons. 4. Gupta, S. P. (2001). Advanced Practical Statistics. New Delhi: S. Chand and Company Ltd., 5. Landau, S. (2019). A handbook of statistical analyses using SPSS. London: Chapman & Hall.

	6. Singh, V. P. (2009). Simplified MS Office 2007. New Delhi: Computech Publications Limited. 7. Wackerly, D., Mendenhall, W., & Scheaffer, R. L. (2008). Mathematical statistics with applications. USA: Thomson Learning
Learning Outcomes	By the end of course the students will be able to; • Discuss the significance of statistics in the discipline of Home Science. • Describes the basic concepts of statistical inferences and test of significance. • Apply the appropriate statistical techniques for analysis and interpretation of data. • Understand working on a computer system and assess of MS- WORD, MS-EXCEL. • Analyze Research data through various test as chi-square, mean, median, mode, standard deviations, t-test etc. and present result through graphical presentation and tabulation using computer

Extension and Communication

<table>
<tr><td>Course Title</td><td colspan="4">Dynamics of Groups and Leadership Development (HSCMJ89 andHSCMJ810)</td></tr>
<tr><td>Category of Course[93]</td><td colspan="4">Major</td></tr>
<tr><td>Credits[94]& Hour of Teaching</td><td colspan="4"><table>
<tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr>
<tr><td>Credits</td><td>3</td><td>2</td><td>5</td></tr>
<tr><td>Hour of Teaching (Total)</td><td>45</td><td>60</td><td>105</td></tr>
</table></td></tr>
<tr><td>Course Objectives</td><td colspan="4">1. To develop an understanding about group behavior and dynamics for effective communication and group management
2. To acquaint students with techniques for sustainable group dynamics
3. To considerate the relationship of effective leadership in development</td></tr>
<tr><td colspan="5">Course Content</td></tr>
<tr><td colspan="5"><table>
<tr><th>Units</th><th>Course Content</th><th>Hr. of Teaching</th></tr>
<tr><td>I</td><td>BASICS OF GROUP/ SOCIAL GROUP
• Working with Groups & Teams-
• Introduction to group: Meaning, characteristics, types and functions
• Stages and process of group formation
• Group norms and structure- Values Ethics and Morals
• Understanding group behaviour – Definitions, Theories - social comparison, cognitive dissonance, self-presentation, drive, social impact, self-attention, social cognition
• Individual; Interpersonal and human behaviour and dimensions</td><td>9</td></tr>
<tr><td>II</td><td>GROUP DYNAMICS-</td><td>6</td></tr>
</table></td></tr>
</table>

[93] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[94] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	Concept, features, principles, various roles and actions, techniques for managing group dynamics	
III	**ASPECTS OF GROUP DYNAMICS** - • Cooperation, competition, communication, Group pressure, Group cohesiveness, Group leadership • Measurement of group dynamics - tools and techniques, group break down - causes and solutions, , Weaknesses and myths, Crowds and the mob mentality, Diversity and difference; • Group dynamic skills - training and development. • Group norms-types, group norms development, social influence, changing group norms • Diversity in group dynamics- definition, types, impotence in a group	10
IV	**LEADER AND LEADERSHIP DEVELOPMENT** • Leeder and leadership- concept, types and importance of leadership • Roles, functions and characteristics of a leader • Evolution and growth of leadership • Leadership traits and ethics, attitude, behaviour, personality traits • Selection techniques of leader • Theories (Trait Theory, Behavioural theories, Contingency Theories, Transactional Theories and Transformational Leadership Theory) • Training for developing leadership • Difference between a Leader and a Manager	10
V	**MANAGEMENT OF GROUP** • Team building- concept, &7 C's of team building, benefits • Group problem-solving and decision-making - meaning, importance, and techniques • Conflict management; types of conflicts, sources of conflicts, positive and negative outcomes, Approaches to conflict management	10

	• Stress management; Active listening and feedback; Achieving cooperative group structure • Decision-making- concept and Process, Advantages, and disadvantages	
PRACTICAL		
I	Understand the process of SWOT and practice it. Developing skills in planning and conducting small group communication. -Meetings -Focus group discussion/Group discussion -Debate	12
II	Develop skills in writing of minutes of meeting Study of various groups (Formal and Informal) and presentations of reports for the same (Objective, activities, problems/challenges, sources of Conflicts, approaches of conflict management, Future plans etc.) • Family • Friend circle • A yoga club • Corporate company • An athletic team • Youth clubs • Caste-based groups • Mahila mandals • Self-help group	26
III	Identify the leadership development activities and select the leader for various groups	22

Texts / References

1. Avery, G. C. (2005). *Understanding Leadership*. London: Sage Publications

<table>
<tr><td colspan="2">
<ol start="2">
Donelson R. Forsyth, Group Dynamics, Fifth edition , 2006
Encyclopedia of Management (2009). Leadership Theories and Studies. In Encyclopedia of Management. http://www.enotes.com/management-encyclopedia/leadership-theories-studies
French, J. R. P. Jr. and Raven, B. (1962). The bases of social power. In D. Cartwright (Ed), Group Dynamics: Research and Theory (pp. 259-269). New York: Harper and Row.
Likert, R. (1967). New patterns of management. New York: McGraw-Hil
Northouse, P. G. (2007). Leadership: theory and practice. 4th ed. Thousand Oaks, CA: Sage Publications
R. Kreitner, A. Kinicki. Organizational Behavior, 9th edition, McGraw-Hill, New York, 2010.

</td></tr>
<tr><td>Learning Outcomes</td><td>

Analyze the features and developmental stages of groups and team process
Critically evaluate the theoretical concepts of group behaviour in a real situation
Able to measure group dynamics
Demonstrate group dynamic skills
Apply problem-solving skills and higher-level thinking strategies
Develop and selection of effective leadership skills

</td></tr>
</table>

Course Title	**Diffusion and Adoption of Innovation (HSCMJ811 andHSCMJ812)**
Category of Course[95]	Major

Credits[96]& Hours of Teaching

	Theory	Practical	Cumulative
Credits	3	1	4
Hours of Teaching (Total)	45	30	75

Course Objectives

- To define diffusion and enumerate the elements of diffusion.
- To explain the processes of adoption and innovation, as well as diffusion of innovation.
- To identify characteristics of innovation, rate of adoption and adopter categories.
- To study the community processes,
- To analyze the adoption studies

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	**Definition of Diffusion, Innovation and Adoption** Diffusion, innovation and adoption - concept and meaning, elements, traditions of research on diffusion, the generation of innovations, innovation-development process, tracing the innovation-development process, converting research into practice.	10
II	**Innovation Decision Process** The adoption process-concept and stages, dynamic nature of stages, covert and overt processes at stages, the innovation-decision process – a critical appraisal of the new formulation.	05

[95] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[96] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

III	**Adopter categories** Innovativeness and adopter categories, adopter categories as ideal types, characteristics of adopter categories, Perceived attributes of Innovation and their rate of adoption, factors influencing rate of adoption.	10
IV	**Role of extension in diffusion of innovation** Diffusion effect and concept of over adoption, opinion leadership, change agent and characteristics of opinion leaders, monomorphic and polymorphic opinion leadership, multi-step flow of innovation, concepts of homophily and heterophily and their influence on flow of innovations.	10
V	**Types of innovation-decisions** optional, collective and authority and contingent innovation decisions, consequences of innovation-decisions – desirable or undesirable, director indirect, anticipated or unanticipated consequences, decision making – meaning, theories, process, steps, factors influencing decision – making. **Critique of the current approach** Consequences of Innovation, desirable versus undesirable consequences, direct versus indirect consequences, anticipated versus unanticipated consequences. types and gap widening effect, generations of Innovation and Knowledge Sharing. Criticism of diffusion research.	10
PRACTICAL		
I	Case studies in individual and community adoption process. Content analysis of adoption studies.	10
II	Identification of adopter categories on a selected technology. Identification of opinion leaders, Sources of information at different stages of adoption on a selected technology.	10
III	Study of factors increasing or retarding the rate of adoption.	10

	Presentation of reports on adoption and diffusion of innovations.	
Texts / References	1. Ban, A. W. Van den and Hawkins, H. S. Hawkins (1996) Agricultural Extension, Blackwell Science, Second edition, 294p 2. Leeuwis Cees (2003) Communication for Rural Innovation: Rethinking Agricultural Ex Rogers, 3. E.M. (1995). Diffusion of Innovations (4th ed.). New York: Free Press. tension, . 4. Dearing, James W. (2008) Evolution of Diffusion and Dissemination Theory, J Public Health Management Practice, 14(2), 99–108, 5. MANAGE (2007) Course 102 Communication and Diffusion of Agricultural Innovations Post Graduate Diploma in Agricultural Extension Management (PGDAEM), Published by National Institute of Agricultural Extension Management, Rajendranagar, India, 6. Richard E. Just and David Zilberman (1983), "Stochastic Structure, Farm Size, and Technology Adoption in Developing Agriculture," Oxford Economic Papers, Vol. 35, No. 2 (July, 1983), pp. 307-328.	
Learning Outcomes	1. Students have knowledge about innovations spread among the rural society by getting into the insights of diffusion concept and adoption process. 2. Students understand about various concepts related to diffusion and adoption of innovations. 3. Students can carry out research on adoption and diffusion of innovations-Employability 4. Understanding of adoption process in the community 5. Learning of several factors affecting adoption	

<table>
<tr><td>Course Title</td><td colspan="4">Social Entrepreneurship (HSCMJ813)</td></tr>
<tr><td>Category of Course[97]</td><td colspan="4">Major</td></tr>
<tr><td>Credits[98]& Hours of Teaching</td><td colspan="4"><table>
<tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr>
<tr><td>Credits</td><td>3</td><td>-</td><td>3</td></tr>
<tr><td>Hours of Teaching (Total)</td><td>45</td><td>-</td><td>45</td></tr>
</table></td></tr>
<tr><td>Course Objectives</td><td colspan="4">• To provide conceptual inputs regarding different types of entrepreneurships.
• To sensitize and motivate the students towards entrepreneurship management.
• To orient and impart knowledge towards identifying and implementing entrepreneurship opportunities.
• To develop management skills for entrepreneurship management.</td></tr>
<tr><td colspan="5">Course Content</td></tr>
<tr><td colspan="5"><table>
<tr><th>Units</th><th>Course Content</th><th>Hr. of Teaching</th></tr>
<tr><td>I</td><td>• Conceptual Analysis- Meaning, definition, characteristics and types of entrepreneurships, entrepreneur and enterprise.
• Merits and demerits of entrepreneurship.
• Role of enterprise in national and global economy</td><td>8</td></tr>
<tr><td>II</td><td>• Social Entrepreneurship- Meaning, nature and significance
• Developing social entrepreneurial competencies – requirements and understandings the process, interpersonal skills, creativity, assertiveness achievement, factors affecting entrepreneur’s role.</td><td>8</td></tr>
<tr><td>III</td><td>• Launching and organizing an enterprise- Environment scanning – information sources, schemes of assistance, problems.</td><td>10</td></tr>
</table></td></tr>
</table>

[97] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[98] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	Enterprise selection, market assessment, enterprise feasibility study, SWOT Analysis. • Resource mobilization – finance, Technology raw material, site and manpower. Costing, marketing management and quality control.	
IV	• Project formulation- Meaning, types, project identification, generation of project idea, sources of project, screening, project formulation – steps involved • Project reporting- Writing a business plan through planning, mobilization of resources and market surveys.	10
V	• Government policies and schemes for support in enterprise development and management. • Agencies for training, infrastructure, financial help, and marketing- DIC, SIDO, NSIC, TCO, SISI, STEP, STED, KITCO, CIDCO, KVIC	9

Texts / References

1. Gupta.C.B& Sreenivasan N.P, Entrepreneurship Development in India, New Delhi,
2. Sultan Chand, 2007. Desai. V, Dynamics of entrepreneurial development & management, Mumbai, Himalaya publishing house, 2011.
3. Khanka .S.S., entrepreneurial development, S Chand & Co Ltd., Ram Nagar, New Delhi,
4. 2009
5. Jain, N.K &Varshney.R.L, Entrepreneurship Development-RBSA publications, Jaipur, 2009.
6. Journals:
7. Indian Journal of Social Entrepreneurship Entrepreneurship
8. Development and Management
9. International journal of gender and entrepreneurship

Learning Outcomes	Students will be able - • To exemplify the concepts of entrepreneurship management and develop skills towards it • To attribute resource mobilization, enterprise selection, assessment, marketing and quality control in organizing an enterprise

	• To identify gender issues in entrepreneurship development • To create business plans for setting up of enterprise

Clothing and Textiles

Course Title	**Fashion Design and Illustration (HSCMJ814 and HSCMJ815)**
Category of Course[99]	Major

Credits[100] & Hours of Teaching

	Theory	Practical	Cumulative
Credits	3	2	**05**
Hours of Teaching (Total)	45	60	**105**

Course Objectives

- To understand the principles of design and elements of design,
- To learn about fashion forecasting
- To know about sketching

Units	Course Content	Hr. of Teaching
I	Elements and Principles used in dress design • Composition – With one element, With more than one element • Colour; its sensitivity and composition in dress • Components of fashion: Silhouette, Details, Colour, Fabric Texture	05
II	Sketching Garments and Accessories; • Sketching garment details: Necklines and collars, Sleeve details, Skirts and pants, Blouses, Coats and Jackets, Drawing and Fastenings, Tassels and Tucks, Frill fringes and Gathers, Cowls and Cascades, Hemlines and Insertions, Lacing, Macrame and Patchwork, Pleats, Quilting and Ties, Shirring, Smocking and zips, Yokes and skirts	15

[99] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[100] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	• Sketching of Accessories: Hats and head gear, Footwear, Bags and purses, Jewellery	
III	Fashion Illustration • Colour matching using different mediums • Basic Rendering: Stripes, Checks, Gingham, Plaids, Patterns and Textures • Reducing print and shading • Rendering a line of garments based on themes (anyone): Beachwear, Swimwear, Casual wear, Sportswear, Nightwear, Cocktail wear, Evening wear, Ramp wear, Executive wear, Traditional Indian Costume	20
IV	Fashion forecasting, Study of markets and segment	05

PRACTICAL		
I	Sketching • Sketching of different sections of Croquis (front, back and side view) • Garment and garment details • Accessories	15
II	Preparation of Mood Board, Theme Board and Colour Board	20
III	Developing a line of garments on a theme (any two of the following); • Casual wear • Sportswear • Cocktail wear • Executive wear	10
IV	Sketching • Basic rendering techniques • Developing a line of garments based on a theme	05
V	Understanding and sketching theme based on fashion forecast • Sourcing of raw materials • Developing line, based on fabric and theme selected	10

	• Spec sheet study • Sampling • Garment analysis • Costing – construction of garments • Line presentation • Use of sale promotion material Designing of 5 garments for a selected theme; drafting and making patterns for the same Construction of any 2 garments.	

Texts / References	1. Tate, S.L. (2004). Inside Fashion Design Harper and Row (5th ed.). New York: Pearson/Prentice Hall. 2. Samuel, K. (1986). Life Styles, Fashion Styles (2nd ed.). Orbis London: TBS The Book Service Ltd. 3. Milbank, C.R. (1985). COUTURE, The Great Fashion Designers (1st ed.) Stewart, Tabori & Chang. 4. Carter, E. (1977). The Changing World of Fashion (2nd ed.). New York: G.P. Putnam's Sons. 5. Rubin, L.G. (1976). The World of Fashion (3rd ed.). San Fransisco: Canfield Press 6. Castelino, M. (1994). Fashion Kaleidoscope (1st ed.). BPI India Pvt Ltd. 7. Walz, B. and Morris, B. (1978). The fashion Makers, Random House
Learning Outcomes	After completion of the course, students will be able to; • Understand the composition of dress design, including working with one and multiple elements • Explore colour sensitivity and its role in dress composition. • Identify the key components of fashion, such as silhouette, details, color, and fabric texture. • Develop skills in sketching garment details, including necklines, collars, sleeves, skirts, pants, blouses, coats, jackets, and various fastenings. • Understand of the core knowledge of fashion themes based on forecasting, analyze garment construction costs, prepare line presentations, and utilizing sales promotion materials.

Course Title	**Eco-Friendly Textiles; Processing and Finishes(HSCMJ816 andHSCMJ817)**
Category of Course[101]	Major

Credits[102]& Hours of Teaching		Theory	Practical	Cumulative
	Credits	3	1	**04**
	Hours of Teaching (Total)	45	30	**75**

Course Objectives	• To make the students aware about the needs and importance of eco-friendly textiles • To educate them about the eco-textile processing • To make them efficient in the processing of natural dyes • To understand the labeling standards used in eco-friendly textile products

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	Eco-friendly Fibers; Introduction, Needs and Importance Ecology; Production ecology, Human ecology and Disposal ecology. Natural fibers; Importance of natural fibers in textiles, Major fibers used in textiles - cotton, jute, linen, and silk. Minor fibers used in textiles - sisal, pineapple, coir, nettle. Protein fibers - soya, spider silk. Extraction or preparation methods of natural fiber-retting and its methods, decortications by hand and machine. Recent findings of natural fibers in the textile industry.	10
II	**Eco-Textile Processing** Eco textile processing and its role in sustainable development, Enzymemeaning; properties of enzymes used in textiles, application of	10

[101] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[102] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	enzymes in Textile processing- Bio-desizing, bio-scouring, bio-bleaching, bio-polishing, bio-stoning, enzymatic degumming and enzymatic retting; Methods and uses.	
III	**Natural Dyes** History and Importance, Types of Natural dyes, Sources; plant, animals and minerals, Dye Extraction methods;Ultrasonic and microwave extraction, enzymatic extraction, solvent extraction, supercritical carbon dioxide extraction Application of dyes on fabrics, Mordants; natural mordants; Importance, Mordanting techniques; pre, meta, and post mordanting. Importance of natural dyed fabrics.	10
IV	**Natural Finishes, Eco-labeling, and standards, Importance of natural finishes** Traditional plants and herbs are used in natural finishing. Recent Natural finishes on textiles-. Enzyme technology, Foam technology, Supercritical carbon-di-oxide dyeing, and Plasma technology. Eco-labeling and various eco-standards for textiles - Eco-auditing. Ethical Manufacturing: Ethical and environmental issues relating to the textile and fashion industry. Ethical Standard Practices for sourcing sustainable fashion clothing and accessories. Corporate Social responsibility in Environment protection – Importance –Environmental impacts of textile industries.	15

PRACTICAL		
I	• Group discussion on the concept of eco-friendly processing. • Preparation of dye shade chart using natural dyes from various dye sources and mordants.	18

II	Performany two of the following in textile processing: • **Bio-desizing**:Using amylases to remove starch-based sizing. • **Bio-scouring**: Applying enzymes to clean fibers. • **Bio-bleaching**: Using enzymes for eco-friendly bleaching. • **Bio-polishing**: Enhancing fabric surface smoothness. • **Enzymaticdegumming**: Removing sericin from silk. • **Enzymatic retting**: Extracting fibers from plant materials	8
III	• Design a campaign or brochure promoting eco-friendly textiles.	4

Texts / References	1. Muthu, S. S. (Ed.). (2017). *Sustainable Fibres and Textiles* (1st ed.). Woodhead Publishing. 2. Sheikh, J. N., & Teli, M. D. (2024). *Sustainable Textile Chemical Processing* (1st ed.). CRC Press 3. Periyasamy, A. P., & Venkatesan, H. (2018). *Eco-Materials in Textile Finishing* Springer, Cham 4. Mirraftab, M. and Horrocks, A.R. (2007). Eco-textiles: The way Forward for sustainable development in textiles. Florida: CRC Press. 5. Slater, K. (2003). Environment Impact of Textiles: Production, Process and Protection. Florida: CRC Press.
Learning Outcomes	After completion of the course, students will be able to; • Understand and explore the importance of natural fibers in textiles • Learn about the importance of natural dyes and explore different types of natural dyes (Plant, animal, mineral) • Understand the importance of natural finishes in textile processing and recognize traditional plants and herbs used for natural finishing. • Explore recent advancements in natural finishes. • Learn about eco-labeling standards and their relevance in the textile industry

<table>
<tr><td>Course Title</td><td colspan="2">Garment Production Technology and Management (HSCMJ818)</td></tr>
<tr><td>Category of Course[103]</td><td colspan="2">Major</td></tr>
<tr><td>Credits[104]& Hours of Teaching</td><td colspan="2"><table>
<tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr>
<tr><td>Credits</td><td>3</td><td>-</td><td>04</td></tr>
<tr><td>Hours of Teaching (Total)</td><td>45</td><td>-</td><td>75</td></tr>
</table></td></tr>
<tr><td>Course Objectives</td><td colspan="2">● To enable the students to get acquainted with the latest garment/clothing manufacturing technology related to the current practice in the clothing industry
● To make the students aware of the influence of garment retailing on the clothing production process
● To impart knowledge about the latest electronic equipment and machines used in the garment industry
● To make students aware of the importance of maintaining quality standards during production</td></tr>
<tr><td colspan="3">Course Content</td></tr>
<tr><td colspan="3"><table>
<tr><th>Units</th><th>Course Content</th><th>Hr. of Teaching</th></tr>
<tr><td>I</td><td>Introduction to the background and structure of the garment/clothing industry, Role and importance of textile and Garment Industry in the Indian economy, Problems and prospects of textile and garment industry.
• Textile policy
• Textile industry Management: Management hierarchy, responsibilities, coordination, organization, management aids, factors influencing management organization, Comparative organization of different textile groups, Organization of senior</td><td>15</td></tr>
</table></td></tr>
</table>

[103] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[104] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	management, organization of productive functions, Department management	
II	The organization of a garment factory, Principles of Management, Various Departments like: a) Design Department b) Marketing Department c) Finance Department d) Purchasing Department e) Production Department f) Operations Department	10
III	Manufacturing Technology 1. Cutting & Cutting Room- Market Planning, Efficiency, Method & Use of worker plan, Methods of spreading of fabric and requirements of the spreading process, Cutting the fabric – objectives and methods of cutting fabric 2. Fusing Technology 3. Sewing Technology: Sewing – properties, types, Stitch – types, Sewing Machines – Feed mechanisms, machine needles, Sewing threads – type of fiber, construction and finish, thread size, thread package, thread costs, thread properties and seam performance, Sewing problems – stitch formations, damage along the seam line puckering, Testing for sewability and tailorability, Sewing Machinery, Use of components and trims 4. Alternative methods of joining materials: Welding and adhesives, Moulding 5. Pressing Technology 6. Production Technology 7. Warehousing	15
IV	Engineering & Quality Control, Production Engineering and Principles of Quality Control	05

Texts / References	**References** 1. Cooklin, G. (2006). *Introduction to Clothing Manufacture* (2nd ed.). Wiley-Blackwell. 2. Carr, H. and Latham, B. (1944). *The Technology of Clothing Manufacture* (2nd ed.). Willey publication. 3. Chuter, A.J. (1995). *Introduction to Clothing Production Management* (2nd ed.). Wiley publication. 4. Tyler, D.J. (1992). *Materials Management in Clothing Production* (1st ed.). Wiley Blackwell Science. 5. Carr, H. and Latham, B. (1992): *Fashion Design and Product Development* (1st ed.). Wiley Blackwell Science.
Learning Outcomes	By the end of the course, students will be able to: • Acquire knowledge about the role of the garment industry in the Indian economy • Understand the background, structure, and importance of the garment industry in the Indian economy and explore problems and prospects related to the textile and garment industry. • Able to comprehend the textile sector, which will foster the growth of entrepreneurial abilities. • Understand the garment technology, learn about garment retailing, and uses of machines in the garment industry.

Human Development and Family Studies

<table>
<tr><td>Course Title</td><td colspan="4">Methods and Techniques of Assessment in Human Development (HSCMJ819 andHSCMJ820)</td></tr>
<tr><td>Category of Course[105]</td><td colspan="4">Major</td></tr>
<tr><td>Credits[106]& Hours of Teaching</td><td colspan="4"><table><tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr><tr><td>Credits</td><td>3</td><td>2</td><td>5</td></tr><tr><td>Hours of Teaching (Total)</td><td>45</td><td>60</td><td>105</td></tr></table></td></tr>
<tr><td>Course Objectives</td><td colspan="4">• To apprise the students with different methods and techniques of assessment in human development.
• To develop skills in psychological test administration, scoring, analysis, interpretation and report writing.
• To learn practically about assessment of human growth and development</td></tr>
<tr><td colspan="5">Course Content</td></tr>
</table>

Units	Course Content	Hr. of Teaching
I	**Developmental assessment, methods and techniques.** Assessment –Concept, functions, characteristics, steps and rationale of assessment. History of tests and measurements. Different methods of child study/ developmental assessment. Techniques of measurement and their significance in measuring different aspects of human development. Role of assessment in intervention.	08
II	**Types of measures & methods** Scientific methods-definition, importance, goals and steps. Essential criteria of Scientific methods -reliability, validity control, item	07

[105] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[106] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	analysis. Use of objective measures and methods. Types of tests – individual and group tests. Projective techniques. Psychometrics, Sociometry. Types of scales –nominal, ordinal, interval and ratio scale	
III	**Development of tests/ scales** Developmental Assessment from birth to early childhood. Tests for infants andchildren. APGAR scoring of new borns. Physical growth assessment. Anthropometricevaluation of nutritional status. Measurement of intelligence. Assessment ofpersonality, aptitude, attitude and environment. Development of test/scale, steps,guidelines and standardization procedure – various methods of calculation of validityand reliability. Variables- extraneous, confounding, researcher variables andparticipant variables affecting internal validity. Threats to internal validity.	15
IV	**Ethical issues and barriers** Ethical issues in the assessment of human development. Special consideration inassessing young children. Ethical issues and barriers in assessment of infants andyoung children. Assessment of children with special needs. Interpretation and useof assessment information. Trends and challenges in assessment of human behavior.	15
PRACTICAL		
I	• Visit to neonatal unit to observe the neonates and to observe their assessment of APGAR score by pediatricians. • Physical growth assessment and nutritional status of children of different age groups. • Review of available developmental screening and diagnostic tests for infants, toddlers and pre-school children. • Review of available screening and diagnostic tests for school age children and adolescents.	15
II	• Developmental assessment of infants by using Bayley's Scale of Infant	15

	• Development (BSID). Interpretation of results and report writing • Administration of psychological tests for measuring cognitive abilities andintelligence.	
III	• Administration of psychological tests for assessment of social, emotional, language and overall personality assessment of children.	10
IV	• Assessment of home environment using HOME (Home Observation and Measurement of Environment) inventory for different age groups of children/Indian Home Inventory/ Family Environment Scale. Interpretation of results and report writing on home environment.	10
V	• Development of scale or check lists on selected areas of development. Standardization of the developed test, scoring and interpretation of results.	10

Texts / References	1. Anastasi A. 1988. *Psychological Testing*. 6th Ed., McMillan Publishing Company, New York. 2. Bailey DB and Worley M. 2003. *Assessing Infants and Preschoolers with Handicaps*. MerrillPublishing Company, Delhi. 3. Gregory RJ. 2004. *Psychological Testing - History, Principles and Applications*. 4th Ed.Pearson Education, Atlantic. 4. Gumbiner J. 2003. *Adolescent Assessment.* John Wiley & Sons, New Jersey. 5. Kumar R. 2014. *Research Methodology - A Step by Step Guide for Beginners*, 4th Ed., SagePublications, New Delhi. 6. Miller LA, Macintire SA and Lovler RL. 2012. *Foundations of Psychological Testing – APractical Approach*. 4th Ed., Sage Publications, New Delhi.

	7. Shaughnessy JJ and Zechmeister EB. 2014. *Research Methods in Psychology*. 10th Ed.,McGraw - Hill Publishing Company, New York.
Learning Outcomes	• Understanding of different methods of assessment in human development • Development of psychological skill testing, scoring , analysis etc.

Course Title	**Programme Development for Vulnerable Families (HSCMJ821 andHSCMJ822)**
Category of Course[107]	Major

Credits[108] & Hours of Teaching

	Theory	Practical	Cumulative
Credits	3	1	4
Hours of Teaching (Total)	45	30	75

Course Objectives

- To make the students learn to identify vulnerable population in rural and urban areas.
- To develop an understanding regarding techniques of planning, implementing and evaluating development and programmes and projects for vulnerable families.
- To provide practical knowledge of projects and programmes running for vulnerable,
- SWOT analysis and programme evaluation by using several methods

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	**Programmes for vulnerable families** Developmental programmes for vulnerable families. Types of programmes and projects for vulnerable families. Different approaches to develop programmes for families. Inter disciplinary approach to research project management. National and international research projects for vulnerable families. National and International programmes and policies for vulnerable children and families. UNICEF framework	15

[107] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[108] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	for protection, care and support of orphans and vulnerable children. National Plan of Action for protection and care of children	
II	**Programme development – elements and process** Need assessment of vulnerable families. Development of need based multiple programmes or vulnerable families and children - project proposal, principles of project design, steps, guidelines, process involved, aspects of appraisal, basic considerations, risks and returns in project proposal development. Elements of effective programmes for families. Project sustainability- factors, components and action plan. Scientific values Role of Human Development and Family Studies and professional ethics in development of programmes for vulnerable population. Donors and funding agencies- types, National and International donors funding projects. Role of public and private donors in funding projects.	15
III	**Working with vulnerable families** Working with vulnerable families- need, goals and significance. Developing strategies to support vulnerable children and their families. Ethics in working with vulnerable families. Working with children in vulnerable families- need, goals, and strategies. Family resilience in the face of adversities- concept, risk and protective factors. Strengthening family relations. Including fathers in work with vulnerable families. Implementing the stimulating management techniques- Programme Evaluation and Review Technique (PERT), Critical Path Method (CPM), Line of Balance (LOB), Gantt Chart and SWOT analysis.	15
PRACTICAL		
I	• Review of the national international projects and programmes for vulnerablefamilies. • Discussion on programmes and research projects • Development of need assessment performa	15

	• Learning to use selected PRA techniques – – Focus group discussions/ interviews – Transit walk, social mapping and time line. • Programme Evaluation by using- Programme Evaluation and Review Technique (PERT), Critical Path Method (CPM) • SWOT analysis • Development of concept note for research project on vulnerable families	
II	Interviewing families with need assessment Developing need based programme for vulnerable families Class discussion on developed programme and enhancement.	7
III	• Programme implementation – Working with families and execution of developedprogrammes- home based approach • Working with families and execution of developed programmes-child centredapproach	8

Texts / References	1. Chandra P. 1995. *Project Planning, Analysis, Selection, Implementation and Review*. Tata McGraw, New Delhi. 2. Chaudhary DP. 1992. *Women Welfare and Development*. NIPPCD, New Delhi. 3. Duration (Weeks)Topics Community Science: Human Development and Family Studies 4. Dunst C, Trivette C and Angela D. 1998. *Enabling and Empowering Families: Principlesand guidelines for families*. Brookline Books, Inc. Newton. 5. Golden O, Lopres P and Mills G. 2012. *Economic Security for Extremely Vulnerable Families:Themes and Options for Work-force Development and Asset Strategies.* Urban Institute, University of New Hampshire, New Hampshire. 6. Resource and Development Unit. 2012. *Supporting Vulnerable Families: Self-guided learningpackage.* Community Child Care Unit, Victoria.

	7. Mynarska M, Riederer B and Jaschinski I. 2015. *Vulnerability of families with children:Major risks, future challenges and policy recommendations*. Wittgenstein Centre for Demography and Global Human Capital, stockhome 8. https://www.dcya.gov.ie/documents/publications/A_Guide_to_what_Works_in_Family_Support_Serviecs_for_Vunerable_Families.pdf 9. https://www.who.int/maternal_child_adolescent/documents/pdfs/lancet_child_dev_series_paper3.pdf 10. https://www.unicef.org/aids/files/Framework_English.pdf 11. https://www.cambridge.org/working-with-vulnerable-families/children-in-the-midst-offamily-and-domestic-violence
Learning Outcomes	• Learning of identification of vulnerable population and finding out suitable technologies for the solution of their needs

Course Title	**Dynamics of Human Development (HSCMJ823)**
Category of Course[109]	Major

Credits[110]& Hours of Teaching		Theory	Practical	Cumulative
	Credits	3	NA	3
	Hours of Teaching (Total)	45	NA	45

Course Objectives	• To impart information to students regarding advanced concepts of human development, current trends and issues of development. • To provide in depth understanding of the developmental concepts and processes in human life span.

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	**Nature vs. Nurture** Human development – basic concepts and issues. Genetic foundation, genetic code, chromosomal abnormalities. Role of epigenesis and canalization in growth and development. Interface between heredity and environment. Genetic research and its influence on child's development. Current research findings on pre-natal development and neo-natal stages – developmental sequence, prenatal environmental influences, developmental threats and DNA methylation.	15
II	**Cognitive development**	10

[109] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[110] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	Brain development- key concepts and process of development. Models of intelligence. Cognitive development during early years - perceptual capacities, attention, memory, imitation, early learning, conditioning and assessment. Role of early deprivation and enrichment in cognition. Information processing. Social cognition, emotional intelligence, metacognition and self regulation and their contribution to human mind and behavior. Gardner's Model of Multiple Intelligence. - Sketching of Accessories: Hats and head gears, Footwear, Bags and purses, Jewellery	
III	**Psycho-social Issues** Language development and its components - pre-linguistic development, phonology, semantics and bilingualism. Socialization practices and influencing factors. Cultural influence on child outcomes. Exposure to media and technology and role of parents and institutions. Impact of socio-emotional deprivation on different stages of development. Vulnerability and resilience, risk and protective factors. Personality changes and self-perceptions through different stages of development. Integrated view of human development.	10
IV	**Current and classic research trends in human development** Seminal work of Sigmund Freud, Erikson, Piaget, Uri Bronfenbrenner and Margaret Mead. Design and field work of "Six cultures project". Current research trends in physical, intellectual, psycho- social and moral development of children from birthto adolescence.	10

Texts / References	1. Berk EL. 2017. *Development Through the Life Span*. 7th Ed., Pearson Education, Atlantic. 2. Bronfenbrenner V. 1979. *The Ecology of Human Development*. Cambridge, Harvard. 3. Feldman RS. 2017. *Development Across the Life Span*. Pearson, London, England. 4. Garbarino J. 1982. *Children and Families in the Social Environment*. Aldine, New York.

	5. Kail R and Cavaraugh JC. 2016. *Human Development - A Life Span View*. Cenage Learning, Boston. 6. Papalia DE and Olds SW. 2008. *Human development*. 11th Ed., McGraw Hill, New York 7. Santrock JW. 2006. Life Span Development. Mc Graw Hill, New York.
Learning Outcomes	• Understanding of advanced concepts of human development, current trends and issues of development • Understanding of the developmental concepts and processes in human life span

Family Resource Development

<table>
<tr><td>Course Title</td><td>Family Finance and Personal Financial Management (HSCMJ824 and HSCMJ825)</td></tr>
<tr><td>Category of Course[111]</td><td>Major</td></tr>
<tr><td>Credits[112]& Hours of Teaching</td><td>
<table>
<tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr>
<tr><td>Credits</td><td>3</td><td>2</td><td>05</td></tr>
<tr><td>Hours of Teaching (Total)</td><td>45</td><td>60</td><td>105</td></tr>
</table>
</td></tr>
<tr><td>Course Objectives</td><td>• To understand the basics of family finance,
• To know about the need of insurance, Tax planning etc.
• Understandings of concept of expenses, income, budget etc.
• Learning of financial security, goal and importance of insurance</td></tr>
<tr><td colspan="2">Course Content</td></tr>
<tr><td colspan="2">
<table>
<tr><th>Units</th><th>Course Content</th><th>Hr. of Teaching</th></tr>
<tr><td>I</td><td>Family Finance
• Income: Concept of income, Types of income, Sources of family income.
• Family Expenses
Meaning, Different items of expenditure,
factors affecting expenditure of family.
• Budgeting:
Objectives,Importances,
Types of budgets, Advantages of budget.
Investment: Meaning,Time value of money, Principals of investment, Types of investment, Bank and post office deposits, Shares, Bonds,</td><td>20</td></tr>
</table>
</td></tr>
</table>

[111] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[112] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	Mutual funds.	
II	**Insurance** • Meaning and advantages of various insurances, • Types of insurance-Life, health, goods. • Tax Planning: Concept of tax, types of taxes. e.g. Direct • and indirect taxes. Methods of tax collection. • Financial goal: Setting financial goals e.g. Paying off debts, buying a home, building emergency fund, saving for • retirement.	15
III	• Spendings reduction: Avoid impulse spending, identify and control expenses, reduce debts, monitor cash flow and maintaining good credit score, preserving health	10

PRACTICAL		
I	• Identify income, expenditure and budget planning for Different income groups.	20
II	• Knowledge of e-banking. • Calculation of income tax.	20
III	• Outreach program on insurance -Life/health field consumers.	20

Texts / References	1. Patni. M., (2015), Ergonomics, Star Publications, 1st Edition, ISBN-9789381246511. 2. Shrilakshmi,B., Nutrition Science, New Age Publishers Pvt. Ltd, 6th Edition, ISBN-9789386418883.
Learning Outcomes	• Understandings of concept of expenses, income, budget etc. • Learning of financial security, goal and importance of insurance • Understanding of budget, calculation of tax, e- banking procedures and life-insurance and its need.

Course Title	**Interior Designing and Landscaping ((HSCMJ826 and HSCMJ827)**
Category of Course[113]	Major
Credits[114]& Hours of Teaching	

	Theory	Practical	Cumulative
Credits	3	1	**04**
Hours of Teaching (Total)	45	30	**75**

Course Objectives	• To know the fundaments of interior designing, uses of colours and design composition • To understand the need, scope, advantages of landscaping • To know about the landscaping trees. • To know about the rooms-its accessories, designing of terrace and garden and field experience of landscape garden.

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	• Importance of interior design and the importance of good taste. • History of Interior Design. • Objectives of Interior Design and furnishing. • **Colour-** Uses and application of colours. • Uses of colour for residential and commercial purposes. • **Basics of design composition-** Building materials, Sustainable building materials and building services. • Types of walls, floorings and ceiling finishings. • Accessories and their use in interior design.	20
II	**Landscaping**	15

[113] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[114] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	● Meaning, importance and scope of landscaping, History of gardening in India. Principals and elements of landscaping.	
III	● Landscaping for different purposes. ● Garden features and advantages. ● Different plant species for landscaping annuals, trees, shrubs, climbers and their uses. ● Bonsai-types and importance	10

PRACTICAL		
I	Study of different accessories for different rooms.	05
II	Room arrangement for different activities(Residential/Commercial)	10
III	• Designing of terrace /front garden. • Visit to landscape garden	15

Texts / References	1. Rao, M. P. (2020),Interior Design: Principles and Practice, Standard Publishers and Distributors pvt.ltd., ISBN-978-8180141560. 2. Shankaraswamy, J., &Neelavati, R. (2022), Landscaping: an introduction 3. Shrubs in landscaping , Narendra Publishing House. 4. Trees in landscaping , Narendra Publishing House. 5. Palms in landscaping,Narendra Publishing House.
Learning Outcomes	• Understanding of basics of interior design, accessories used in it, concept of colour etc. • Learning of landscaping, it's uses in interior designing • Understanding of arrangement of rooms, front garden designing and landscape garden.

Course Title	**Advertising and Labelling information (HSCMJ828)**
Category of Course[115]	Major

Credits[116] & Hours of Teaching

	Theory	Practical	Cumulative
Credits	3	-	3
Hours of Teaching (Total)	45	-	45

Course Objectives

- To know the basics of advertising- its techniques, script writing etc.
- To gain insights of media, labelling information and standard
- To understand the preparation of labels for different items.

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	Advertising - Meaning, types, Importance and Advertisement appeal.	5
II	Evaluation of advertising effectiveness. Techniques of advertising - Media planning, advertising code, choosing content and advertising Research.	5
III	Script - Writing for advertisement using different Audiovisual methods. Print media and video media.	15

[115] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[116] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

IV	Labeling information - Meaning, types and Importance. Labeling standards in India.	10
V	Preparation of labels for different items - Food Items, fabric and electric items	10

Texts / References	1. वैज्ञानिकदृष्टिकोणएवंसिद्धांत, नरेंद्रसिंहयादव,राजस्थानहिंदीग्रंथअकादमी 2. Juan carlos Gaaquez- Abad, franciso J. Martinez- Lopez, Katrijn Gielens (Ed)- (2023). Advances in National brand and private label marketing, Springer 3. Wiedeeman, J-Ed- (2011). Labels and Packaging design: the power of branding at the point S purchase. Taschen
Learning Outcomes	Understanding the meaning, importance and types of advertisement, techniques of advertising, script writing and label preparation.

BANARAS HINDU UNIVERSITY

(Detailed Syllabus of different Courses under NEP 2020)

Department of Home Science

Faculty of Science

Semester -7

4- Year U.G Degree (Honours with Research)

****Students should choose any one paper according to their selected branch in 7th and 8th Semester**

Foods and Nutrition

<table>
<tr><td>Course Title</td><td colspan="4">Research Methodology and Scientific Writing (HSCMJ7R1)</td></tr>
<tr><td>Category of Course[117]</td><td colspan="4">Major</td></tr>
<tr><td>Credits[118]& Hours of Teaching</td><td colspan="4"><table>
<tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr>
<tr><td>Credits</td><td>4</td><td>NA</td><td>4</td></tr>
<tr><td>Hours of Teaching (Total)</td><td>60</td><td>NA</td><td>60</td></tr>
</table></td></tr>
<tr><td>Course Objectives</td><td colspan="4">To address the issue in selecting a research problem.
To understand the tools and techniques needed for completing research
To learn about writing scientifically</td></tr>
<tr><td colspan="5">Course Content</td></tr>
</table>

[117] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[118] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

Units	Course Content	Hr. of Teaching
I	**RESEARCH METHODS** **Science, scientific methods, scientific approach: Role** of statistics and research in Home Science discipline: Objectives of research: Explanation, control and prediction.	10
II	**Types of Research:** Historical, survey, experimental, case study, social research, participative research. Definition and Identification of a Research Problem, Selection of research problem, Justification, Theory, hypothesis, basic assumptions, limitations and delimitations of the problem. Types of variables	10
III	**Theory of probability:** Population and sample, Probability sampling: systematic random sampling, two stages and multi stage sampling, cluster sampling, Non-Probability sampling: purposive, quota and volunteer sampling/snowball sampling. Basic Principles of Research Design and hypothesises: Purposes of research design; Fundamental, applied and action exploratory and descriptive experimental, survey and case study, ex-post facto, Longitudinal and cross sectional	15
IV	**Qualitative Research Methods:** Theory and design in qualitative research, Definition and types of qualitative research, Methods and techniques of data collection, Informal group discussions, Interviews; Key informants, in-depth interviews, Observations	15
V	**Critical analysis of research.**	10

Texts / References	1. Bandarkar, P.L. and Wilkinson, T.S. (200): Methodology and Techniques of Social Research, Himalaya Publishing House, Mimbai. 2. Bhatnagar, G.L. (1990): Research Methods and Measurements in Behavioural and Soxial Sciences, Agri. Cole Publishing Academy, New Delhi. 3. Dooley, D. (1995): Strategies for interpreting Qualitative Data; Saga Publications, Claifornia. 4. Gay, L.R. (1981, 2nd Ed.): Educational Research, Charles, E. Merill, Columbus, Ohio.

	5. Long, J.S. (Ed.) (1988): Common Problems Proper Solutions: Avoiding Errors in Quantitative Research Beverly Hills, Sage Publications, California. 6. Mukherjee, R. (1989): The Quality of lIfe: Valuation in Social Research, Saga Publications, New Delhi. 7. Stranss, A. and Corbin, J. (1990): Basis of Qualitative Research: Grounded Theory Procedures and Techniques, Saga Publications, California.
Learning Outcomes	Understanding of statistical techniques, learning of various statistical test used to approve hypotheses and uses of computer in research

Course Title	**Food Safety and Microbiology (HSCMJ7R2 and HSCMJ7R3)**
Category of Course[119]	**Major**

Credits[120]& Hours of Teaching

	Theory	Practical	Cumulative
Credits	3	2	**05**
Hours of Teaching (Total)	45	60	**105**

Course Objectives

- To provide fundamental concept of the microorganism associated with food and their characteristics.
- To provide the concept of preservation and microbiological safety in various food operations.

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	**Introduction to Food Microbiology** • Definition and scope of Microbiology • History of Microorganism in food- Food Preservation, spoilage Infections and Legislations	5
II	**Microorganism in Food** • **Taxonomy, Role and Significance of microorganisms in food**-Food Borne Bacteria, Food Borne Moulds, Food Borne Yeasts, Viruses and Parasite • **Factors affecting growth of Microorganism**–Intrinsic Parameters, Extrinsic Parameters, Bacterial Growth Curve • **Food Borne Diseases: Origin and symptoms -** Types- Food Borne Infections, Intoxications and Toxic infection	10
III	**Cultivation of Microorganism**	15

[119] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[120] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	Repair, detection and sampling of microorganism, Methods of sampling and detection- a. Conventional Methods of isolation-Pure culture methods (Standard Plate Count), Membrane filter technique, Most probable number, Direct microscopic count, electronic counter, dye reduction test b. Rapid Methods of isolation-Physical Methods: Biosensors, Flow Cytometry, Microcalorimetry. Biological/ Immunological Methods: Fluorescent Antibody, Radioimmunoassay, ELISA, Gel Diffusion. Molecular Genetic Methods- Polymerase Chain Reaction, Chemical Methods: Thermo-stable Nuclease, Adenosine Triphosphate Measurement, Bioassay	
IV	**Food Safety and Quality Control** **1. Concept of Food Safety Management, GHP and GMP** 2. HACCP. ISO 22000 3. Food Laws, Regulations and Standards **Control of Microorganism in Foods:** Principles and methods of preservation, Physical Methods of Food Preservation- Dehydration, Freezing, Cool Storage, Heat Treatment, Irradiation, Chemical Methods, Biopreservatives esp. Bacteriocins, Introduction to Hurdle concept and Non Thermal Methods	15

Practical		
Units	**Course Content**	**Hr. of Teaching**
I	• Understanding Morphology and Structural Features of Various Microorganism: Preparing different types of media. • Learning of different instruments used in microbiology laboratory	20

II	• Staining of bacteria: Gram's Staining, acid-fast spore, capsule and Flagellar Staining, Motility of bacteria, Staining of yeast and molds. • HACCP plan for a food process	20
III	• Microbiological analysis for- Water (Most Probable Number), Milk (Methylene Blue Reduction Test), Curd and probiotic count, adulteration test for microorganism detection.	20

Texts / References	1. Jay, B. J., Loessner,J. M., Golden, A. D.Modern Food Microbiology.SeventhEdition.Food Science Text Series. 2. Frazier, W.C.&Westhoff, D.C.(2014). Food Microbiology. Fifth Edition. TMH Publication, New Delhi. 3. Garbutt, J. (1997). Essentials of Food Microbiology. Arnold London. 4. Mathur, P. (2018). Food Safety and Quality Control. 1st Edition. Orient Blackswan Private Ltd. India. 5. Ravishashankar, R. &Jamuna, B. (2015). MicrobialFood Safety and Food Preservation. CRC Press, Boca Raton.
Learning Outcomes	• Develop understanding of important genera of microorganism associated with food and their characteristics, their growth pattern and parameters. • Develop learning about various preservation and control techniques in various food operations.

Course Title	**Applied Food Science (HSCMJ7R4 and HSCMJ7R5)**
Category of Course[121]	**Major**

Credits[122]& Hours of Teaching

	Theory (T)	Practical (P)	Cumulative
Credits	3	2	**05**
Hours of Teaching (Total)	45	60	**105**

Course Objectives

- The goal of the course is to give students a systematic understanding of the chemistry of food ingredients such as proteins, fats, and carbohydrates as well as pigments.
- Students will also gain insight into the additives that are important to the processed food industry.

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	**Properties of food**- physical, chemical and functional, Protein Structure and properties, factors affecting properties and its interaction with other food constituents- Denaturation, Coagulation.	05
II	**Carbohydrate**: Structure and properties, factors affecting properties and its interaction with other food **a. Sugar-** Structure and properties, their application in food system, crystallization, caramelization, Maillard reaction and its industrial application, factors affecting properties and its interaction with other food constituents- Sweetness, preservation, appearance, freezing point, fermentation **b. Starches-** Structure and properties, factors affecting properties and its interaction with other food constituents- Starch gelatinization, Dextrinization, Functional properties- Thickening property, binding	15

[121] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[122] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	properties. Introduction to polysaccharides, Resistant starch, Genetically Modified Starch, Non-starch polysaccharide, dietary fibre	
III	• **Lipids**: Structure and properties, factors affecting properties and its interaction with other food constituents- Rancidity, emulsion, Role of Food lipids in flavour.	10
IV	• **Food pigments, colorants and additives:** Pigments in animal and plant tissues, Food colours; Types and properties, regulatory aspects, safety issues.	10
V	• **Food adulteration**: Its types and contaminant & Detection **Beverages:** Harvesting, processing and by-products; Coffee, tea, cocoa, alcoholic beverages.	05
PRACTICAL		
I.	• Preparation and preservation of Jam and Jellies and pickles • Drying and dehydration of fruits and vegetables	20
II	• Spray drying of Milk • Preparation of fermented products • Sensory evaluation of food items	20
III	• Identification of food packaging materials • Determination of quality of eggs • Quality analysis of water from different sources	20

Texts / References	1. B. Srilakshmi - Food Science, New Age International Publishers, 8th edition 2. Shakuntala, M. N., Shadaksharaswamy, M. (1998). Foods, Facts and principles, new age international publishers, New Delhi. 3. BIS standards for food products and analysis manual. 4. Manuals of methods of analysis of various food products, FSSAI, 2016
Learning Outcomes	• To provide learning of chemistry of components like proteins, carbohydrates and lipids. • Students will learn about food additives that are relevant to processed food industry.

Course Title	**Social and health issues in Society (HSCMJ7R6)**
Category of Course[123]	Major

Credits[124]& Hour of Teaching

	Theory	Practical	Cumulative
Credits	2	--	2
Hour of Teaching (Total)	30	--	30

Course Objectives

- To cultivate a positive outlook on health and well-being among students
- To increase students understanding of National development policies of Govt. and Non-Govt. organization

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	Health & well-being • Mental health & wellbeing • Physical • Emotional • Social	05
II	Policies to improve health in different age group by Government & Non - governmental organization with recent trends • Health care system in India • Disabilities	05
III	Policies regarding societal issues in different stages of life of human by Government & Non - governmental organization	10

[123] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[124] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	• Child protection acts • Gender Issues- Women empowerment, Gender Gap, Triple Talaq , Sexual Harassment at Workplace • Poverty related issues	
IV	Role of traditional media and modern media in development communication- • Communication technology • Gender in extension (Issues & prospects)	10

Texts / References	1. Park, K. (2019). Preventive and social medicine.Banarsidas Bhanot Publishers. Edition- 27, ISBN-9789382219194. 2. Dhama,O.P., &Bhatnagar,O.P.(1987). Extension and communication for development. Oxford & IBH Publishing Co .Edition- 2nd,ISBN – 9786459990314. 3. Ahuja,R. (2000). Bhartiya Samaj. Rawat Publications. Edition- 2007, ISBN -8170336392. 4. Srivastava,D.N. AsamanyaManovigyan. Sahitya Prakashan Agra. Edition- 13th.India YearBook (2024) Publications Division, Ministry of Information and Broadcasting, Government of India.
Learning Outcomes	• Students will develop skills to critically evaluate and analyze health and well-being policies, understanding their effectiveness for various age groups and disabilities. • They will gain insights into the impact of legal frameworks like the Child Protection Act and societal policies on development and integration. • Students will assess the roles of traditional and modern media in health communication and explore how gender issues influence extension services, proposing strategies for improved gender equity.

Course Title	**Research Methodology and Scientific Writing (HSCMN7R1)**
Category of Course[125]	Minor

Credits[126]& Hours of Teaching

	Theory	Practical	Cumulative
Credits	4	NA	4
Hours of Teaching (Total)	60	NA	60

Course Objectives

- To address the issue in selecting a research problem.
- To understand the tools and techniques needed for completing research
- To learn about writing scientifically

Course Content

Units	Course Content	Hr. of Teaching
I	**RESEARCH METHODS** **Science, scientific methods, scientific approach: Role** of statistics and research in Home Science discipline: Objectives of research: Explanation, control and prediction.	10
II	**Types of Research:** Historical, survey, experimental, case study, social research, participative research. Definition and Identification of a Research Problem, Selection of research problem, Justification, Theory, hypothesis, basic assumptions, limitations and delimitations of the problem. Types of variables	10
III	**Theory of probability:** Population and sample, Probability sampling: systematic random sampling, two stages and multi stage sampling, cluster sampling, Non-Probability sampling: purposive, quota and volunteer sampling/snowball sampling. Basic Principles	15

[125] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[126] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	of Research Design and hypothesises: Purposes of research design; Fundamental, applied and action exploratory and descriptive experimental, survey and case study, ex-post facto, Longitudinal and cross sectional	
IV	**Qualitative Research Methods:** Theory and design in qualitative research, Definition and types of qualitative research, Methods and techniques of data collection, Informal group discussions, Interviews; Key informants, in-depth interviews, Observations	15
V	**Critical analysis of research.**	10

Texts / References	1. Bandarkar, P.L. and Wilkinson, T.S. (200): Methodology and Techniques of Social Research, Himalaya Publishing House, Mimbai. 2. Bhatnagar, G.L. (1990): Research Methods and Measurements in Behavioural and Soxial Sciences, Agri. Cole Publishing Academy, New Delhi. 3. Dooley, D. (1995): Strategies for interpreting Qualitative Data; Saga Publications, Claifornia. 4. Gay, L.R. (1981, 2nd Ed.): Educational Research, Charles, E. Merill, Columbus, Ohio. 5. Long, J.S. (Ed.) (1988): Common Problems Proper Solutions: Avoiding Errors in Quantitative Research Beverly Hills, Sage Publications, California. 6. Mukherjee, R. (1989): The Quality of lIfe: Valuation in Social Research, Saga Publications, New Delhi. 7. Stranss, A. and Corbin, J. (1990): Basis of Qualitative Research: Grounded Theory Procedures and Techniques, Saga Publications, California.
Learning Outcomes	Understanding of statistical techniques, learning of various statistical test used to approve hypotheses and uses of computer in research

Extension and Communication

<table>
<tr><td>Course Title</td><td colspan="4">Participatory Programme Management (HSCMJ7R7 and HSCMJ7R8)</td></tr>
<tr><td>Category of Course[127]</td><td colspan="4">Major</td></tr>
<tr><td>Credits[128]& Hours of Teaching</td><td colspan="4"><table><tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr><tr><td>Credits</td><td>3</td><td>2</td><td>5</td></tr><tr><td>Hours of Teaching (Total)</td><td>45</td><td>60</td><td>105</td></tr></table></td></tr>
<tr><td>Course Objectives</td><td colspan="4">• To understand the key concepts and skills in effective programme designing and evaluation
• To demonstrate the ability to develop, implement, and constructively evaluate program and evaluation plans.
• To develop tools for monitoring and evaluation of extension programmes
• To develop skill in designing an extension programme (Home Science Based) to bring change in knowledge, skill and attitude</td></tr>
<tr><td>Course Content</td><td colspan="4"></td></tr>
<tr><td colspan="5"><table><tr><th>Units</th><th>Course Content</th><th>Hr. of Teaching</th></tr><tr><td>I</td><td>• Overview to PPM - Concept, Meaning and Importance.
• Types of Participation in Development.
• Advantages and disadvantages of participation by different stakeholders
• Programme designing in extension– Meaning of programme planning, principles of programme building process, steps</td><td>13</td></tr></table></td></tr>
</table>

[127] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[128] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	involved in programme building process, programme development cycle, planning models and frameworks, planning and developing teaching methods, precautions used in programme building	
II	• Role of Government and Non-Profit Techniques of participatory planning - RRA, PRA, PLA and their application in extension. • Approaches of participatory planning - cooperative, democratic, bottom up and down. • Situation analysis, Needs and Objectives– Types of needs, methods of identifying needs • Objectives- types, levels and characteristics	8
III	• Participatory planning – Engaging the community and other stakeholders, organisations and committees • Role of officials, non-officials, groups and agencies in programme building process for extension work. • Utilisation of local infrastructure	7
IV	• Programme budgeting, marketing and strategic planning • Sources of budget • Management of budget, • Marketing strategies, steps.	8
V	• Monitoring and Evaluations–Approaches to monitoring, principles, indicators • Evaluation -meaning, purpose, elements, steps, criteria for evaluation, types of evaluation, methods of evaluation, Challenges and issues in monitoring and evaluation • Ethical issues in monitoring and evaluation. • Documentation and follow up – Need for documentation, methods, meaning and need for follow up, methods	9

PRACTICAL		
I	○ Identification of the background information of the community ○ Identification of community needs using participatory methods (any four) a) Social mapping b) Transect walk c) Focus group discussion d) Matrix raking e) Seasonal calendar f) Chapati diagram	20
II	○ Planning a two/three days programme on one of the selected needs ○ Collection of subject matter /content for the designed programme and their presentation ○ Preparation of teaching aids ○ Implementation of the planned programme	28
III	○ Evaluation of the programme (Designing questionnaire / tool for pre post test ○ Report writing	12

Texts / References

1. Sharma,FL, Shri Ram, (2013)Extension Teaching Methods,Agrotech Publishing company, Udaipur
2. Dangi, KL and Santhosh Devi Samota, (2013) Agrotech Publishing Academy, Udaipur
3. Mikkelsen, Britha, (2002), Methods for development work and research.New Delhi:Sage Publications
4. Dale R, (2004) Evaluating Development programmes and projects.New Delhi: Sage Publications
5. Reddy,A(1998) Extension education,Sreelakshmipress,Bapatala

<table>
<tr><td colspan="2">6. Gopal lal Jain,(1997) Rural development,Mangaldeep publications,Jaipur
7. Subah Singh Yadav,Ramkumar, Rural Development and poverty alleviation,Pinter Publishers,Jaipur
8. Misganaw, Seraw,(2011) Extension programme planning and evaluation.LAP Lambert Academic Publishing,</td></tr>
<tr><td>Learning Outcomes</td><td>Students will be able to -
To demonstrate the ability to develop, implement and constructively evaluate programme and evaluation plans
To invent tools for monitoring and evaluation of extension programmes
To examine the strategies and approaches in monitoring and evaluating the extension programme</td></tr>
</table>

Course Title	**Development Communication (HSCMJ7R9 and HSCMJ7R10)**
Category of Course[129]	Major
Credits[130]& Hours of Teaching	

	Theory	Practical	Cumulative
Credits	3	2	5
Hours of Teaching (Total)	45	60	105

Course Objectives	• To familiarize students with global perspective of development communication issues • To impart analytical skills with regard to the process of development communication • To understand the role and use of media in attaining sustainable development goals. • To analyze the indicators of development • To design media for development

Course Content

Units	Course Content	Hr. of Teaching
I	**Concept : Development and Communication** Communication process – concept, elements and their characteristics, communication competence and empathy, communication effectiveness and credibility, feedback in communication, social networks , Barriers in communication, Message – Meaning, dimensions of a message, characteristics of a good message, Message treatment and effectiveness, distortion of message. Concept of Development as a goal, development	10

[129] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[130] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	as a process, Indicators of Development-Human, development Index, gender empowerment measure, human poverty index etc.	
II	**Development Communication** Definition, prerequisites of development communication, communication links in development communication, development effort, role and significance of development communication, communication links in development, Models of development communication; independent model, Dependency model, Basic needs model, New paradigm of development, approaches to development communication; Diffusion and Extension approach to development communication, planned Strategies for development communication.	10
III	**National and international perspectives of development communication** National and international perspectives; Evolution of development communication concept; Government and non-government initiatives; Government and nongovernment organisations - FAO, UNDP, WHO, UNICEF, CARE and strategies. National projects of development communication - SITE, Jhabnaetc, case studies on development communication	10
IV	**Media and Development Communication** Understanding the role of traditional and modern media in development communication, Development Journalism- roles and responsibilities of a development reporter, ethics in, reporting, specialized skills required and issues in development reporting News reporting: definition of news, ingredients and qualities of news, news value, types of news reports, structure of news, ICTs: scope in development communication	5
V	**Participatory development communication** Participatory approaches in development communication, planning a Development Communication Campaign, Implementation of Development Communication Project, role of NGOs in development communication, need for information and communication policy for development, Development support communication, Challenges in a	10

	participatory development communication, participatory communication and civil society. **Research perspectives of development communication** Emerging issues; Measurable and variables of development communication; Existing research projects; Research lag and supporting organizations, Use of Information technology for development communication research.	
PRACTICAL		
I	• Analysis of development indicators - national and international perspectives • Critical analysis of selected development initiatives	20
II	• Analysis of media for development communication • Designing media for development communication	20
III	• Evaluate strategies used by development agencies for implementation of development programmes	20

Texts / References	1. Mody, Bella (1991), Designing messages for development communication- An audience participation based approach, Sage, Delhi. 2. Melkote, R. Srinivas and Steeves, H. Leslie (2015), Communication for Development in the third world.Theory and practice of empowerment, Sage, New Delhi. 3. Narula, Uma (2014). Handbook of Communication- Models, Perspectives, Strategies, Atlantic, New Delhi. 4. Sen, Amartya (2000). Development as Freedom, Oxford University Press, New Delhi. 5. *Mefalopulos*, *Paolo*. *Development communication sourcebook* : *broadening the boundaries of communication*/. *Paolo Mefalopulos* 6. *Development Communication- A resourse manual fotteaching , Asian Mass Communication Research Centre 39 Newton Road , Singapore.* 7. Servaes, J. (Ed.) (2008). Communication for Development and Social Change, Sage, New Delhi. Sinha,

	8. Dipankar. (2013), Development Communication- Contexts for the twenty-first century, Orient Black Swan, New Delhi
Learning Outcomes	• Understand the process of development communication in various national and international organizations • Raise awareness among students about global and local development challenges. • Plan and disseminate communication media on development issues • Encourage ethical and socially responsible communication policies. • Students will learn how to create clear and impactful messages for development projects. • Students will understand how to use different media, like radio and social media, to spread important information.

Clothing and Textiles

<table>
<tr><td>Course Title</td><td>Textile Testing and Quality Control (HSCMJ7R11 and HSCMJ7R12)</td></tr>
<tr><td>Category of Course[131]</td><td>Major</td></tr>
<tr><td>Credits[132]& Hours of Teaching</td><td>
<table>
<tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr>
<tr><td>Credits</td><td>3</td><td>2</td><td>5</td></tr>
<tr><td>Hours of Teaching (Total)</td><td>45</td><td>60</td><td>105</td></tr>
</table>
</td></tr>
<tr><td>Course Objectives</td><td>

To educate the students about the techniques used to analyse textile fibre, yarns and fabrics for end-use performance.
To make the student help in acquiring knowledge and understanding of various structural properties of textiles and relate them to end use fabric performance and product.
To familiarize the students about the different testing equipment, their underlying principles, the international accepted standards, test methods and language of Measurement.
To expedite the students to analyse and interpret the results and predict the general textile testing.

</td></tr>
</table>

Units	**Course Content**	**Hr. of Teaching**
I	Introduction to Textile Testing; Concept and Scope, Application areas, Use of Statistics in Data Management, Sampling Procedures	05
II	Total Quality Management (TQM) approach in the field of Textiles & Clothing	05

[131] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[132] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

III	Standardization; Standards for Fabric Performance, Organizations for Standardization (National and International), Quality Control of Textile products, Quality Standards as applicable to various types of Textiles (Garments, yardage, knits, woven, carpets, processing, dyeing)	10
IV	Properties of textiles at different stages: processing and their principles of measurement • Fibres – length, fineness, evenness • Yarn – strength, evenness, openness, load, elongation, crimp • Fabrics – strength, elongation, shrinkage, thickness, cover, air permeability, crease recovery, weight, comfort, stiffness, flammability, repellency, colour fastness • Garment Finishing – colour fastness, shrinkage • Concept of Fabric faults as related to stages of manufacture and the remedies.	15
V	Concept of Statistical Quality Control; Sampling, Test methods used, Tolerance limits, CV%	10

PRACTICAL

Units	**Course Content**	**Hr. of Teaching**
I	Physical Testing of Textiles using appropriate standardized procedures • Fibres – length, diameter, fineness • Yarn – count, heaviness, twist, crimp, strength • Fabric – thread count, thickness, air porosity, abrasion, strength (Tensile, Tear, Bursting) water vapour permeability, cover, stiffness, drapability, crease recovery, pilling, abrasion	10
II	Chemical Testing • Identification of fibres • Binary Fabrics, blend composition • Shrinkage, water, oil repellency • Sensitivity to various reagents	20

	• Colour fastness	
III	Mechanical Testing • Seam Strength • Identification of fabric weave • Threat count	15
IV	Inspection of Final Garment	15

Texts / References	1. Booth, J.E. (1968) *Principles of Textile Testing* (3rd ed.) London: Newnes-Butterworth 2. Collier, B. J., & Epps, H. H. (1998). *Textile testing and analysis*. Upper Saddle River, NJ: Prentice HallSkinkle, J. H. (1949). *Textile testing*. New York: Chemical Publishing Co., Inc. 3. Grover, E. B., Grover, E. B., & Hamby, D. S. (2011). *Handbook of textile testing and quality control*. Wiley India Pvt Ltd 4. Bureau of Indian Standards. (1986) Manual of BIS and ISI standards related to textiles in India. **https://www.bis.gov.in/ministry-of-textile** **5.** American Society for Testing and Materials (1898). Annual book of ASTM standards. ASTM International. https://www.astm.org/products-services/standards-and-publications/standards/textile-standards.html
Learning Outcomes	By the end of the course, students will be able to: • Learn different techniques involved in fibre, yarn and fabric preparation • Understand about the fabric performances • Acquire efficiency over different testing methods of textiles.

Course Title	**Draping, Pattern Making and Grading (HSCMJ7R13 and HSCMJ7R14)**
Category of Course[133]	Major
Credits[134]& Hour of Teaching	

	Theory	Practical	Cumulative
Credits	3	2	5
Hour of Teaching (Total)	45	60	105

Course Objectives	• To enable the students to make pattern from sketch/photograph • To enable the students to obtain perfect fit and harmony between the fabric and design of the garment • To develop an understanding of a sample pattern using industrial sample room procedure • To develop an understanding of the use of design elements in the process of range development

Units	**Course Content**	**Hr. of Teaching**
I	Introduction to draping and silhouette of the individual- Dress form, Elements of fabric – woven, knitted.	05
II	Development of the Ladies and Kids block and garments by Flat pattern and draping.	05
III	Development of pattern with variation in • One-piece dresses • Two-piece dresses • Dart less dresses	10

[133] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[134] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	(Incorporating various collars, sleeves, yokes, necklines, pockets and plackets etc.)	
IV	Draping of bodice block and skirt block and their variation, Draping of asymmetrical designs and preparing patterns. Drafting	10
V	Pattern markings, Pattern envelope and Guide sheet.	15

PRACTICAL

I	Developing draping Pattern for garments Introduction to grading terminology and methodology; track or stack method, Grading standard size blocks to various sizes	18
II	Procedure for grading blocks to various sizes • Children – bodice block, sleeve block, skirt & shorts block • Women – bodice block, sleeve block, skirt & short block	20
III	Preparation of Portfolio • Two patterns with complete sets of markings • Designing and preparing pattern envelope (front and back) • Markers for three different fabric width and designs (stripes, plaids) • Guide sheet • Three accompanying pattern promotional items.	22

Texts / References	1. Crawform, C.A. (2018). The Art of Fashion Draping (5th ed.). New York: Bloomsbury Academic. 2. Stringer, P.C. (1992). Pattern Drafting for Dressmaking (1st ed.). B T Batsford Ltd. 3. Hillhouse, M.S. and Mansfield, E.A. (1948). Dress Design, Draping and Flat Pattern Making (1st ed.). London: Houghton Mifflin Company. 4. Shelden, M.G. (1974). Design through Draping (2nd ed.) USA: Burgers Publishing Company. 5. Brockman, H.L. (1965). Theory of Fashion Design (1st ed.). New York: John Wiley and Sons.

	6. Strickland, G. (1956). A Tailoring Manual (3rd ed.). New York: Macmillan Company. 7. Pepin H. (1942). Modern Pattern Design (2nd ed.). New York: Funk & Wagnalls. 8. Cooklin, G., Hayes, S. G., McLoughlin, J., & Fairclough, D. (2011). Garment Technology for Fashion Designers (2nd ed.). John Wiley & Sons. 9. Ireland. P.J. (1996), *Fashion Design Illustration: Men* (1st ed.). Batsford Ltd.
Learning Outcomes	By the end of the course, students will develop understanding about: • The principles of draping and get to know about the various tools and equipment used for draping. • The cutting and sketching of pattern, draping procedure of dresses, sample preparation and grading of the material.

Human Development and Family Studies

Course Title	**Gender issues in Human Development and Relationships (HSCMJ7R15 and HSCMJ7R16)**
Category of Course[135]	Major

Credits[136]& Hours of Teaching

	Theory	Practical	Cumulative
Credits	3	2	5
Hours of Teaching (Total)	45	60	105

Course Objectives

- To orient the students regarding the gender issues in human development and family relationships.
- To impart experiences regarding gender issues, family practices and biases prevalent in Indian Society.
- To understand about gender analysis, orientation and role of mass media,
- To familiarize with NGO, and other organization

Course Content

Units	Course Content	Hr. of Teaching
I	**Gender perspectives and theories** Concept of gender- biological and socio-cultural connotations.Historical perspectives. Gender differences in human development.Gender theories- Gender Orientationtheory of Sandra Bem. Gender Schema theory, theory of Ego Development andGender. Gender Stratification theory by Blumberg. Gender Identity Formation theory.	10
II	**Gender discrimination, gap and parity**	10

[135] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[136] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	Gender equality and development. Gender inequalities in human development–dimensions, causes and consequences. Gender discrimination indicators- global gender gaps. Gender Development Index, Global Gender Gap Index and Gender Parity Index. Demographic challenges to family ecology- gender role socialization.	
III	**Gender violence and empowerment** Gender violence- dowry harassment and deaths, suicides, prostitution, sexual harassment and exploitation and prevention. Family violence, amniocentesis, female feticide, infanticide, eve teasing. Gender empowerment strategies- working towards family solidarity and social well-being. Gender main streaming- concept, policy of United Nations, objectives, requirements and principles. Empowering lives of women by controlling – patriarchy system, women's sexuality, fertility, labour, lack of visibility. Gender budgeting.	15
IV	**Changing trends in status of women** Status of women in India. Various plans and policies designed for achieving gender equality. Changing trends in gender role orientation- early civilization, pre independence, post independent India, contemporary times, socio economic impact on the family and society, cultural impact on the family. Gender role portrayal in mass media. Gender stereotyping in schools. Gender issues at workplace.	10
PRACTICAL		
I	Gender analysis of mass media: Print media and E-media and report writing Study of adopted socialization practices for children of both genders and report writing	20
II	Case studies of three generations on dynamics of gender orientation, Gender roles and responsibilities, report presentation and discussion Views of adolescents on their gender role orientation- designing questions survey through questionnaire, report presentation	20
III	Case studies on changing trends of roles and responsibilities of women and men report writing	20

	Visits to women welfare Govt. organizations/ agencies/ NGOs, presentation of report and class discussion	

Texts / References	1. Banddarage A. 1997. Women Population and Global Crisis - A Political and Economical Analysis.Zed books, London. 2. Barnett RC, Biner L and Baruch GK. 1987. Gender Stress. The Free Press, New York. 3. Chanana K. 1989. Gender and the Household Domain.Sage Publications, New Delhi. 4. apadia S and Gala J. 2015. Gender Across Cultures: Sex and Socialization in Childhood. Sage Publications, New Delhi. 5. Kumar CS. 2017. Gender Socialization and The Making of Gender in The Indian Context. Sage Publications. New Delhi. 6. Menon L. 1997. Gender Issues and Social Dynamics.Kanishka Publishers and Distributors, New Delhi. 7. Sudha DK. 2000. Gender Roles. A.P.H. Publishing Corporation, New Delhi.
Learning Outcomes	• Learning of gender roles, orientation and issues • Understanding of role of several organizations

Course Title	**Family Ecology, Cultural Diversity and Therapy (HSCMJ7R17 and HSCMJ7R18)**
Category of Course[137]	Major
Credits[138]& Hours of Teaching	

	Theory	Practical	Cumulative
Credits	3	2	5
Hours of Teaching (Total)	45	60	105

Course Objectives

- To orient the students regarding family as an institution.
- To impart knowledge about family transitions and impact of social change and Development
- To sensitize the students, regarding the theories and issues pertaining to cultural difference in family studies.
- To orient the students regarding various methods and techniques of family therapy.
- To know about conflict resolution
- To learn role-playing
- To gain knowledge of Genogram construction

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	**Families in India and Family relationships** Families in India - Types of traditional and modern family structures based on different dimensions (Marriage type, nature of residence, nature of authority, nature of relations among the family members, nature of kin composition, single parent families, unrelated families	10

[137] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[138] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	etc.). Families in rural, tribal, and agrarian community – status of women, children, elderly, and men in these families. Family as a social system. Socialization within the family. Models of parenting. Parent child relationships. Family cohesion, conflict and family disorganization –impact on children. Effect of childbirth on marital life. Child abuse. Family interactions and delinquency. Improving family communication and interpersonal relations.	
II	**Family under transition, Family stressors and resilience** Family transitions. Change and continuity over life cycle. Impact of social change on family and changing family patterns in India. Religion and family. Family as an institution under stress. Family crisis. Poverty and children. Stressors and family relations - with special reference to family disruption, sickness, divorce, substance abuse and disability. Family's adaptation to stress. Family resilience and protective factors for promotion of family resilience Intergenerational family dynamics in management of family conflicts and negative patterns.	15
III	**Culture, family and diversities in family life and challenges** Culture- definition, components and characteristics of culture. Agents of cultural influences- school, family, community and other social groups. Cultural factors and impact on families. Elements of India's diverse culture – religion, philosophy, cuisine, language, fine arts, dance, music. Diversities in family life – ethnic, linguistic, regional, etc. Effect of urbanization, secularization, westernization, technological advancement, globalization and other such developments on families in general and agrarian in particular. Challenges before families across cultures. Legal provisions – emerging cultural trends. Research trends in cross-cultural family studies, methodological issues.	10
IV	**Family therapy – orientation, types and theoretical perspectives**	10

	Family Therapy – concept, need, significance, areas, scope, goals and application of marriage and family therapies. Evolution of family therapy. Early models and basic techniques of family therapy- group process and communications analysis. Theoretical developments in marital and family therapy. Approaches in family therapy - Social Learning approach, Psychoanalytic, Behavioural, Systems approach. Social Constructionism theory. Attachment theory. Classic schools of family therapy- Bowenian Family Systems therapy, Strategic, Structured, Communication and Experiential therapies, Psychodynamic Therapy, Cognitive- Behaviour family therapy and integrated family therapy. Contemporary marital therapies. Family therapy in the 21st century and its application to multicultural, single parent and disorganized families, solution focused therapy, narrative therapy and integrative models. Application of family therapy in depression, substance abuse, schizophrenia and eating disorders.	
PRACTICAL		
I	Conflict Resolution Role-plays - Create role-playing exercises that involve family conflicts and resolutions. Students can practice mediating conflicts and developing strategies for effective communication and resolution.	10
II	Comparative Analysis Project-Students choose two families—Both from different cultures. They analyze and compare aspects such as family roles, marriage customs, child-rearing practices, and conflict resolution strategies.	10
III	Role-Playing Difficult Scenarios-Create role-playing exercises involving challenging family scenarios, such as conflict resolution, crisis management, or working with resistant clients. Students can take on different roles, including therapist, client, and family members.	10
IV	Genogram Construction-Have students create genograms of a family of their choice (real or fictional), incorporating family relationships, patterns, and histories. Students can then analyze the genogram using different theoretical lenses	14

V	Cultural Competency Training-Conduct training sessions on cultural competence, focusing on how to address and incorporate cultural differences in family therapy. This could include case studies or role-plays that highlight cultural nuances Interviews with Families in Transition-Have students conduct interviews with families who have experienced or are experiencing significant transitions (e.g., migration, loss of a family member, economic changes). Students should focus on how these transitions have impacted family dynamics and resilience strategies used.	16

Texts / References	1. Ballard SM and Taylor AC. 2012. *Family Life Education with Diverse Populations*. Sage Publications, Los Angeles. 2. Brislin RW. 1990. *Applied Cross Cultural Psychology*. Sage Publications, New Delhi 3. Carson DK, Carson CK and Chowdhury A. 2007. *Indian Families at the Crossroads*. Gyan Publishing House, New Delhi. 4. Ratra A, Kaur P, Chhikara S, Varma T and Chawla P. 2006. *Marriage and Family- InDiverse and Changing Scenario.* Deep & Deep Publications Pvt. Ltd, New Delhi 5. Carr A. 2008. *Family Therapy – Concepts, Process and Practice.* 2nd Ed., John Wiley & Sons Ltd, Chichester. 6. Carson DK, Carson CK, Chowdhury A. 2007. *Indian Families at The Crossroads*. Gyan Publishing House, New Delhi.
Learning Outcomes	• Understanding of family as an institution, learning of family transition, cultural differences in family studies and techniques applied in family therapy. • Students can practice mediating conflicts and developing strategies for effective communication and resolution. • Students can then analyze the Genogram using different theoretical lenses

Course Title	**Consumer Product Safety and Legislation (HSCMJ7R19 and HSCMJ7R20)**
Category of Course[139]	Major

Credits[140]& Hours of Teaching

	Theory	Practical	Cumulative
Credits	3	2	**05**
Hours of Teaching (Total)	45	60	**105**

Course Objectives

- To know about the basics of consumer safety.
- To know about the consumer rights
- To aware about the different acts related to safety and liabilities, redressal and complaints of consumers
- To impart field related knowledge of consumer safety and product hazards and redressal.

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	•**Introduction-**Meaning, Definition, scope and Importance. •**Product related Hazards-**Physical hazards, Health hazards and Environment hazards. •**Production formation and Labeling** Brand Labels, Information Labels Descriptive Labels and grade labels. •**Product Liability** Meaning, Liability of manufacture trader, importance	15
II	**Provision of the product Safey &liabilities under various Laws-** •Consumer protection ACT, 2019(CPA) •Sale of goods ACT,1930(SGA) •Indian contract ACT, 1872 •Bureau of Indian Standard ACT,2016(BIS)	20

[139] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[140] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	•Consumer protection (Direct Selling) Rules,2021 •Consumer protection (Ecommerce Rules, 2020) •Food safety and standard Act,2006 (FASSAI) •Medical Devices Rules, (2017) •Motor Vehicle ACT,1940(MVA)	
III	**Mechanism of consumer redressal**-Time limit for complaint filling, Burden of proving fault/defect, Noncompliance with the regulatory standards, non-issue of adequate information on labels.	05
IV	**Redressal of consumer complaints**-Rectification of defects, return of price paid, compensation for the damage and mental agony, recall of the product.	05

PRACTICAL		
I	Project work on requirements of product safety education to consumers and its implementation.	20
II	Survey of consumer product-hazards and redressal.	20
III	Market analysis on different safety measures used in types of food products	20

Texts / References	1. Banddarage A. 1997. Women Population and Global Crisis - A Political and EconomicalAnalysis.Zed books, London. 2. Barnett RC, Biner L and Baruch GK. 1987. Gender Stress. The Free Press, New York. 3. Chanana K. 1989. Gender and the Household Domain.Sage Publications, New Delhi. 4. Kapadia S and Gala J. 2015. Gender Across Cultures: Sex and Socialization in Childhood. Sage Publications, New Delhi. 5. Kumar CS. 2017. Gender Socialization and The Making of Gender in The Indian Context. Sage Publications. New Delhi. 6. Menon L. 1997. Gender Issues and Social Dynamics.Kanishka Publishers and Distributors, New Delhi. 7. Sudha DK. 2000. Gender Roles. A.P.H. Publishing Corporation, New Delhi.

Learning Outcomes	• Understanding of consumer rights, safety, liabilities, redressal and complaints • Understanding of consumer safety education, product hazards and handling of problems.

Course Title	**Ergonomics and Appropriate Technology (HSCMJ7R21 and HSCMJ7R22)**
Category of Course[141]	Major
Credits[142]& Hours of Teaching	

	Theory	Practical	Cumulative
Credits	3	2	**05**
Hours of Teaching (Total)	45	60	**105**

Course Objectives	• To impart the fundamental knowledge, scope and importance of Ergonomics. • To provide the understandings of hazards, and tools of Ergonomics • To gain information about anthropometry and ergonomics • To gain knowledge of employee satisfaction in work environment • To understand the relationship between man, machine and environment

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	• **Definition and meaning of ergonomics.** • Scope of ergonomics - In work spaces, sports, leisure and healthy, safety. • **Types of ergonomics:** Physical ergonomics, Cognitive ergonomics, Organisation ergonomics	10
II	• **Ergonomics Hazards and injuries-** • Ergonomics hazards - Repetitive movements, Manual handling, Workplace design. Ergonomics Injuries - Repetitive stress injuries (RSI), Repetitive motion injuries (RMIs), Cumulative Trauma Disorder (CTDs)	10

[141] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[142] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

III	• **Importance of ergonomics -** Efficiency of work, Physical efficiency, Training efficiency. • **Benefits of ergonomics in workplace-** • Benefits regarding- production cost, Productivity, quality, employee engagement, safety culture.	10
IV	• **Ergonomic process and tools-** Physical assessment, Employee injury history, Benefits of ergonomics assessments • **Ergonomic assessment tools-** NIOSH Lifting equation (National institute for occupational safety and health), RULA (Rapid upper limb assessment), HAV (Hand arm vibration calculator)	10
V	• **Anthropometry-** Definition, meaning and types Elements of anthropometry-Height, weight, BMI (Body mass index) Body circumferences (waist, hip, limbs)	05
PRACTICAL		
I	Survey on finding out different sources of satisfaction of employee needs in the work environment.	30
II	To know the relationship between man, machine and environment.	15
III	Application of ergonomics to improve productivity and safety in different field	15

Texts / References	1. Patni. M., (2015), Ergonomics, Star Publications, 1st Edition, ISBN-9789381246511. 2. Shrilakshmi,B., Nutrition Science, New Age Publishers Pvt. Ltd, 6th Edition, ISBN-9789386418883.
Learning Outcomes	• Learning of fundaments of Ergonomics, different types of hazards, ergonomics in workplaces, assessment and anthropometry • Understanding of employee satisfaction in workplace, and the relationship between man, machine and environment

BANARAS HINDU UNIVERSITY

(Detailed Syllabus of different Courses under NEP 2020)

Department of Home Science

Faculty of Science

Semester -8

<table>
<tr><td>Course Title</td><td>Statistics and Computer Application (HSCMJ8R1 and HSCMJ8R2)</td></tr>
<tr><td>Category of Course[143]</td><td>Major</td></tr>
<tr><td>Credits[144]& Hours of Teaching</td><td>
<table>
<tr><td></td><td>Theory</td><td>Practical</td><td>Cumulative</td></tr>
<tr><td>Credits</td><td>3</td><td>1</td><td>4</td></tr>
<tr><td>Hours of Teaching (Total)</td><td>45</td><td>30</td><td>75</td></tr>
</table>
</td></tr>
<tr><td>Course Objectives</td><td>

To enable the students to develop knowledge in statistical tools and computer applications.
To understand the meaning of correlation, regression analysis for estimation and prediction purposes.
To discuss about the needs of various statistical test in Home Science discipline.
To teach the students how to organize, analyze, interpret and present the research data effectively.
To demonstrate the understanding of descriptive statistics by practical application of quantitative reasoning and data visualization
To demonstrate the use of correlation, regression analysis and association for estimation and prediction purposes.

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</table>

[143] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[144] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

Course Content

Units	Course Content	Hr. of Teaching
I	Introduction to Statistics - Definition, importance and scope of statistics, Descriptive and Inferential statistics. Data Management; Raw data, ungrouped frequency distribution, grouped frequency distribution, relative frequency table, cumulative frequency tables, how to convert raw data to the form of a frequency distribution, Graphs; histogram, frequency polygon, frequency curve, ogives. Scales of measurement-nominal, ordinal, interval and ratio scales. Coding of data.	8
II	Measures of central tendency; Definition, arithmetic mean; simple and weighted arithmetic mean, median, mode, geometric mean, their uses, merits and demerits, Partition values – quartiles and percentiles, Measures of dispersion; Definition, Absolute and relative measures of dispersion; range, variance, standard deviation, standard error, coefficient of variation.	10
III	Normal Distribution and its applications, Probability- classical approach, random variable- discrete and continuous random variables, Normal random variable, characteristics and properties of a normal curve, standard normal distribution, converting raw scores into standard normalized scores, standard normal curve.	6
IV	Correlation, Regression and Association of Attributes, Linear correlation- meaning and types of correlation, scatter diagram, Karl Pearson's coefficient of correlation, Spearman's Rank correlation coefficient, Linear Regression and Prediction: Concept of regression lines and regression equations, use of regression lines, role of coefficient of alienation in prediction.	8
V	Testing of Hypotheses; Definition, concepts of statistical hypothesis-simple and composite, null hypothesis, alternative hypothesis, test of	13

	a statistical hypothesis, critical region, Type I error, Type II error, significance level, confidence level. Parametric test- Testing of hypothesis concerning the mean of a population, testing the equality of means of two populations, Testing of hypothesis concerning the proportion of a population, testing the equality of proportions of two populations, chi-square test, F test, ANOVA concepts, ANOVA-single factor, Non parametric; chi-square test- testing goodness of fit, independence of attributes. Computer; importance and uses in research & statistics, Basic features of Microsoft word and Excel, Statistical analysis using Excel sheet and SPSS, tabular & graphical representation of data using computer, frequency distribution; Histogram, pie diagram, scatter diagram graphs using Excel.	
PRACTICAL		
I	Preparation of different types of tables with research data on computer. Graphical representation of research data; Different types of statistical graphs and their uses in statistics, Line graph; types and different uses, pie diagram, scatter diagram etc. Preparation of Frequency distribution curves and graphs- histogram, frequency polygon and ogives through computer.	10
II	Discussing and solving practical problems of Statistics -Related to central tendency; mean, median, mode, partition values, dispersion; standard deviation, mean deviation, concept of Skewness and kurtosis and their measures etc., and hypothesis and hypothesis testing; Correlation, chi-square, t-test, Z - test, ANOVA.	10
III	Basic Statistical tools in computer for research and data analysis; MS-word, MS- Excel, SPSS etc. Learn about SPSS software and Solving above given statistical problems using Excel sheet and SPSS.	10

Texts / References	1. Kothari, C. R. (2014). *Research Methodology – methods and techniques*, 3rd edition, New Delhi: New age International Publishers

	2. Gupta, S. C., & Kapoor, V. K. (2020). Fundamentals of mathematical statistics. New Delhi: Sultan Chand & Sons. 3. Gupta, S. P. (2001). Statistical Methods, New Delhi: Sultan Chand & Sons. 4. Gupta, S. P. (2001). Advanced Practical Statistics. New Delhi: S. Chand and Company Ltd., 5. Landau, S. (2019). A handbook of statistical analyses using SPSS. London: Chapman & Hall. 6. Singh, V. P. (2009). Simplified MS Office 2007. New Delhi: Computech Publications Limited. 7. Wackerly, D., Mendenhall, W., & Scheaffer, R. L. (2008). Mathematical statistics with applications. USA: Thomson Learning
Learning Outcomes	By the end of course the students will be able to; • Discuss the significance of statistics in the discipline of Home Science. • Describes the basic concepts of statistical inferences and test of significance. • Apply the appropriate statistical techniques for analysis and interpretation of data. • Understand working on a computer system and assess of MS- WORD, MS-EXCEL. • Analyze Research data through various test as chi-square, mean, median, mode, standard deviations, t-test etc. and present result through graphical presentation and tabulation using computer

Course Title	**Project/Dissertation (HSCDS8R1)**
Category of Course[145]	Dissertation

Credits[146]& Hours of Teaching

	Theory	Practical	Cumulative
Credits	-	12	12
Hours of Teaching (Total)	-	360	360

Course Objectives (not more than 100 words)	NA
Course Content	The course content be divided into minimum 3 Units to maximum 5 units along with defined hour of teaching for each unit.

Units	**Course Content**	**Hr. of Teaching**
I	NA	
II	NA	
III	NA	
IV	NA	

[145] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[146] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

V	NA	
Texts / References	NA	
Learning Outcomes (not more than 100 words)	NA	

Course Title	**Statistics and Computer Application (HSCMN8R1 and HSCMN8R2)**
Category of Course[147]	Minor
Credits[148]& Hours of Teaching	

	Theory	Practical	Cumulative
Credits	3	1	4
Hours of Teaching (Total)	45	30	75

Course Objectives

- To enable the students to develop knowledge in statistical tools and computer applications.
- To understand the meaning of correlation, regression analysis for estimation and prediction purposes.
- To discuss about the needs of various statistical test in Home Science discipline.
- To teach the students how to organize, analyze, interpret and present the research data effectively.
- To demonstrate the understanding of descriptive statistics by practical application of quantitative reasoning and data visualization
- To demonstrate the use of correlation, regression analysis and association for estimation and prediction purposes.

Course Content

Units	**Course Content**	**Hr. of Teaching**
I	Introduction to Statistics - Definition, importance and scope of statistics, Descriptive and Inferential statistics. Data Management; Raw data, ungrouped frequency distribution, grouped frequency distribution,	8

[147] SEC – Skill Enhancement Course; AEC – Ability Enhancement Course; VAC – Value Added Course; MD – Multidisciplinary Course

[148] 1 Credit (Theory) = 15 Hours; 1 Credit (Practical) = 30 Hours

	relative frequency table, cumulative frequency tables, how to convert raw data to the form of a frequency distribution, Graphs; histogram, frequency polygon, frequency curve, ogives. Scales of measurement- nominal, ordinal, interval and ratio scales. Coding of data.	
II	Measures of central tendency; Definition, arithmetic mean; simple and weighted arithmetic mean, median, mode, geometric mean, their uses, merits and demerits, Partition values – quartiles and percentiles, Measures of dispersion; Definition, Absolute and relative measures of dispersion; range, variance, standard deviation, standard error, coefficient of variation.	10
III	Normal Distribution and its applications, Probability- classical approach, random variable- discrete and continuous random variables, Normal random variable, characteristics and properties of a normal curve, standard normal distribution, converting raw scores into standard normalized scores, standard normal curve.	6
IV	Correlation, Regression and Association of Attributes, Linear correlation- meaning and types of correlation, scatter diagram, Karl Pearson's coefficient of correlation, Spearman's Rank correlation coefficient, Linear Regression and Prediction: Concept of regression lines and regression equations, use of regression lines, role of coefficient of alienation in prediction.	8
V	Testing of Hypotheses; Definition, concepts of statistical hypothesis- simple and composite, null hypothesis, alternative hypothesis, test of a statistical hypothesis, critical region, Type I error, Type II error, significance level, confidence level. Parametric test- Testing of hypothesis concerning the mean of a population, testing the equality of means of two populations, Testing of hypothesis concerning the proportion of a population, testing the equality of proportions of two populations, chi-square test, F test, ANOVA concepts, ANOVA-single factor, Non parametric; chi-square test- testing goodness of fit, independence of attributes.	13

	Computer; importance and uses in research & statistics, Basic features of Microsoft word and Excel, Statistical analysis using Excel sheet and SPSS, tabular & graphical representation of data using computer, frequency distribution; Histogram, pie diagram, scatter diagram graphs using Excel.	
PRACTICAL		
I	Preparation of different types of tables with research data on computer. Graphical representation of research data; Different types of statistical graphs and their uses in statistics, Line graph; types and different uses, pie diagram, scatter diagram etc. Preparation of Frequency distribution curves and graphs- histogram, frequency polygon and ogives through computer.	10
II	Discussing and solving practical problems of Statistics -Related to central tendency; mean, median, mode, partition values, dispersion; standard deviation, mean deviation, concept of Skewness and kurtosis and their measures etc., and hypothesis and hypothesis testing; Correlation, chi-square, t-test, Z - test, ANOVA.	10
III	Basic Statistical tools in computer for research and data analysis; MS-word, MS- Excel, SPSS etc. Learn about SPSS software and Solving above given statistical problems using Excel sheet and SPSS.	10

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2. Gupta, S. C., & Kapoor, V. K. (2020). Fundamentals of mathematical statistics. New Delhi: Sultan Chand & Sons.
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4. Gupta, S. P. (2001). Advanced Practical Statistics. New Delhi: S. Chand and Company Ltd.,
5. Landau, S. (2019). A handbook of statistical analyses using SPSS. London: Chapman & Hall.
6. Singh, V. P. (2009). Simplified MS Office 2007. New Delhi: Computech

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Learning Outcomes	By the end of course the students will be able to; • Discuss the significance of statistics in the discipline of Home Science. • Describes the basic concepts of statistical inferences and test of significance. • Apply the appropriate statistical techniques for analysis and interpretation of data. • Understand working on a computer system and assess of MS- WORD, MS-EXCEL. • Analyze Research data through various test as chi-square, mean, median, mode, standard deviations, t-test etc. and present result through graphical presentation and tabulation using computer

Members of Board of Studies

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Professor
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Lady Irwin College,
University of Delhi, New Delhi

Approved 20/9/24

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2. Prof. Kalpna Gupta
3. Prof. Lalita Vatta
4. Dr. Pushpa Kumari
5. Dr. Sukanya Chakravorty
6. Dr. Prashansa Sharma

On leave

20.09.24

20.9.24

(Head of the Department)
विभागाध्यक्षा / HEAD
गृहविज्ञान विभाग / Department of Home Science
महिला महाविद्यालय / Mahila Mahavidyalaya
बी.एच.यू. / B.H.U
वाराणसी / Varanasi