CHAMAN LAL MAHAVIDHYALAYA, LANDHAURA, MANGLAUR ROAD, HARIDWAR.(AUTONOMOUS)

AFFILIATED

SRI DEV SUMAN UTTARAKHAND UNIVERSITY, BADSHAHITHAUL, TEHRI GARHWAL,UTTARAKHAND

B+ NAAC

NATIONAL EDUCATION POLICY-2020
STRUCTURE OF
UG – SYLLABUS
2025-2026

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List of Members of Board of Studies

Sl. No.	Name of the Members	Designation	Nominated as
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2.	Dr. Alpna Sharma	Director/Prof.	
3.	Dr. Anamika chauhan	Assist. Professor.	
4.	Dr. Neetu Gupta	Assistant Professor.	

CONTENT

NHEQF and CCFUP: Definition and Abbreviation

Abbreviations

1. 'NHEQF' indicates 'National Higher Education Qualification Framework'
2. 'CCFUP' indicates 'Curriculum and Credit Framework for Under Graduate Programmes'
3. 'AEC' indicates 'Ability Enhancement Course'
4. 'DSC' indicates 'Discipline Specific Core'
5. 'DSE' indicates 'Discipline Specific Elective'
6. 'GE' indicates 'Generic Elective'
7. 'SEC' indicates 'Skill Enhancement Course'
8. 'VAC' indicates 'Value Addition Course'

I. Definitions

1. **Academic credit** – An academic credit is a unit by which the course work is measured. It determines the number of hours of instructions required per week. One credit is equivalent to one hour of teaching (lecture or tutorial) or two hours of practical work/field work per week.

2. **Courses of study** – Courses of the study indicate pursuance of study in a particular discipline. Every discipline shall offer three categories of courses of study, viz. Discipline Specific Core courses (DSCs), Discipline Specific Electives (DSEs) and Generic Electives (GEs).

a) **Discipline Specific Core (DSC):** Discipline Specific Core is a course of study, which should be pursued by a student as a mandatory requirement of his/her programme of study. DSCs shall be the core credit courses of that particular discipline which will be appropriately graded and arranged across the semesters of study, being undertaken by the student, with multiple exit options as per NEP 2020. The DSCs specified in the framework would be identified by the concerned Department as core courses to be taught in a Programme.

b) **Discipline Specific Elective (DSE):** The Discipline Specific Electives (DSEs) shall be a pool of credit courses of that particular discipline (single discipline programme of study) or those disciplines (multidisciplinary programme of study), as the case may be, which a student chooses to study from his/her particular discipline(s). There shall be a pool of DSEs from which a student may choose a course of study. The DSEs specified in the framework would be identified by the concerned Department as elective courses to be taught in a Programme.

c) **Generic Elective (GE):** Generic Electives shall be a pool of courses which is meant to provide multidisciplinary or interdisciplinary education to students. GEs shall consist of a pool of courses offered by various disciplines of study (excluding the GEs offered by the parent discipline), in groups of odd and even semesters, from which a student can

choose. The GEs specified in the framework would be identified by the concerned Department as GEs to be taught in a Programme.

In case a student opts for DSEs beyond his/her discipline specific course(s) of study, such DSEs shall be treated as GEs for that student.

Ability Enhancement course (AEC), Skill Enhancement Course (SEC) & Value Addition Course (VAC)

These three courses shall be a pool of courses offered by all the Departments in groups of odd and even semesters from which students can choose. A student who desires to make Academic Project/Entrepreneurship as Minor has to pick the appropriate combination of courses of GE, SEC, VAC, & Internship/ Apprenticeship/Project/ Community (IAPC) which shall be offered in the form of various modules as specified in the scheme of studies.

(i). AEC courses are the courses based upon the content that leads to knowledge enhancement through various areas of study. They are Language and Literature and Environmental Science and Sustainable Development which will be mandatory for all disciplines.

(ii). SEC are skill-based courses in all disciplines and are aimed at providing hands-on-training, competencies, proficiency and skills to students. SEC courses may be chosen from a pool of courses designed to provide skill-based instruction. Every discipline may provide skill-based courses, some of which may be offered to students of its discipline while the rest can be open to students of all other disciplines[1].

(iii). VAC courses are common pool of courses offered by different disciplines and aimed towards personality building; embedding ethical, cultural and constitutional values; promote critical thinking, Indian Knowledge Systems, scientific temperament, communication skills, creative writing, presentation skills, sports & physical education and team work which will help in all round development of students.

INTRODUCTION TO UNDERGRADUATE DEGREE COURSE

B.Sc. HOME SCIENCE

The undergraduate degree course in Home Science consists of eight semesters spread over four academic years. The teaching-learning process is student-centered, and it includes theoretical as well as practical aspects. It provides flexibility in program structure while ensuring that the student obtains a strong foundation in the subject as well as in-depth knowledge and awareness of all aspects of the discipline. Along with the DSCs, students can select four courses from the syllabus: DSEs, SECs, AECs, and VACs. As a result, the Curriculum framework highlights the multidisciplinary approach and commitment to innovative practices. Additionally, it provides a student with greatest flexibility in pursuing his or her studies at the Graduate Level, including the ability to eventually award the degree with several exit options. The syllabus is aimed to ignite students' enthusiasm and enable them with a detailed knowledge of all five disciplines of home science to support their engagement in higher studies, career growth, and employment.

Learning outcomes B.Sc. Home Science:

The objectives of the present B.Sc. Program of Home Science course are:

- Understand and appreciate the role of interdisciplinary sciences in the development and well- being of individuals, families and communities
- Learn about the sciences and technologies that enhance quality of life of people
- Acquire professional and entrepreneurial skills for economic empowerment of the student in particular, and community in general
- Develop professional skills in food and nutrition, textiles, housing, product making, communication technologies and human development
- Take science from the laboratory to the people to improve quality of life of people.

INSTRUCTIONS FOR PRACTICAL

- A minimum of 80% attendance in practical sessions is mandatory for all students.
- Students are required to maintain a practical record file, which must be duly signed by the respective departmental teacher.
- The completed practical record file must be submitted to the Department/College for official documentation and record-keeping.
- The practical examination will be conducted on the date scheduled by the University.
- The final practical marks will be jointly submitted to the University by both the external and internal examiners.

INSTRUCTIONS FOR INTERNAL EXAMINATION:

The students will be assessed for internal evaluation at the end of the semester through written exams/seminar/ presentation on any topic related to the syllabus/ viva voice/ project work/ assignments/attendance and participation in the class. The student may be evaluated based on the above parameters, either individually or in combination, for the purpose of internal assessment. Students are expected to participate actively and perform consistently in all assessment components.

Structure of the question paper, marks distribution for internal and external examination shall be as per University norms.

Table: Qualification type and credits requirements*

S.No.	Qualification Tittle/Type of Award	Stage of Exit	Mandatory Credits to be Secured for the Award
1.	Certificate in Home Science	After successful completion of semester II	44
2.	Diploma in Home Science	After successful completion of semester IV	88
3.	Bachelor in Home Science after	After successful completion of semester VI	132
4.	Bachelor in Home Science (Honours with Research/Academic Projects/Entrepreneurship	After successful completion of semester VIII	176
5.	Bachelor in Home Science (Honours with Research/Academic Projects/Entrepreneurship	After successful completion of semester X	220

**Mapping of qualification and credits requirements is based on draft NHEQF*

able: Programme structure B.Sc. Home Science

Bachelor of (field of study/ Discipline) (Hons.) (Single Core Disciplines)								
Semester	**Discipline specific Core (DSC) (4)**	**Elective (DSE) (4)**	**General Elective GE (4)**	**Ability Enhancement Course (AEC)(2)**	**Skill Enhancement Course (SEC) (2)**	**Internship/ Apprenticeship/ Project/ Community Outreach (2)**	**Value Addition Course (VAC) (2)**	**Total Credits**
I	DSC-1(4) DSC-2(4) DSC-3(4)		Choose one from the pool of courses **GE-1(4)**	Choose one from the pool of courses AEC courses **(2)**	Choose one from the pool of courses **(2)**		Choose one from the pool of courses **(2)**	22 Credits
II	DSC-4(4) DSC-5(4) DSC-6(4)		Choose one from the pool of courses **GE-2(4)**	Choose one from the pool of courses AEC courses **(2)**	Choose one from the pool of courses **(2)**		Choose one from the pool of courses **(2)**	22 Credits
Students on exit shall be awarded Undergraduate Certificate in Home Science after securing the requisite 44 credits in semester I and II								***44 Credits***

Bachelor of (field of study/ Discipline) (Hons.) (Single Core Disciplines)								
Semester	**Discipline specific Core (DSC) (4)**	**Elective (DSE) (4)**	**General Elective GE (4)**	**Ability Enhancement Course (AEC)(2)**	**Skill Enhancement Course (SEC) (2)**	**Internship/ Apprenticeship/ Project/ Community Outreach (2)**	**Value Addition Course (VAC) (2)**	**Total Credits**
III	DSC-7(4) DSC-8(4) DSC-9(4)	Choose one from the pool of courses **DSE-1(4)** OR Choose one from the pool of courses **GE-3(4)****		Choose one from the pool of courses AEC courses **(2)**	Choose One SEC OR Internship/ Apprenticeship/ Project/ Community Outreach IAPC- **(2)***		Choose one from the pool of courses **(2)**	22 Credits
IV	DSC-10(4) DSC-11(4) DSC-12(4)	Choose one from the pool of courses **DSE-2(4)** OR Choose one from the pool of courses **GE-4(4)****		Choose one from the pool of courses AEC courses **(2)**	Choose One SEC OR Internship/ Apprenticeship/ Project/ Community Outreach IAPC- **(2)***		Choose one from the pool of courses **(2)**	22 Credits
Students on exit shall be awarded Undergraduate Diploma in Home Science after securing the requisite 88 credits on completion of semester IV								***88 Credits***

Bachelor of (field of study/ Discipline) (Hons.) (Single Core Disciplines)

Semester	Discipline specific Core (DSC) *(4)*	Elective (DSE) *(4)*	General Elective GE *(4)*	Ability Enhancement Course (AEC)*(2)*	Skill Enhancement Course (SEC) *(2)*	Internship/ Apprenticeship/ Project/ Community Outreach *(2)*	Value Addition Course (VAC) *(2)*	Total Credits
V	DSC-13(4) DSC-14(4) DSC-15(4)	Choose one from the pool of courses **DSE-3(4)**	Choose one from the pool of courses **GE-5(4)**		Choose One SEC OR Internship/ Apprenticeship/ Project/ Community Outreach IAPC- **(2)***			22 Credits
VI	DSC-16(4) DSC-17(4) DSC-18(4)	Choose one from the pool of courses **DSE-4(4)**	Choose one from the pool of courses **GE-6(4)**		Choose One SEC OR Internship/ Apprenticeship/ Project/ Community Outreach IAPC- **(2)***			22 Credits
Students on exit shall be awarded Undergraduate Bachelor in Home Science after securing the requisite 132 credits on completion of semester VI								*132 Credits*

Bachelor of (field of study/ Discipline) (Hons.) (Single Core Disciplines)

Semester	Discipline specific Core (DSC) *(4)*	Elective (DSE) *(4)*	General Elective GE *(4)*	Ability Enhancement Course (AEC)*(2)*	Skill Enhancement Course (SEC) *(2)*	Internship/ Apprenticeship/ Project/ Community Outreach *(2)*	Value Addition Course (VAC) *(2)*	Total Credits
VII	DSC-19(4)	Choose three **DSE** courses **(3x4)** **OR** Choose two **DSE** courses **(2x4)** and one **GE** courses **(4)** **OR** Choose one **DSE** courses **(2x4)** and two **GE** courses **(4)** *(Total=12)*					Dissertation on Major (6) **OR** Dissertation on Minor (6) **OR** Academic Project/ Entrepreneurship (6)	22 Credits
VIII	DSC-20(4)	Choose three **DSE** courses **(3x4)** **OR** Choose two **DSE** courses **(2x4)** and one **GE** courses **(4)** **OR** Choose one **DSE** courses **(2x4)** and two **GE** courses **(4)** *(Total=12)*					Dissertation on Major (6) **OR** Dissertation on Minor (6) **OR** Academic Project/ Entrepreneurship (6)	22 Credits
Students on exit shall be awarded Undergraduate Bachelor in Home Science (Honors with Research/Academic Projects/Entrepreneurship) after securing the requisite 176 credits on completion of semester VIII								*176 Credits*

Bachelor of (field of study/ Discipline) (Hons.) (Single Core Disciplines)								
Semester	**Discipline specific Core (DSC) *(4)***	**Elective (DSE) *(4)***	**General Elective GE *(4)***	**Ability Enhancement Course (AEC)*(2)***	**Skill Enhancement Course (SEC) *(2)***	**Internship/ Apprenticeship/ Project/ Community Outreach *(2)***	**Value Addition Course (VAC) *(2)***	**Total Credits**
IX	DSC-21(4)	Choose three **DSE** courses **(3x4)** **OR** Choose two **DSE** courses **(2x4)** and one **GE** courses **(4)** **OR** Choose one **DSE** courses **(2x4)** and two **GE** courses **(4)** ***(Total=12)***					Dissertation on Major (6) **OR** Dissertation on Minor (6) **OR** Academic Project/ Entrepreneurship (6)	22 Credits
X	DSC-22(4)	Choose three **DSE** courses **(3x4)** **OR** Choose two **DSE** courses **(2x4)** and one **GE** courses **(4)** **OR** Choose one **DSE** courses **(2x4)** and two **GE** courses **(4)** ***(Total=12)***					Dissertation on Major (6) **OR** Dissertation on Minor (6) **OR** Academic Project/ Entrepreneurship (6)	22 Credits
Students on exit shall be awarded Master's in Core/ Subject after securing the requisite 220 credits on completion of semester X								***220Credits***

* There shall be choice in 3rd and 4th semester to choose either one "SEC" or in the alternative Internship/ Apprenticeship/ Project/ Community Outreach in each semester for two credits each.

** There Shall be choice in Semester 3rd and 4th to either choose DSE or GE.

*** There shall be a choice in 5th and 6th semester to choose either one SEC or in the alternative Internship/ Apprenticeship/ Project/ Community Outreach in each semester for two credits each.

Sri Dev Suman Uttarakhand University, Badshahi Thaul, Tehri (Garhwal) Uttarakhand
Course List for B.Sc. Home Science/Honours/M.Sc. Home Science (Foods and Nutrition)

Semester wise distribution of **Discipline Specific Courses (DSCs)** from semester I to semester X is listed in the following Table.

Table: DISCIPLINE SPECIFIC COURSES

Semester	Course Code	Course Name	Credits		
			Theory	Practical	Total No. of Lectures
1st Semester	DSC-1	Principles of Human Nutrition	3	1	4
	DSC-2	Fundamental of Textile Science	3	1	4
	DSC-3	Introduction to Human Development & Theories	4	0	4
2nd Semester	DSC-4	Fundamentals of Resource Management	4	0	4
	DSC-5	Introduction to Extension Education	4	0	4
	DSC-6	Food Preservation & Processing	3	1	4
3rd Semester	DSC-7	Clothing Construction & Flat Pattern Making	3	1	4
	DSC-8	Life Span Development: Early Years to Childhood	4	0	4
	DSC-9	Introduction to Interior Designing and Decoration	3	1	4
4th Semester	DSC-10	Communication Concept and Theories	3	1	4
	DSC-11	Nutrition: A Life Cycle Approach	3	1	4
	DSC-12	Life Span Development: Adolescence to Old Age	4	0	4
5th Semester	DSC-13	Textile Finishes	3	1	4
	DSC-14	Children with Special Needs	4	0	4
	DSC-15	Diffusion & and Adoption of Technology	4	0	4
6th Semester	DSC-16	Apparel Manufacturing Technology	3	1	4
	DSC-17	Housing and Space Management	3	1	4
	DSC-18	Family Financial Management	4	0	4
7th semester	DSC-19	Community Nutrition	3	1	4
8th semester	DSC-20	Information Communication and Technology	3	1	4
9th semester	DSC-21	Assessment of Nutritional Status	3	1	4
10th semester	DSC-22	Advanced Food Science	3	1	4

Semester wise distribution of **Discipline Specific Elective (DSEs)** from semester III to semester X is listed in the following Table.

Table: DISCIPLINE SPECIFIC ELECTIVE COURSES (DSEs)

Semester	Course Code	Course Name	Credits		
			Theory	Practical	Total No. of Lectures
3rd semester	DSE-1	Program Planning for Rural Families	4	0	4
4th semester	DSE-2	Human Physiology	4	0	4
5th semester	DSE-3	Therapeutic Nutrition	3	1	4
6th semester	DSE-4	Nutrition Education	4	0	4
7th Semester	DSE-5	Traditional Textiles and Costumes of India	3	1	4
	DSE-6	Food Science	4	0	4
	DSE-7	Child Rights & Gender Empowerment	4	0	4
8th Semester	DSE-8	Early Childhood Care and Education (ECCE)	3	1	4
	DSE-9	Nutritional Epidemiology	4	0	4
	DSE-10	Fashion Studies	4	0	4
9th Semester	DSE-11	Introduction to Indigenous food and Food Practices of Uttarakhand	3	1	4
	DSE-12	Maternal and Child Nutrition	4	0	4
	DSE-13	Food Microbiology	4	0	4
10th Semester	DSE-14	Food Quality Analysis	3	1	4
	DSE-15	Nutritional Management of Chronic Degenerative Disease	4	0	4
	DSE-16	Food Product Development	4	0	4

Semester wise distribution of **Generic Elective Course (GEs)** from semester I to semester X is listed in the following Table.

Table: GENERIC ELECTIVE COURSES (GEs)

Semester	Course Code	Course Name	Credits		
			Theory	Practical	Total No. of Lectures
1st Semester	GE-1	Consumer Education	4	0	4
2nd Semester	GE-2	Entrepreneurship Development	4	0	4
3rd semester	GE-3	Food Hygiene and Sanitation	4	0	4
4th semester	GE-4	NGO Management and CSR	4	0	4
5th Semester	GE-5	Guidance and Counseling	4	0	4
6th semester	GE-6	Eco Textiles and Environment	4	0	4
7th Semester	GE-7	Population Dynamics	4	0	4
	GE-8	Ayurveda and Nutrition	4	0	4
8th Semester	GE-9	Research Methods	4	0	4
	GE-10	Nutrition for Health and Fitness	4	0	4
9th Semester	GE-11	Basics of Statistics	4	0	4
	GE-12	Basic Nutritional Biochemistry	4	0	4
10th Semester	GE-13	Nutrition in Emergency and Disaster	4	0	4
	GE-14	Nutrition Health Communication	4	0	4

Semester wise distribution of Skill Enhancement Course (SEC) from semester I to semester VI is listed in Table

Table: Skill Enhancement Course (SECs)

Code	Skill Program	Skill Enhancement Course (SEC)					
		1st semester	2nd semester	3rd semester	4th semester	5th semester	6th semester
SEC-A	Food & Nutrition Skill	Food and Bakery Science	Value added product from fruits and vegetables	Food Service Management	Food standards and Quality Control	Hands on training on bakery/ food preservation and processing centers	Project
SEC-B	Therapeutic Nutrition Skills	Basics of Health Promotion and Educational Intervention	Nutritional Counselling	Medical Nutrition Management	Food Coaching	Experiential Learning in Diet and Nutritional Counselling	Internship/ Project
SEC-C	Textiles Skills	Fabric Formation and Finishes	Textile Testing	Fashion Illustration	Introduction to Pattern Making	Sewing Practices	Surface Ornamentation/ Hands on Training in Designing and Production of Textile/ Internship
SEC-D	Child Developmental Skills	Family Support Services	Method & Material for Young Children	Preschool Management	Intervention of Children with Special Needs	Hands on training in Early Child Center /Preschool Center/Anganwadi/Special Schools	Project work related to Child development skills
SEC-E	Resource Management Skill	Fundamental of Art and Design	Residential and commercial space design	Event Management	Ergonomic Design	Hands on training in event and decor management	Project
SEC-F	Extension Related Skill	Life Skills Education	Communication and Extension for Sustainable Development	Training for development	Public Speaking	Survey Analysis and Report Writing	Project

List of Papers (DSC, DSE, GE) with semester wise Titles for "Home Science"

ear	Sem.	Course	Course	Title	Theory Practical	Credits
rst Year	I	Discipline Core	DSC-1	Principles of Human Nutrition	3-0-1	4
		Discipline Core	DSC-2	Fundamental of Textile Science	3-0-1	4
		Discipline Core	DSC-3	Introduction to Human Development & Theories	4-0-0	4
		Generic Elective	GE-1	Consumer Education	4-0-0	4
		Ability Enhancement	AEC	Select from the pool of AEC Courses decided by University	2	2
		Skill Enhancement	SEC	Select from the pool of SEC Courses	1-0-1	2
		Value Added	VAC	Select from the pool of VAC Courses decided by University	2	2
	II	Discipline Core	DSC-4	Fundamentals of Resource Management	4-0-0	4
		Discipline Core	DSC-5	Introduction to Extension Education	4-0-0	4
		Discipline Core	DSC-6	Food Preservation & Processing	3-0-1	4
		Generic Elective	GE-2	Entrepreneurship Development	4-0-0	4
		Ability Enhancement	AEC	Select from the pool of AEC Courses decided by University	2	2
		Skill Enhancement	SEC	Select from the pool of SEC Courses	1-0-1	2
		Value Added	VAC	Select from the pool of VAC Courses decided by University	2	2
econd Year	III	Discipline Core	DSC-7	Clothing Construction & Flat pattern Making	3-0-1	4
		Discipline Core	DSC-8	Life Span Development: Early Years to Childhood	4-0-0	4
		Discipline Core	DSC-9	Introduction to Interior Designing & Decoration	3-0-1	4
		Discipline Elective/ Generic Elective	DSE-1 **OR** GE-3	Program Planning for Rural Families / **OR** Food Hygiene and Sanitation	4-0-0	4
		Ability Enhancement	AEC	Select from the pool of AEC Courses decided by University	2	2
		Skill Enhancement	SEC	Select from the pool of SEC Courses	1-0-1	2
		Value Added	VAC	Select from the pool of VAC Courses decided by University	2	2
	IV	Discipline Core	DSC-10	Communication Concept and Theories	3-0-1	4
		Discipline Core	DSC-11	Nutrition: A life cycle approach	3-0-1	4
		Discipline Core	DSC-12	Life Span Development: Adolescence to Old Age	4-0-0	4
		Discipline Elective/ Generic Elective	DSE-2 **OR** GE-4	Human Physiology **OR** NGO Management and CSR	4-0-0 **OR** 4-0-0	4
		Ability Enhancement	AEC	Select from the pool of AEC Courses decided by University	2	2
		Skill Enhancement	SEC	Select from the pool of SEC Courses	1-0-1	2
		Value Added	VAC	Select from the pool of VAC Courses decided by University	2	2
Third Year	V	Discipline Core	DSC-13	Textile Finishes	3-0-1	4
		Discipline Core	DSC-14	Children with Special Needs	4-0-0	4
		Discipline Core	DSC-15	Diffusion & and Adoption of Technology	4-0-0	4
		Discipline Elective	DSE- 3	Therapeutic Nutrition	3-0-1	4
		Generic Elective	GE-5	Guidance and counseling	4-0-0	4
		Skill Enhancement or IAPC	SEC **OR** IAPC	Select from the pool of SEC Courses **OR** Internship/Apprenticeship/Project/Community Engagement **(IAPC)**	1-0-1 **OR** 0-0-2	2
	VI	Discipline Core	DSC-16	Apparel Manufacturing Technology	3-0-1	4
		Discipline Core	DSC-17	Housing and Space Management	3-0-1	4
		Discipline Core	DSC-18	Family Financial Management	4-0-0	4
		Discipline Elective	DSE- 4	Nutrition Education	4-0-0	4
		Generic Elective	GE-6	Eco Textiles and Environment	4-0-0	4
		Skill Enhancement or IAPC	SEC **OR** IAPC	Select from the pool of SEC Courses **OR** Internship/Apprenticeship/Project/Community Engagement **(IAPC)**	1-0-1 **OR** 0-0-2	2

Fourth year	VII	Discipline Core	DSC-19	Community Nutrition	3-0-1	4
		Discipline Elective	DSE-5	Traditional Textiles and Costumes of India	3-0-1	4
		Discipline Elective	DSE-6	Food Science	4-0-0	4
		Discipline Elective	DSE-7	Child Rights & Gender Empowerment	4-0-0	4
		OR	**OR**	**OR**	**OR**	**OR**
		Discipline Elective	DSE-5	Traditional Textiles and Costumes of India	3-0-1	4
		Discipline Elective	DSE-6	Food Science	4-0-0	4
		Generic Elective	GE-7	Population dynamics	4-0-0	4
		OR	**OR**	**OR**	**OR**	**OR**
		Discipline Elective	DSE-5	Traditional Textiles and Costumes of India	3-0-1	4
		Generic Elective	GE-7	Population Dynamics	4-0-0	4
		Generic Elective	GE-8	Ayurveda and Nutrition	4-0-0	4
		Dissertation (Major/minor)	Dissertation	Dissertation Major **OR** Dissertation Minor **OR** Academic Project **OR** Entrepreneurship	0-0-6	6
	VIII	Discipline Core	DSC-20	Information Communication and Technology	3-0-1	4
		Discipline Elective	DSE-8	Early Childhood Care and Education (ECCE)	3-0-1	4
		Discipline Elective	DSE-9	Nutritional Epidemiology	4-0-0	4
		Discipline Elective	DSE-10	Fashion Studies	4-0-0	4
		OR	**OR**	**OR**	**OR**	**OR**
		Discipline Elective	DSE-8	Early Childhood Care and Education (ECCE)	3-0-1	4
		Discipline Elective	DSE-9	Nutritional Epidemiology	4-0-0	4
		Generic Elective	GE-9	Research Methods	4-0-0	4
		OR	**OR**	**OR**	**OR**	**OR**
		Discipline Elective	DSE-8	Early Childhood Care and Education (ECCE)	3-0-1	4
		Generic Elective	GE-9	Research Methods	4-0-0	4
		Generic Elective	GE-10	Nutrition for Health and Fitness	4-0-0	4
		Dissertation (Major/Minor)	Dissertation	Dissertation Major **OR** Dissertation Minor **OR** Academic Project **OR** Entrepreneurship	0-0-6	6
Fifth Year	IX	Discipline Core	DSC-21	Assessment of Nutritional Status	3-0-1	4
		Discipline Elective	DSE-11	Introduction to Indigenous food and Food Practices of Uttarakhand	3-0-1	4
		Discipline Elective	DSE-12	Maternal and Child Nutrition	4-0-0	4
		Discipline Elective	DSE-13	Food Microbiology	4-0-0	4
		OR	**OR**	**OR**	**OR**	**OR**
		Discipline Elective	DSE-11	Introduction to Indigenous food and Food Practices of Uttarakhand	3-0-1	4
		Discipline Elective	DSE-12	Maternal and Child Nutrition	4-0-0	4
		Generic Elective	GE-11	Basics of Statistics	4-0-0	4
		OR	**OR**	**OR**	**OR**	**OR**
		Discipline Elective	DSE-11	Introduction to Indigenous food and Food Practices of Uttarakhand	3-0-1	4
		Generic Elective	GE-11	Basics of Statistics	4-0-0	4
		Generic Elective	GE-12	Basic Nutritional Biochemistry	4-0-0	4
		Dissertation (Major/Minor)	Dissertation	Dissertation Major **OR** Dissertation Minor **OR** Academic Project **OR** Entrepreneurship	0-0-6	6
	X	Discipline Core	DSC-22	Advance Food Science	3-0-1	4
		Discipline Elective	DSE-14	Food Quality Analysis	3-0-1	4
		Discipline Elective	DSE-15	Nutritional Management of Chronic Degenerative Disease	4-0-0	4
		Discipline Elective	DSE-16	Food Product Development	4-0-0	4
		OR	**OR**	**OR**	**OR**	**OR**
		Discipline Elective	DSE-14	Food Quality Analysis	3-0-1	4
		Discipline Elective	DSE-15	Nutritional Management of Chronic Degenerative Disease	4-0-0	4
		Generic Elective	GE-13	Nutrition in Emergency and Disaster	4-0-0	4
		OR	**OR**	**OR**	**OR**	**OR**
		Discipline Elective	DSE-14	Food Quality Analysis	3-0-1	4
		Generic Elective	GE-13	Nutrition in Emergency and Disaster	4-0-0	4
		Generic Elective	GE-14	Nutrition Health Communication	4-0-0	4
		Dissertation (Major/Minor)	Dissertation	Dissertation Major **OR** Dissertation Minor **OR** Academic Project **OR** Entrepreneurship	0-0-6	6

Detailed Syllabi of DSCs, DSEs, SECs and GEs

Discipline Specific Core Courses (DSCs)

Course Code- DSC-1	**Course Tittle- Principles of Human Nutrition**	**Credits- Total (L-T-P): 4(3-0-1)**

Course Outcomes:

- *To understand the relationship between food, nutrition and health.*
- *To describe the functions of various nutrients and their sources & gaining knowledge about clinical manifestations of excess/ deficiency of nutrients.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Terms and definitions used in nutrition History of nutrition and important landmarks Classification and functions of food	03
Unit 2	**Macro nutrients** **Carbohydrates**: Types of carbohydrates in food, digestion, metabolism and functions of carbohydrates, Health conditions affected by excess and lack of carbohydrates. **Lipids**: Types of lipids in foods, digestion, metabolism and functions of lipids, Health problems associated with lipids.	14
Unit 3	**Proteins**: Amino acids as building blocks of proteins, classification, structure of protein, metabolism and functions of protein, Health conditions affected by protein. **Energy** source: Dietary carbohydrates, proteins, fats and alcohol. three basic functions of energy, basal metabolic rate, physical activity and thermogenesis and factors influencing them.	14
Unit 4	**Micronutrients:** **Vitamins**: Requirement, sources, function, toxicities and signs and symptoms of deficiencies of: Fat soluble vitamins; water soluble vitamins. **Minerals**: Requirement, sources, functions, deficiencies and toxicities. Water its metabolism, sources, distribution of water, structural and regulatory functions.	14
Practical	• To estimate the composition/ physiological value of food items • To identify the nutritional deficiencies/signs and symptoms of water-soluble vitamins in the community. • To identify the nutritional deficiencies/ signs and symptoms of fat-soluble vitamins in the community. • To identify the nutritional deficiencies/ sign and symptoms of water-soluble vitamins in the community. • To identify the nutritional deficiencies/ sign and symptoms of macro minerals in the community. • To identify the nutritional deficiencies/ sign and symptoms of micro minerals in the community. • To study the estimation of BMR in the individuals.	30

Suggested Readings:

1. Wilson E D, Fisher K H and Garcia P A 1980 Principles of Nutrition. Jhon Wiley & Sons, NewYork
2. Bamji M S ; Rao P N and Reddy V; 1997 Textbook of Human Nutrition. Oxford and IBH PublishingCo.
3. आहार एवं पोषण। पंचशील ूकाशन। वृ5दा िसंह
4. आहार एवं पोषण। र9ना खनूजा

Course Code- DSC-2	Course Tittle- **Fundamental of Textile Science**	**Credits-** Total (L-T-P): 4(3-0-1)

Course Outcomes:

- *To impart the knowledge of textiles fibers and yarns in terms of their production, properties and application.*
- *To equip the students with an in-depth information regarding the various fabric construction.*
- *Develop the skill of identifying and analyzing various types of fibres, yarns and fabrics.*
- *Knowledge of textile care and maintenance. Awareness on sustainable textile and its application daily life.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Textile: definition and forms of textiles. a) Classification of fibers and their properties: Primary and secondary properties of textile fibers with reference to their effect on fiber characteristics, structure of fibers. b) Origin, production, manufacturing and properties of various fibers: Natural- cotton, linen, jute, hemp, ramie, wool, and silk. c) Man-made rayon, polyester and nylon.	20
Unit 2	Introduction of yarn: a) Basic principle of yarn making: Mechanical spinning (cotton system, wool system, worsted system), Chemical spinning (wet, dry and melt). b) Classification of yarns: simple, ply and cord. c) Types of yarns: Textured and Novelty. d) Twist in yarns "s" and "z", number of twists. e) Properties of yarns: Strength, extension, fineness, length.	10
Unit 3	Woven Fabrics: a) Loom and its parts. Processing/ function of loom machine. b) Classification of basic weaves -plain, twill and satin. c) Weaves: construction, characteristics and usage.	10
Unit 4	Knitting: Classification, construction, characteristics and usage, Non-woven and felts- construction, properties and usage.	05

Course Code- DSC-2(P)	Course Tittle- **Fundamental of Textile Science (Practical)**	
Practical	• Fiber Identification tests: visual test, microscopic view, Burning test, Chemical test, Collection of natural, manmade and synthetic fiber /fabric samples. • Yarn Identification: –Single yarn, ply yarn, cord, textured yarn, elastic, monofilament yarn, multifilament yarn and spun yarn. • Handloom: Parts, Accessories and their use. • Identification, Graphical representation and Sample preparation of basic weave: plain weave, basket weave, twill weave. • Identification and Collection of different knitted sample: plain, purl, rib. • Identification and collection of knitting samples. • Fabric analysis of light, medium & heavy weight fabrics (five each):- Fiber type, Yarn type, Weave, GSM, End use, Trade name.	30

Suggested Readings:

- Cobman, P.B (1985) Textiles Fibre to Fabrics. 6th edition Mc Graw Hill Book Co, US.
- Sekheri S. (2013) Text book of Fabric Science, Fundamentals to finishing PHI Learning,Delhi.

Course Code- DSC-3	**Course Tittle- Introduction to Human Development and Theories**	**Credits-** **Total (L-T-P): 4(4-0-0)**

Course Outcomes:

- *Detailed understanding of development.*
- *Knowledge on developmental theories*

Unit	*Topic*	*No. of Lectures*
Unit 1	Importance of Human Development from a Life-span perspective. Issues in Human Development: Nature vs. nurture, Continuity vs. discontinuity, Organism vs. Mechanistic, Individual differences. Stages of Human Development	**10**
Unit 2	Growth and development – definition, concepts, determinants and principles. Difference between growth and development. Factor affecting growth and development. Domains of development. Principles of growth and development	**15**
Unit 3	Methods of Studying Human Development: Steps of studying behavior scientifically. Case study, interview, naturalistic observation, laboratory observation, Experimental methods, cross-sectional, longitudinal and sequential studies. Ethics of research with human subjects – written consent, privacy, no harm, no Plagiarism, debriefing.	**15**
Unit 4	Major development theories: Freud's theory of psychosexual development, Erikson's theory of psychosocial development, Piaget's theory of cognitive development, Kohlberg's moral understanding theory.	**20**

Suggested Readings:

- Papalia DE and Olds SW; 1978 Human Development. McGraw Hill. NewYork.
- Munsinger H.; 1971 Fundamentals of Child Development. Holt Reinhart and WilsonInc.
- Hall, Calvin S. and Lindsey G 1978. Theories of Personality; John Wiley &Sons.

Course Code- DSC-4	**Course Tittle- Fundamentals of Resource Management**	Credits- Total (L-T-P): 4(4-0-0)

Course Outcomes:

- To impart knowledge of various concepts and principles of resource management.
- To create awareness of resource their availability, generation and allocation for improvement in the quality of life of families.

Unit	*Topic*	*No. of Lectures*
Unit 1	Resource – Definition, classification, availability, generation and allocation a) Role and scope of resources b) Classification , types and characteristics of resources. Principles in the use of resources; scarcity, utility, accessibility, exchange, transferability, substitution, reuse and investing	15
Unit 2	Definition, concept and process of management Motivation for management – values goals and standards and their origin classification, role in management, interlinking of values goals and standards.	15
Unit 3	Decision making: Role and scope, Classification- technical, economic, social, legal, political decision, Decision making process, Decision conflict	15
Unit 4	Introduction to work simplication, Principles of Work Simplification, Work Study Techniques,Tools for Work Simplification, Identification of Waste and Inefficiency,Methods to Improve Work Efficiency	15

Suggested readings:

- Koontz.H. and O'Donnel C., 2005, Management – A systems and contingency analysis of managerial functions. New York: McGraw-Hill Book Company
- Kreitner. 2009, Management Theory and Applications, Cengage Learning: India
- Rao V.S. and Narayana P.S., Principles and Practices of Management, 2007, Konark Publishers Pvt. Ltd.
- Sawhney, H.K. & Mital, M.,2007, Family Finance & Consumer Studies, Elite Publishing House Pvt. Ltd.
- Seetharaman, P. and Sethi, M.,2001, Consumerism: Strength and Tactics, New Delhi: CBS Publishers.

Course Code- DSC-5	**Course Tittle- Introduction to Extension Education**	**Credits- Total (L-T-P): 4(4-0-0)**

Course Outcomes:

- Understand the principles, theories, and concepts of extension education.
- Recognize the role of extension in promoting social change and development.
- Apply effective communication and teaching methods in extension work.
- Plan and implement extension programs to address community needs.

Unit	*Topic*	*No. of Lectures*
Unit 1	Extension Education: concept, definition, meaning, objectives, principles, scope, and Philosophy. Home science extension – Concept, definition, objectives, and philosophy, Contribution of Home Science Extension towards development of society	15
Unit 2	Extension Teaching Methods & Media Communication: Definition, Aim, objectives, classification, merits and limitations of Extension methods.	15
Unit 3	Audio-Visual aids (AV aids) – definition, importance and role of visual aids, audio, extension methods for effective teaching.	15
Unit 4	Visual Media - Electronic Media – Radio, Television, Films, Group Media and it's usage in Extension. Print Media - News Paper, Magazines. Mass media and their uses for extension.	15

Suggested Readings:

- Dhama, O.P. and Bhatnagar, O.P. (1980). Extension and Communication for Development.Oxford and IBH.
- Dhama, O.P. (1986) Extension and Rural Welfare. Rural Prasad and Sons, Agra.
- Singh, Ranjit (1987). A Text Book of Extension Education, SahityaKala Prakashan, Ludhiana.
- Supe S.V. (1987). An Introduction to Extension Education , Oxford and IBH Publishing Co.New Delhi.

Course Code- DSC-6	Course Tittle- Food Preservation & Processing	Credits- Total (L-T-P): 4(3-0-1)

Course Outcomes:

- *Understand the principles and methods of food preservation.*
- *Identify different preservation techniques and their applications.*
- *Evaluate the quality and safety of preserved food products.*
- *Apply appropriate preservation methods to extend the shelf life of perishable foods.*
- *Demonstrate knowledge of food preservation regulations and standards.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Food preservation: Concept, significance, need, benefits and aim of food preservation. Food deterioration, causes of food spoilage, factors affecting it and control of microorganism, and other factors. Selection and purchase of fruits and vegetables for preservation.	10
Unit 2	a) Principles and method of food preservation. b) Principles and methods of food dry and concentration- sun drying freeze drying, spray drying, drying by osmosis, factors in control of drying. c) Preservation by the use of heat- Sterilization, pasteurization, blanching and canning. d) Preservation by cold- Distinction between refrigeration and freezing; freezing preservation- air freezing, quick freezing, slow freezing, cryogenic freezing.	10
Unit 3	a) Preservation with the use of chemical preservatives: salt, sugar and other additives. b) Principles of food preservation by irradiation and refrigerated gas storage of various foods.	10
Unit 4	a) Effect of food preservation on nutritive value of food. b) Enhancing nutritional quality of the food c) Fermentation: role of microorganism and benefits of fermentation. d) Sprouting, food fortification, supplementation and enrichment. e) Storage stability of preserved products, objective test of quality of stored like Odour, texture etc.	15

Course Code- DSC-6(P)	Course Tittle- Food Preservation & Processing (Practical)	
Practical	▪ Preparation of fruit juices/ squashes/syrup. ▪ Preparation of jams/ jellies/ sauces/ chutney/murabbas. ▪ Preparation of dehydrated vegetables and fruit toffees ▪ Preparation of pickles, cereals/ legume product using food preservation and processing techniques. ▪ Preparation of weaning mix through sprouting, malting using indigenous food crops. ▪ To prepare food products using fermentation/sprouting methods. ▪ Visit to a food factory/ women self-help group working on areas of food preservation.	*No. of Lectures* 30

Suggested Readings:

- Manay, Sakuntala and Shadaksharaswamy, M. (2001). Food Facts and Principles, 2ndedition. New Age International Publishers.
- Srilakshmi, B.(2001). Food Science. New Age International Publishers.

- Sivasankar, B. (2014). Food processing and preservation: Hall of India Pvt., New Delhi.

Course Code- DSC-7	**Course Tittle- Clothing Construction and Flat pattern Making**	**Credits- Total (L-T-P): 4(3-0-1)**

Course Outcomes:

- *Evaluate the functionality and suitability of apparel designs for specific purposes*
- *Understand the principles of apparel design and fashion aesthetics.*
- *Analyze current trends and styles in the apparel industry.*
- *Apply design elements and principles in creating apparel prototypes.*

Unit	*Topic*	*No. of Lectures*
Unit 1	History, origin, function, and importance of clothing. Clothing requirements of infants, toddlers, preschool and elementary school children, adults and old age person. Factors affecting selection of garment.	10
Unit 2	**Sewing machine:** Types of sewing machine- Mechanical, electronic, computer/automated and embroidery sewing Machine.Parts of sewing machine. **Tools and equipment used for garment construction:** Measuring tool, Drafting tool, Marking tool, Cutting tool, Stitching tool, Pressing tool.Needles, threads and their relation to fabric	7
Unit 3	**Construction processes**: Hand stitches, seam and seam finishes, disposal of fullness, plackets and edge finishing, Preparation of fabric for layout and cutting, stay stitching. Unit construction methods. **Surface layering** : Applique- simple, cut, felt Quilting- hand and machine Pleats, Tucks and gather	18
Unit 4	a) Anthropometric measurements: Importance and techniques. b) Garment designing: Techniques and importance. c) Flat patter making: Basic paper pattern, types of basic pattern, process of designing by flat pattern method. d) Standard of good fit and fitting problems	10

Course Code- DSC-7(P)	**Course Tittle- Clothing Construction and Flat pattern Making**	
Practical	• Demonstration on Sewing Equipment and tool, sewing machine and its care. • Taking measurements directly from body • Preparation of fabric for cutting: Preshrinking, Identification and straightening of Grain. • Basic hand stitches- basting, back stitch, hemming visible/invisible, Lock stitch. • Seams- plain seams and decorative seams. • Fullness : ➢ Darts-Single point, Fish dart ➢ Tucks- Pin tucks, wide tucks, corded tucks, crossed tucks ➢ Pleats- Knife, box, inverted box, accordion pleat ➢ Gathers – Hand and machine • Introduction to drafting method and stitching of Petticoat/ Apron/ Kalidar Kurta: ➢ Drafting on paper ➢ Transferring pattern markings from paper	*No. of Lectures* 30

Suggested Readings:

- Armstrong, H.J., 2009, Pattern Making for Fashion Design, Harper Collins Publishers Inc., New York.
- Stamper,A.A., S.H.SharpandL.B.Donnell,1986,Evaluating Apparel Quality, Fairchild Publications, America.
- Liechty, E.G., Potterberg, D.N., Rasband, J.A., 2010, Fitting and Pattern Alteration: A Multimethod Approach, Fairchild Publications, New York.
- Thomas, A, (1986), the Art of Sewing UBSPD Publishers Distributors Ltd. New Delhi.
- Readers, Digest, Complete Guide to Sewing, The Reader's Digest Associations (Canada) Ltd. Montreal, Pleasantville, New York.
- Kallal, Mary Jo, (1985), Clothing Construction, Mc Millan Publishing Company New York.
- Janace E. Bubonia. (2012), Apparel production terms and processes, Fairchild Books, New York.
- Armstrong, Pearson. (1995), Pattern making for Fashion Design, Fairchild Publication, New York 1995 (Indian Ed.)

Course Code- DSC-8	Course Tittle- Life Span Development: Early Years to Childhood	Credits- Total (L-T-P): 4(4-0-0)

Course Outcomes:

- *To understand the key concepts, principles, and stages of lifespan development from prenatal period to childhood.*
- *To explore the physical, cognitive, emotional, and social development during early childhood (0–8 years).*
- *To examine the role of family, culture, and environment in influencing child development.*
- *To identify developmental milestones and recognize variations in growth patterns.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Life span development, stages of development-Prenatal, Infancy and Early Childhood, middle childhood and adolescence, Adulthood and old age.	15
Unit 2	Infancy: The neonate up to 4 weeks: physical, physiological, cognitive and social Prenatal, perinatal and postnatal stages a. Issues and scientific concepts associated with conception b. Pregnancy c. Prenatal development d. Labor/ birth e. Postnatal	15
Unit 3	Infancy and Early childhood a. Physical, Motor, social, emotional, cognitive and language characteristics. b. Antecedent influences on early growth and development. c. Stimulating approaches for optimizing development.	15
Unit 4	Middle childhood and Adolescence a. Physical, Motor, social, emotional, cognitive and language characteristics b. Antecedent influences on growth and development.	15

Suggested Readings:

- Berk, L. E. (2007). Development through the lifespan. Delhi: Pearson Education
- Rice. F. P. (1998). Human Development: A lifespan approach. New Jersey: Prentice Hall.
- Santrock, J. W. (2007). A topical approach to life-span development. New Delhi: Tata.McGraw-Hill.
- Singh, A. (Ed). 2015. Foundations of Human Development: A life span approach. New Delhi: Orient Black Swan.

Course Code- DSC-9	Course Tittle- Introduction to Interior Designing and Decoration	Credits- Total (L-T-P): 4(3-0-1)

Course Outcomes:

- *To learn about elements and principles of art and their application in interior designing*
- *Students will gain a comprehensive understanding of the fundamental principles of art, such as line, shape, colour, form, texture, balance, proportion, and harmony. They will learn how these principles apply to interior decoration and design.*
- *Students will acquire knowledge of various design elements, including space, light, pattern, rhythm, and emphasis. They will learn how to effectively utilize these elements to create visually appealing and functional interior spaces.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Design fundamental: concept of design, types of design, Elements of Design and its application: Line, Form and Shape, Texture, Pattern, Colour, Light, Space. Principles of Design and its application: Proportion, Balance, Rhythm, Harmony, Emphasis.	15
Unit 2	Colours: characteristics of colour, Colour Spectrum –VIBGYOR, Dimension/ properties of colour, Colour schemes, Colour psychology. Importance of colour & its role in creation of the design. Colour Systems: Prang and Munsell colour systems.	15
Unit 3	Furniture: types of material, selection and arrangement. Wall and wall coverings. Floor and floor covering, furnishing and upholstery.	15
Unit 4	Window and window treatment, Accessories for interior, flower arrangements. Table setting, lighting as an element of interior.	15

Course Code- DSC-9(P)	Course Tittle- Introduction to Interior Designing and Decoration (Practical)	
Practical	• Development of designs. • Colour wheel and planning colour schemes of different rooms. • Market Survey on lighting accessories, furnishings and Furniture • Traditional Alpana designs for decoration in rooms/ cards. • Pottery painting and decoration. • Paper cutting for decorating a house for special occasions. • Use of waste materials for making utility/ decorative articles. • Table setting, Napkin folding and flower arrangements.	*No. of Lectures* 30

Suggested Readings:

- Dorothy Stepat De Van.(1980). Introduction to Interior Design, Macmillan, N.Y
- Peter Green. 1967. Introducing Surface Painting, Br.Bestford Lt., UK.
- Rowland Hilder. 1966. Starting with water, Colour, Studio Vista, U.K.
- Bhawanani Enakshi 1969. Decorative Designs and Craftsmanship of India, B. TaraporeniaSons and Co. Pvt Ltd.,

Course Code- DSC-10	**Course Tittle- Communication Concept and Theories**	**Credits-** Total (L-T-P): 4(3-0-1)

Course Outcomes:

- *To Understand the concept and process of communication.*
- *To aware about the importance of teaching aids in learning.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Communication- concept, Meaning, definition, function, problem and barrier in communication. a) Element of communication. b) Communication models. Awareness of self in communication, Intrapersonal Communication.	15
Unit 2	**Interpersonal Communication:** a) Concept, meaning, definition of interpersonal communication. b) Types: Dyadic, small and large group communication and functions of interpersonal communication, Stages in human relationship development. c) Small group communication: types and function. Non-projected communication aids: chalkboard, flat pictures, diagrams, photographs, charts, posters, flash cards.	15
Unit 3	**Mass Media:** a) Mass Media- characteristics and significance of print, electronic and web-based media. b) Print Media: types, nature, characteristics, reach and access. c) Radio: types, nature, characteristics reach and access. d) Television and cinema: types, nature, characteristics reach and access. ICTs: types, characteristics, reach and access.	20
Unit 4	Instructional Technology-meaning, importance, scope, selection, use and classification	10

Course Code- DSC-10(P)	**Course Tittle- Communication Concept and Theories (Practical)**	
Practical	• Preparation and use of instructional media: Chart, Poster, Flash cards, Graphs, Flannel graphs, models, use of black board, use of bulletin board • Preparation and use of slides. • Use and handling of instruction aids overhead projector/slide projectors/ camcorder/tape recorder and public-address system. • Demonstration as instructional technology.: Result demonstration and method demonstration • Organizing and participating in various types of group discussions. • Lesson planning, presentation and evaluation.	*No. of Lectures* 30

Suggested readings:

- Dhama Barker, L. (1990). "Communication", New Jersey: Prentice Hall, Inc.
- Dhama,O.P. and Bhatnagar O.P. Education and communication for development (1985) Oxford and IBH Publishing Co. Pvt. NewDelhi.
- Devito, J. (1998) Human Communication. New York: Harper &Row.
- Patri and Patri (2002); Essentials of Communication. GreenspanPublications.

Course Code- DSC-11	Course Tittle- Nutrition: A Life Cycle Approach	Credits- Total (L-T-P): 4(3-0-1)

Course Outcomes:

- *Comprehend the nutritional requirements at different stages of the life cycle.*
- *Evaluate the impact of nutrition on growth, development, and overall health.*
- *Analyze dietary patterns and their implications for various life stages.*
- *Develop appropriate dietary plans and recommendations for different age groups.*
- *Promote healthy eating habits and preventive nutrition strategies.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Principles of meal planning: Food group and food exchange list, factor affecting meal planning and food related behaviour, method of assessment of nutrient requirements, dietary guidelines for Indians, RDA.	10
Unit 2	Nutrition during childhood: Growth and development, growth reference/ standards, RDA, nutritional guidelines, nutritional concerns and healthy food choices For infants, preschool children, school children and adolescence.	15
Unit 3	Nutrition during adulthood: RDA, physiological changes, nutritional Guidelines nutritional concerns and healthy food choices for adults and elderly.	10
Unit 4	Nutrition during pregnancy and lactation: RDA, physiological changes, nutritional guidelines nutritional concerns and healthy food choices for pregnant and lactation mothers.	10

Course Code- DSC-11(P)	Course Tittle- Nutrition: A Life Cycle Approach (Practical)	
Practical	• Introduction to meal planning: rich sources of nutrients, Use of food exchange lists. • Planning and preparation of nutritious diets for: preschooler, school age child • Formulation of nutritious diets for: adolescent and young adult. • Preparation of nutritious diets for: pregnant/lactating woman/elderly. • Planning nutrient rich snacks/dishes: Infants (Complementary foods)/children/ adult.	*No. of Lectures* 30

Suggested Readings:

- Nutrition and Dietetics: B. Srilakshmi, New age international.
- Life Cycle Nutrition: Sari Edelstein, Jones and Bartlette Publishers Inc
- Fundamentals of Food, Nutrition and Diet Theraphy: Sumati R Mudambi and MVRajagopal, New age international
- Textbook of Human Nutrition: Anjana Agarwal and Shobha A Udipi, Jaypee brothersMedical Publishers(P) Ltd.
- Textbook of Nutrition and Dietetics: Kumud Khanna, Sharda Gupta and *et.al.*

Course Code- DSC-12	Course Tittle- Life Span Development: Adolescence to Old Age	Credits- Total (L-T-P): 4(4-0-0)

Course Outcomes:

- *Understand developmental changes from adolescence to old age.*
- *Explore physical, cognitive, emotional, and social transitions across stages.*
- *Analyze the impact of family, society, and culture on development.*
- *Study challenges like identity, aging, and role transitions.*
- *Recognize mental health and coping strategies across the lifespan.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Adolescence: Physical changes, changes in social behaviours, development of emotional maturity; Heterosexual relationships. Family relationship and relationship with teachers. Outer influences on adolescent; drug abuse and AIDS.	15
Unit 2	Early and middle adulthood: The development of self in young and middle adulthood- physical changes, intellectual, cognitive functioning and personality development.	15
Unit 3	Later adulthood: Physical changes, cognitive functioning, personality patterns and changes.	15
Unit 4	Old age: Attitudes towards life and death among the elderly, status of aged in India and helping the aged. Care during old age and old age homes in India	15

Suggested Readings:

- Berk, L. E. (2007). Development through the lifespan. Delhi: Pearson Education
- Rice. F. P. (1998). Human Development: A lifespan approach. New Jersey: Prentice Hall.
- Santrock, J. W. (2007). A topical approach to life-span development. New Delhi: Tata.McGraw-Hill.
- Singh, A. (Ed). 2015. Foundations of Human Development: A life span approach. New Delhi: Orient Black Swan.

Course Code- DSC-13	Course Tittle- Textile Finishes	Credits- Total (L-T-P): 4(3-0-1)

Course Outcomes:

- *Understand the principles and elements of textile design.*
- *Analyze different types of finishes and their effects on textile materials.*
- *Apply appropriate finishes to enhance the aesthetics and functionality of textiles.*
- *Evaluate the quality and durability of finished textile products.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Introduction to textile design: a) Woven designs: simple and compound structures of fabrics b) Decorative designs: Naturalistic, conventional, abstract and geometric designs. Application of design principles in textile designing.	05
Unit 2	Textile finishes and their importance. Classification of textile finishes: chemical, mechanical, temporary, renewable, durable, permanent finishes. Introduction to fabric finishes: a) Processes of removing impurities from fabrics, scouring, desizing, degumming, carbonization. b) Basic finishes that alter hand or texture: Felting, singeing, stiffing, decatizing Surface finishes- bleaching, delustering, calendaring, beetling, napping, flocking, burnt out design, acid design, plisse design, tentering shearing and brushing. d) Functional finishes: water proof and water repellent finish, shrinkage control, wrinkle resistance, durable press and flame-retardant finish.	15
Unit 3	A) - Dyes and their classification. Dyeing techniques: solution dyeing, fibre and yarn dyeing, piece dyeing, tie & dye method. B) - Printing and techniques of printing: Direct, discharge and resist printing.Method of printing -block, screen, stencil, roller, heat transfer and resist printing and batik.	15
Unit 4	Labeling and labeling act.Care Labels and tags used in textiles. Certification marks used in textiles: GOTS, Wool mark, Silk Mark, Eco-Mark.	10

Course Code- DSC-13(P)	Course Tittle- Textile Finishes (Practical)	
Practical	• Basic fabric finishes: scouring, bleaching and mercerization. • Preparations of tie and dye samples using various techniques. • Preparation of batik samples using various techniques. • Preparation of block printing sample. • Preparation of screen-printing sample. • Prepare an article with the use of any three style of dyeing and printing. • Identification of care-label on garments. • Certification marks used in textiles	*No. of Lectures* 30

Suggested Readings:

- Birkar, H.1968. Screen Printing. New York, Sterling Publishing Co.Inc.
- Muehling, E. 1967. The book of Batik. London, Mills and Boons Limited.
- Anderson, F.1974. Tie- Dyeing and Batik. London, Octopus Editorial Production by Berkeley Publishers Ltd.

Course Code- DSC-14	**Course Tittle- Children with Special Needs**	**Credits- Total (L-T-P): 4(4-0-0)**

Course Outcomes:

- *Understand the characteristics and challenges faced by children with special needs.*
- *Identify various disabilities and disorders affecting children's development.*
- *Apply appropriate teaching and intervention strategies for children with special needs.*
- *Advocate for inclusive education and support services for children with disabilities.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Introduction to Childhood Disability: Defining disabilities, models of disability, Classifying disabilities, Social construction of disability, demography.	**15**
Unit 2	Common Childhood Disabilities: Identification, assessment and etiology with reference to locomotor disability, visual disability.	**15**
Unit 3	Identification, assessment and etiology with reference to auditory and Speech disability, intellectual disability, autism, learning disability	**15**
Unit 4	Children with Disabilities and Society: Families of children with disability, prevention and management of different disabilities, educational practices- Special education and inclusion, policy and laws.	**15**

Suggested readings:

- Chopra,G., (2012). Early Detection of Disabilities and persons with disabilities in the community. New Delhi: Engage publications
- Chopra,G., (2012). Stimulating Development of Young Children with Disabilities at Anganwadi and at Home: A Practical Guide. New Delhi: Engage publications.
- Sharma, N. (Ed)(2010). The Social Ecology of Disability-Technical Series - 3Lady Irwin College. Delhi: Academic Excellence
- Mangal, S. K. (2007).Exceptional children: An introduction to special education. New Delhi: Prentice Hall of India
- Jangira, N.K.(1997) "Special Educational Needs of Children and Young Adults: An Unfinished Agenda," Education and Children with Special Needs: From Segregation to Inclusion, Ed. Seamus Hegarty, Mithu Alur, Thousand Oaks: Sage Publications Inc.
- Karna, G. N. (1999). United Nations and rights of disabled persons: A study in Indian perspective. New Delhi: A.P.H. Publishing Corporation.

Course Code- DSC-15	Course Tittle- Diffusion and Adoption of Technology	Credits- Total (L-T-P): 4(4-0-0)

Course Outcomes:

- Explain the key concepts, principles, and models of diffusion and adoption of technology in the context of extension education.
- Classify and analyze different categories of adopters and innovation characteristics

Unit	*Topic*	*No. of Lectures*
Unit 1	Communication: Concept, Definition, Difference between Communication and Diffusion, Elements of communication,	15
Unit 2	Diffusion: Concept, Definition, Elements of Diffusion Process, Concept of Homophily and Heterophily in Diffusion. Difference between communication and diffusion.	15
Unit 3	Innovation: Concept, Definition, Innovation development process, Attributes of Innovation. Characteristics of Innovations	15
Unit 4	Adoption: Concept, Definition, Adoption Process, Stages of Adoption process, Factors Affecting the Diffusion and Adoption of New Practices. Adopter Categories. Adoption Barriers in Rural Communities	15

Suggested Readings

- **Rogers, E. M. (2003).** *Diffusion of Innovations* (5th Edition)New York: Free Press.
- **Ray, G. L. (2005).** *Extension Communication and Management*Kalyani Publishers.
- **Dasgupta, S. (1989).** *Diffusion of Agricultural Innovations in Village India*Wiley Eastern Ltd.
- **Swanson, B. E. (1984).** *Agricultural Extension: A Reference Manual*FAO, Rome.
- **Samanta, R. K. (1991).** *Technology Transfer and Extension: Issues and Strategies*Konark Publishers.
- **Mishra, D. C. (2005).** *Agricultural Extension*APH Publishing.

Course Code- DSC-16	Course Tittle- Apparel Manufacturing Technology	Credits- Total (L-T-P): 4(3-0-1)

Course Outcomes:

- *Learn about industrial sewing machines, tools, and equipment used in manufacturing.*
- *Study garment construction techniques*
- *Explore the roles of pattern making, grading, and marker planning.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Apparel manufacturing a) Structure of apparel industry; history of apparel production and types of apparel manufacturing units b) Sectors in apparel industry, garment types and organization in apparel industry according to product type c) Departments of apparel industry and their functions: Design, Marketing, Finance, Purchasing, Production d)Operation - pre-production planning, production planning and control	**10**
Unit 2	**Manufacturing Technology (A):** • Selection and procurement of raw material: types of raw materials; types of material sources; sourcing decision- material sourcing process and material sourcing responsibilities; factors affecting selection of raw materials • Cutting: processes in cutting room and cutting equipment; cutting costs. • Fusing: structure of fusing materials, their importance, fusing equipment, factors influencing fusing quality	**15**
Unit 3	**Manufacturing Technology (B):** • Sewing: components of sewing- stitches, seams, feed system, needle, threads; sewing machine- types of machines and sewing work aids • Pressing: types of pressing and pressing equipment • Production technology: types and operational characteristics of different production systems • Ware housing: elements of warehousing, storage and packaging equipment	**10**
Unit 4	Quality control in apparel industry: a) Terminology: quality, quality control, quality assurance, quality specifications b) Importance of quality control and principles of quality control c) Apparel quality standards and accepted quality level d) Quality control checks and garment inspection & measuring guides	**05**

Course Code- DSC-16(P)	Course Tittle- Apparel Manufacturing Technology (Practical)	
Practical	**Pattern Making and Garment Construction:** Create a basic pattern block for a garment (e.g., skirt, top, pants) Construct a simple garment using a pattern **Textile Testing:** Conduct tests for fabric properties (e.g., tensile strength, shrinkage, drape) Analyze test results and recommend fabric usage **Garment Finishing Techniques:** Apply various finishing techniques (e.g., hemming, seam finishing, buttonholes). Evaluate the quality of finished garments **Apparel Production Planning:** Plan and schedule production for a simple garment, calculate production costs and estimate time requirements **Quality Control and Inspection** Inspect garments for defects and irregularities, Develop a quality control plan for apparel manufacturing. Sustainable Practices in Apparel Manufacturing: Explore eco-friendly materials and production methods, Design a sustainable garment collection **Garment Fitting and Alteration:** Conduct fitting sessions and make alterations, Evaluate the fit and comfort of garments	*No. of Lectures* 30

Suggested readings:

- Cooklin, G., 1991. Introduction to Clothing Manufacture. UK, Blackwell Science.
- Cooklin, G., 1997. Garment Technology for Fashion Designs. UK, Blackwell Science.
- Glock, R.E. and Kunz, G.I. 2005. Apparel Manufacturing Sewn Products Analysis. IV Edn., New Delhi, Pearson Education.
- Mehta, P.U. and Bhardwaj, S.K. 1998. Managing Quality in the Apparel Industry. I Edn, New Delhi, New Age International.
- Sheshardi, M.S. 2002. Apparel Marketing and Merchandizing. Banglore, M.S. Publication.

Course Code- DSC-17	Course Tittle- Housing and Space Management	Credits- Total (L-T-P): 4(3-0-1)

Course Outcomes:

- *Understand the principles and factors influencing housing design and layout.*
- *Analyze spatial needs and functionality in residential and commercial spaces.*
- *Apply principles of space planning and utilization for optimal use of available space.*
- *Evaluate the impact of environmental factors on housing and space management.*
- *Design and recommend appropriate interior arrangements for different settings.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Importance /needs of house: physiological needs, affectional needs, socio- economic needs, psychological needs. Site selection: Soil, Location, Effect of winds, the surrounding environment. Characteristics of the plot - size, proportion, shape, types of houses, Urban bye laws.	10
Unit 2	General principles of Housing- aspect, prospect, grouping, roominess, flexibility, lighting, ventilation and sanitation. Classification of house – Flats; studio apartment; condominium; villas; Pent house Economy in construction	15
Unit 3	Need of planning homes, Open & closed plans, Planning aspects of Living Room, Drawing & Dining Room, Bedrooms. Kitchen planning- its need, Type of kitchen plans, Work triangle, Standard measurement.	10
Unit 4	Landscape- Importance, Planning – Hard & Soft landscape, Design Process. Dealing with external agencies- legal aspect & procedures involved in buying a land & construction of house.	10

Course Code- DSC-17(P)	Course Tittle- Housing and Space Management (Practical)	
Practical	• Use of architectural symbols in designing a house. • Develop a house plan/ floor plan for low-income group • Develop a house plan/ floor plan for Middle income group • Develop a house plan/ floor plan for High income group • Visit an onsite project related to housing to get deep insight of practical implication	*No. of Lectures* 30

Suggested Readings:

- Design Fundamentals in Architecture: V.S Pramar
- Management in Family Living: Paulena Nickell and Jean Muir Dorsey
- Home Management: MA Varghese, N N Ogale and K Srinivasan, New Age International Publishers.
- How to build a House: Saskia Lacey
- Dwelling House Construction: Albert G.H Dietz

ourse ode- SC-18	**Course Tittle- Family Financial Management**	**Credits-** **Total (L-T-P): 4(4-0-0)**

ourse Outcomes:

- *To develop understanding of concepts of income and expenditure among families.*
- *Create and manage a realistic family budget.*
- *Use credit wisely and manage debt effectively.*
- *Set and plan for financial goals (short- and long-term).*
- *Identify financial risks and select suitable insurance.*
- *Make informed consumer and investment decisions.*

it	*Topic*	*No. of Lectures*
it 1	Importance of personal and family finance, Income concepts: production income, money income, hidden income, flow of goods and services,	15
it 2	Financial Planning i) Steps of successful financial planning; Analyzing income, income profiles, methods of handling money; Family life stages and use of money.	15
it 3	Budget; types, steps, advantages and disadvantages Credit, types, sources(rural-urban), use of credit and saving and investment; objectives, types of saving/ investment, saving institutions.	15
it 4	Taxation: objectives, characteristics, classification, advantages and disadvantages	15

Suggested readings:

- Koontz.H. and O'Donnel C., 2005, Management – A systems and contingency analysis of managerial functions. New York: McGraw-Hill Book Company
- Kreitner. 2009, Management Theory and Applications, Cengage Learning: India
- Rao V.S. and Narayana P.S., Principles and Practices of Management, 2007, Konark Publishers Pvt. Ltd.
- Sawhney, H.K. & Mital, M.,2007, Family Finance & Consumer Studies, Elite Publishing House Pvt. Ltd.
- Seetharaman, P. and Sethi, M.,2001, Consumerism: Strength and Tactics, New Delhi: CBS Publishers.

Course Code- DSC-19	Course Tittle- Community Nutrition	Credits- Total (L-T-P): 4(3-0-1)

Course Outcomes:

- *To understand the importance of Community health nutrition and its role*
- *To gain knowledge on different ongoing nutrition programmes.*
- *To study the different methods for assessment of nutritional status*

Unit	Topic	No. of Lectures
Unit 1	**Concept and scope of Community Nutrition:** Definition, Concept and Scope of public health nutrition • Objectives, principles and scope of nutrition and health education and its promotion • Role of Public nutritionist	05
Unit 2	**Nutritional problems and their implications:** Etiology, prevalence, clinical features and preventive strategies of Under nutrition – • Protein energy malnutrition, nutritional anemia, vitamin A deficiency, iodine deficiency disorders. • Over nutrition- obesity, coronary heart disease, diabetes. • Fluorosis	10
Unit 3	**Assessment of nutritional Status:** • Objectives and importance • Methods of Assessment ➢ Direct- Clinical signs, nutritional anthropometry, biophysical tests. ➢ Indirect- Diet Surveys, Statistics.	15
Unit 4	**International and National Nutrition Policy and Programme** • International Agencies and their functions: World Health Organization (WHO), Food and Agriculture Organization (FAO), United Nations International Children's Emergency Fund (UNICEF), Cooperatives for Assistance & Relief Everywhere (CARE). • National Agencies and their functions, Indian Council of Agriculture (ICAR), Indian Council of Medical Research (ICMR), National Institute of Nutrition (NIN), National Institute of Public cooperation & child development (NIPCCD)	15

Course Code- DSC-19(P)	Course Tittle- Community Nutrition (Practical)	
Practical	• Assessment of nutritional status-Dietary method, anthropometric method, biochemical method • Anthropometry- weight and height measurements: Preschool age, School age, Females • Interpretation of data on the basis of BMI of ten numbers of adolescents.	*No. of Lectures* 30

Suggested Readings:

- B Srilakshmi, Nutition Science, New Age Publication
- Park K (2011) Park's Text book or Preventive and Social Medicine, 21st Edition, M/S Banarasidas Bhanot Publisher, Jabalpur, India Reference Bo
- Wadhwa A and Sharma S (2003) Nutrition in community – A Text book, Elite Publishing House Pvt. Ltd New Delhi
- Park K (2011) Park's Text book or Preventive and Social Medicine, 21st Edition, M/S Banarasidas Bhanot Publisher, Jabalpur, India Bamji MS Krishnaswamy K and Brahman GNC (Eds) (2009), Text Book of Human Nutrition 3rd Edition, Oxford and IBH Publishing Co Pvt Ltd New Delhi

Course Code- DSC-20	Course Tittle- Information Communication and Technology	Credits- Total (L+T+P): 4(3+0+1)

Course Outcomes:

- *To understand the fundamentals of information and communication technology.*
- *To develop proficiency in using digital tools relevant to home science disciplines.*
- *To explore the application of ICT home science*
- *To promote the use of ICT for research, data analysis, and dissemination of knowledge.*
- *To enable students to use ICT for creating educational and extension materials.*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Introduction to ICT** • Definition, scope and importance of ICT • Components of ICT: Hardware, Software, Networks • Role of ICT in education and home science	**10**
Unit 2	**Basics of Computer Systems** • Operating systems: Windows and Linux • Word processing (MS Word / Google Docs) • Spreadsheet handling (MS Excel / Google Sheets) • Presentations (MS PowerPoint / Canva)	**10**
Unit 3	**Internet and Communication Tools** • Internet browsing, search engines, and digital libraries • Email, video conferencing, and social media tools • Use of WhatsApp, YouTube, Instagram for education and outreach	**10**
Unit 4	**ICT in Extension and Communication** • Development of IEC (Information, Education, Communication) materials • Audio-visual aids: video production, photo editing, and poster making • E-learning platforms (MOOCs, SWAYAM, NPTEL) • Mobile apps for nutrition, child development, textiles, etc.	**15**

Course Code- DSC-20P)	Course Tittle- Information Communication and Technology (Practical)	
Practical	• Creating documents, spreadsheets, and presentations • Designing digital posters or brochures using Canva or MS Publisher • Conducting a survey using Google Forms and analyzing results • Using SPSS or Excel for basic data analysis, • Developing short educational videos for extension purposes	*No. of Lectures* **30**

Suggested Readings:

- **Rajaraman, V.** – *Fundamentals of Computers*, PHI Learning Pvt. Ltd.
- **Sinha, P.K. & Sinha, P.** – *Computer Fundamentals*, BPB Publications
- **Goel, D. & Goel, R.** – *Computer Fundamentals and Applications*, Sultan Chand & Co.
- **Basandra, S.K.** – *Computers Today*, Galgotia Publications
- **IGNOU Study Material** – Bachelor's Degree Programme: *Application of Computers in Home Science*

Course Code- DSC-21	**Course – Assessment of Nutritional Status**	**Credits- Total (L-T-P): 4(3-0-1)**

Course Outcomes:

- *Understand the concepts, objectives, and importance of nutritional assessment.*
- *Identify and interpret clinical signs and symptoms of nutritional deficiencies.*
- *Accurately perform and analyze anthropometric measurements across age groups.*
- *Conduct dietary assessments using methods like 24-hour recall and food frequency questionnaires.*
- *Understand biochemical indicators and their role in detecting nutrient deficiencies.*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Introduction to Nutritional Assessment** Concept, scope, objectives and importance of nutritional assessment. Types of malnutrition: undernutrition, overnutrition, micronutrient deficiencies, Indicators of nutritional status	10
Unit 2	**Direct Methods of Nutritional Assessment** **a) Clinical Assessment:** Signs and symptoms of deficiency diseases, Use of clinical signs in public health **b) Anthropometric Assessment:** Common anthropometric measurements: weight, height, MUAC, skinfold thickness, Growth monitoring and charts (WHO, IAP), BMI, WHR, and other indices for different age groups, Interpretation of anthropometric data. **c) Biochemical Assessment:** Common biochemical indicators (Hb, serum proteins, vitamins, etc.), Use in detecting micronutrient deficiencies, Sample collection, preservation, and interpretation basics.	20
Unit 3	**Indirect Methods of Nutritional Assessment** Dietary assessment techniques: • 24-hour recall • Food frequency questionnaire (FFQ) • Diet history • Weighment method Advantages and limitations of each method, Food consumption scoring.	10
Unit 4	**Ecological and Socioeconomic Assessment** • Role of environment, sanitation, education, income, and food security. • Assessment of living standards, housing, access to healthcare and clean water. • Use of indices like HDI and MPI (Multidimensional Poverty Index).	5

Course Code- DSC-21(P)	Course – Assessment of Nutritional Status (Practical)	
Practical	**Introduction to Nutritional Assessment** • Overview of assessment techniques (ABCD method: Anthropometric, Biochemical, Clinical, Dietary). **Anthropometric Measurements** • Height and Weight Measurement • BMI Calculation and Interpretation • Mid Upper Arm Circumference (MUAC) • Skinfold Thickness (using calipers) • Head and Chest Circumference (for infants and young children) • Waist-Hip Ratio (WHR) and Waist Circumference **Clinical Assessment** • Identification of visible signs of nutrient deficiencies (e.g., goiter, anemia, Bitot's spots, scurvy). • Use of clinical checklists for different age groups. **Dietary Assessment Techniques** • 24-Hour Dietary Recall • Food Frequency Questionnaire (FFQ) • Diet History Method • Weighment Method • Food Diary Record • Use of food composition tables to calculate nutrient intake. **Field/Community Work** • Conducting nutritional surveys in college campus or nearby community. • Collecting and analyzing data from 5–10 individuals.	*No. of Lectures* 30

Suggested Readings:

- Gopalan, C., Rama Sastri, B. V., & Balasubramanian, S. C. (2012). *Nutritive value of Indian foods* (Revised & Updated ed.). National Institute of Nutrition, ICMR.
- Bamji, M. S., Krishnaswamy, K., & Brahmam, G. N. V. (2009). *Textbook of human nutrition* (3rd ed.). Oxford & IBH Publishing Co. Pvt. Ltd.
- Swaminathan, M. (2003). *Advanced textbook on food and nutrition: Volume I & II* (2nd ed.). The Bangalore Printing and Publishing Co. Ltd.
- Park, K. (2023). *Park's textbook of preventive and social medicine* (27th ed.). Banarsidas Bhanot Publishers.
- Mudambi, S. R., & Rajagopal, M. V. (2012). *Fundamentals of foods, nutrition and diet therapy* (6th ed.). New Age International Publisher

Course Code-DSC-22	Course Tittle-Advanced Food Science	Credits-Total (L-T-P): 4(3-0-1)

Course Outcomes:

- *Understand advanced concepts in food science and their applications in the food industry.*
- *Demonstrate knowledge of food chemistry, biochemistry, processing, and preservation techniques.*
- *Evaluate and analyse emerging trends and technologies in food science.*
- *Apply critical thinking and problem-solving skills to address complex issues in food science.*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Introduction to Food Science.** Effect of cooking and processing techniques on nutrients, Sensory evaluation of food. **Cereals, Millets and Pulses:** Composition and nutritive value, Cereal cookery, Effect of cooking, processing and storage in nutritive value. Methods for improving nutritional quality of foods-fermentation, germination, supplementation, fortification.	10
Unit 2	**Vegetables and Fruits-** Type, Composition, Nutritive value, Effect of cooking, processing and storage on pigments and nutritive value, Post-harvest changes. **Milk and milk products-** Nutritional composition, Properties, Processing, Storage and Packaging. Effects of heat, acid and enzyme on its quality, Milk Cookery. **Sugar:** Type, Function and Nutritional composition of sugar. Sugar cookery.	15
Unit 3	**Egg-** Structure and Nutritional composition of egg, Evaluation of egg quality, Egg cookery. **Flesh Food-** Type, Structure and Nutritional composition, Effect of cooking, processing and storage in nutritive value. Ageing, Tenderization, Curing.	10
Unit 4	**Fats and Oils-** Type, Nutritive value and Function. Its role and importance. **Beverages and Spices**-Classification and Importance. Food toxins, Food Additives, Adulterants, Preservatives, Packaging.	10

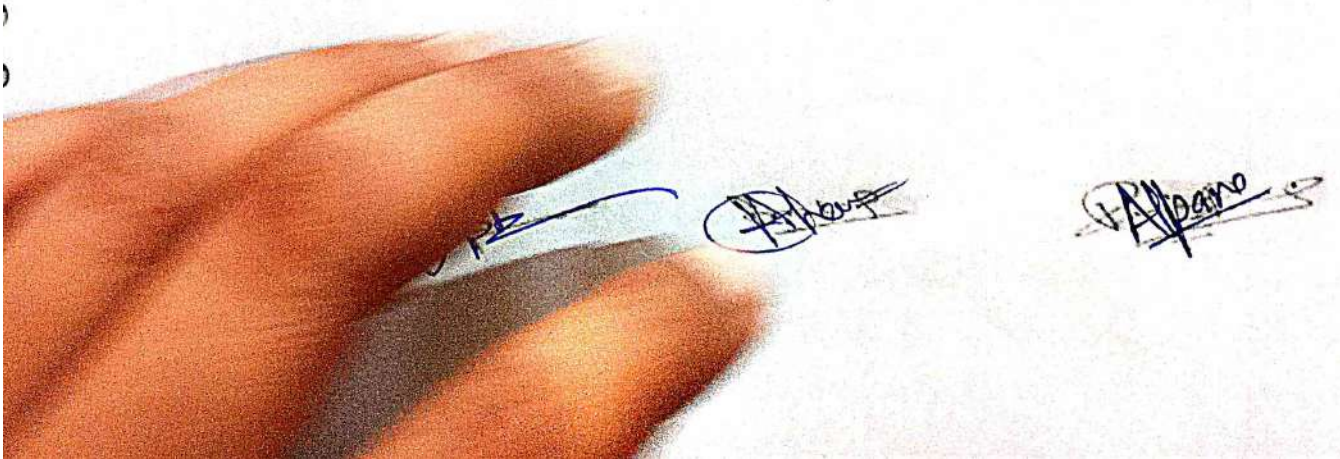
Suggested Readings:-

- Manay, M. and Manay, S.N. (2014). Food Facts and Principles. New Age International (P) Limited, New Delhi.
- Meyer, .L.H (1987). Food Chemistry. CBS Publishers.
- Srilakshmi, B. (2015). Food Science. New Age International (P) Limited, New

Course Code- DSC-21(P)	Course – Advanced Food Science (Practical)	
Practical	**Cereal and Starch Science** • **Popping of cereals** (e.g., maize, amaranth, rice): Study volume expansion, moisture loss, and sensory properties. • **Parching of pulses and cereals** (e.g., Bengal gram, wheat): Observe changes in flavor, texture, and browning reactions. • Gelatinization and retrogradation of starch. • Effect of sugar, acid, and temperature on starch-thickened products. **Protein Foods** • Coagulation of egg and milk proteins under different conditions. • Foaming and emulsifying properties of egg white and soy flour. • Effect of heat, pH, and salt on protein denaturation. **Lipids** • Determination of smoke point and comparison of oils. • Detection of rancidity (acid value/peroxide value). • Preparation and analysis of emulsions (e.g., salad dressing, mayonnaise). **Natural Pigments and Color Reactions** • Effect of pH and cooking on: • Chlorophyll (green vegetables) • Carotenoids (carrots, pumpkin) • Anthocyanins (red cabbage, beetroot) **Browning Reactions** • **Enzymatic browning** in apples and its inhibition. • **Non-enzymatic browning** (Maillard reaction) in roasted/baked products. **Sugar Cookery** • Stages of sugar syrup (thread, soft ball, hard ball). • Preparation of crystalline (fudge) and non-crystalline (toffee) products. • Role of interfering agents in sugar crystallization. **Sensory Evaluation** • Hedonic rating, paired comparison, triangle test. • Sensory profiling of popped and parched products.	*No. of Lectures* 30

Suggested Readings:-

- Manay, M. and Manay, S.N. (2014). Food Facts and Principles. New Age International (P) Limited, New Delhi.
- Meyer, .L.H (1987). Food Chemistry. CBS Publishers.
- Srilakshmi, B. (2015). Food Science. New Age International (P) Limited, New



DETAILS OF DISCIPLINE SPECIFIC ELECTIVES (DSE) COURSES

Course Code- DSE-1	Course Tittle- Program Planning for Rural Families	Credits- Total (L-T-P): 4(4-0-0)

Course Outcomes:

- *Understand the needs and challenges of rural families.*
- *Analyze the social, economic, and cultural context of rural communities.*
- *Design and develop effective programs to address the specific needs of rural families.*
- *Implement and evaluate the impact of rural development programs.*
- *Promote sustainable development and empowerment among rural families.*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Programme Development:** a) Definition, scope, principles, objectives, Steps in program development. Programme planning: concepts, principles, components. b) Steps in programme planning. c) Professional abilities needed by planners,Criteria for good programme planning.	15
Unit 2	Programme implementation, identification of local leaders, local bodies,and govt. organization for development of family orient program.	15
Unit 3	Role of local leaders, extension agencies, voluntary and non-voluntary organization for planning and execution of programmes. Constraints in Implementing development programmes at grass root level.	15
Unit 4	Monitoring and evaluation of extension programmes.	15

Suggested readings:

- Dhama, O.P. and Bhatnagar, O.P. (1980). Extension and Communication for Development. Oxford and IBH.
- Dhama, O.P. (1986) Extension and Rural Welfare. Rural Prasad and Sons, Agra.
- Singh, Ranjit (1987). A Text Book of Extension Education, Sahitya Kala Prakashan, Ludhiana.
- Supe S.V. (1987). An Introduction to Extension Education, Oxford and IBH Publishing Co. New Delhi.

Course Code- DSE-2	Course Tittle- Human Physiology	Credits- Total (L-T-P): 4(4-0-0)

Course Outcomes:

- *Gain the basic knowledge of human anatomy and physiology.*
- *Define the main structures composing human body.*
- *Explains structure and functions of cells, tissues and organs, systems of the human body.*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Introduction to Human body:** • Organs, tissue and cell. • Cell structure, cellular organ cell and their functions. **Introduction to blood system:** • Blood - Composition and functions,Plasma Protein -Composition and functions.	15
Unit 2	**Endocrine system:** • Overview of endocrine system, feedback mechanism/cascade. • Structure of main endocrine glands and their functions: Pituitary, Thyroid and Pancreatic hormones. **Cardiovascular system:** • Structure of heart, circulations, cardiac output (Definition and factors affecting). • Blood pressure (Definition and factors affecting)	15
Unit 3	**Digestive system:** • Overview of the Gastrointestinal Tract, Organization and functions. • Structure and functions of Stomach, Liver, Gallbladder, Pancreas	15
Unit 4	**Excretory System:** • Structure and functions of kidney and nephrons. • Process of urine formation.	15

Suggested Readings:

- Ganong WF (2014). Review of Medical Physiology, 24th ed. McGraw Hill.
- Auther, J. Vendors (2014) Human Physiology Mechanism of body function McGraw HillBook Co.
- Ross and Wilson (2013). Anatomy and Physiology in health and illness, 11th ed.Medical Division of Longman Group Ltd. Guyton,
- A.C. and Hall, J.E.(2000)Textbook of Medical Physiology.10thed. India:Harcourt Asia
- Das, A.(2004)Medical Physiology-Vol. I and II 3 Ltd
- S.R.(2000)Principles of Anatomy and Physiology.9th ed.John Wiley and Sons.Inc.
- Chaudhari S K.(2000) Concise Medical Physiology.3rd.Edition. Central.
- Mahapatra, A.B.S.(2003):Essentials of Medical Physiology.3rd Edition. Current BooksInternational.

Course Code- DSE-3	Course Tittle- Therapeutic Nutrition	Credits- Total (L-T-P): 4(3-0-1)

Course Outcomes:

- *Knowledge of principles of diet therapy*
- *Understanding the various therapeutic modification of normal diet*
- *Ability to counsel the persons and individuals about dietary intakes and modifications*

Unit	*Topic*	*No. of Lectures*
Unit 1	Principles of nutrition care: nutrition care process, therapeutic adaptation of the normal diet, progressive diets: clear fluid, full fluid, soft and regular.	10
Unit 2	Metabolic alteration during fever of short and long duration, etiology, clinical features and nutritional management of infections and fevers: typhoid, tuberculosis	10
Unit 3	Etiology, clinical features, and nutritional management of weight imbalances, overweight/ obesity, underweight. Eating disorders and its types. Etiology, clinical features, basic diagnosis and nutritional management of diarrhea, constipation, peptic ulcer, gastritis, ulcerative colitis	15
Unit 4	Clinical characteristics, risk factors, dietary management and complications in diabetes mellitus, liver diseases: Hepatitis, cirrhosis, kidney diseases: Glomerulonephritis, nephrosis, renal failure, urolithiases (kidney stones)	10

Course Code- DSE-3(P)	Course Tittle- Therapeutic Nutrition (Practical)	
Practical	• Planning and preparation of diets using exchange lists. • High fibre and low residue diet. • Diet planning during gastrointestinal disorders. • Diet planning during liver disorders. • Diet planning in diabetes. • Diet planning in heart diseases/ fat-controlled diet. • Diet planning in Kidney diseases. • Visit to a hospital which have dietetics department to get an insight of diet counseling of the patients.	*No. of Lectures* 30

Suggested readings:

1. Dietitics: B Srilakshmi, New age international
2. Normal and therapeutic nutrition: C.H Robinson
3. Clinical Dietetics and Nutrition: F.P Antia and Philip Abraham
4. Manual of Nutrition and Therapeutic Diet: T.K Indrani
5. Principles of Therapeutic Nutrition and Dietitics: Avantika Sharma

Sourse Code- SE-4	Course Tittle- Nutrition Education	Credits- Total (L-T-P): 4(4-0-0)

Sourse Outcomes:

- *Knowledge of principles of diet therapy*
- *Understanding the various therapeutic modification of normal diet*
- *Ability to counsel the persons and individuals about dietary intakes and modifications*

Unit	*Topic*	*No. of Lectures*
Unit 1	Objectives, principles and importance of nutrition education in a community.	15
Unit 2	Identification of nutritional problems and target groups. Nutritional surveys, National Nutrition Monitoring Bureau, Deficiency diseases and public health problems- Vitamin A, Iron and Iodine deficiencies; other micronutrient deficiencies.	15
Unit 3	Communication techniques: Process, its components. Communication techniques: Mass group and individual; advantages and disadvantages.	15
Unit 4	Theory and practice of audio- visual teaching. Learning by doing, Learning by observation, symbolic experience. Classification and use of audiovisual aids: Electronic aids, non-projected and three dimensional. Selection and evaluation of audio-visual aids. Nutrition education: Planning effective programmes for target groups. Developing appropriate messages. Assessment of nutritional status: Meaning, need, objectives and importance Direct: clinical signs, nutritional anthropometry, biochemical test Indirect: Diet surveys Food and Nutritional Security: Concept, issues and schemes.	15

Suggested Readings:

- B Srilakshmi, Nutition Science, New Age Publication
- Park K (2011) Park's Text book or Preventive and Social Medicine, 21st Edition, M/S Banarasidas Bhanot Publisher, Jabalpur, India Reference Bo
- Wadhwa A and Sharma S (2003) Nutrition in community – A Text book, Elite Publishing House Pvt. Ltd New Delhi
- Park K (2011) Park's Text book or Preventive and Social Medicine, 21st Edition, M/S Banarasidas Bhanot Publisher, Jabalpur, India Bamji MS Krishnaswamy K and Brahman GNC (Eds) (2009), Text Book of Human Nutrition 3rd Edition, Oxford and IBH Publishing Co Pvt Ltd New Delhi.

Course Code- DSE-5	Course Tittle- Traditional Textiles and Costumes of India	Credits- Total (L-T-P): 4(3-0-1)

Course Outcomes:

- *Understand the major traditional textiles and regional costumes of India, including their historical, cultural, and geographic significance.*
- *Understand the traditional techniques used in Indian textile crafts such as weaving, dyeing, printing, and embroidery.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Traditional woven textiles of India: Decca muslin and jamdani sarees, Baluchar sarees, Pochampalli sarees, Patola and Ikat sarees, Kanchipuram sarees, Chanderi Sarees, Maheswari sarees, Vichitrapuri sarees and Brocades Woven shawls of Kashmir, Himanchal Pradesh and North- eastern states.	10
Unit 2	Printed and painted textiles: Block printed textiles, Tie and Dyed textiles, Kalamkari and Madhubani	05
Unit 3	Embroideries of different states of India: Kashida of Kashmir, Chamba rumal, Phulkari and bagh of Punjab Embroideries of Gujrat, Chikankari and zari work of Uttarpradesh Kanthas of Bengal, Manipuri embroidery, Kasuti of Kartakaka, embroidery and patchwork of Bihar	15
Unit 4	Traditional costumes of India: Kashmir, Punjab, Uttar Pradesh, West Bengal, North-eastern states, Rajasthan, Gujrat,Maharashtra, Uttarakhand Status of Traditional Textiles in Modern India: Evolution and socio-economic significance of Khadi, Handloom and Handicraft sector. Sustenance of traditional textile crafts. Conservation of Textiles: Factors affecting deterioration of textiles, Care and storage of textiles	15

Course Code- DSE-5(P)	Course Tittle- Traditional Textiles and Costumes of India (Practical)	
Practical	• Sample preparation of traditional Indian embroideries and machine embroideries. • Preparation of an article using different hand embroideries. • Preparation of an article using different machine embroideries. • Documentation of Indian textile and costumes. • Creative projects in sketching and preparing geometrical, abstract, stylized, natural, ethnic and traditional motifs with different colour schemes. • Visit museum/ gallery/ self-help group textile centers to get an indepth knowledge about traditional/ local textile..	*No. of Lectures* 30

Suggested readings:

- Flynnn,D. 1971. Costumes of India. New Delhi, Oxford and IBH Publishing Company.
- Fabin, C. 1977. Indian Dress. New Delhi, Orient Longman Ltd.
- Pandit, S. 1976. Indian Embroidery: Its Variegated Charms. Baroda.

- Chattopadhyaya, K. 1985. The Glory of Indian Handicraft. New Delhi Calrion Books.

Course Code- DSE-6	**Course Tittle- Food Science**	**Credits- Total (L-T-P): 4(4-0-0)**

Course Outcomes:

- *Understand the basic concepts and principles of food science, including food composition, chemistry, microbiology, and processing.*
- *Explain the physical, chemical, and biological properties of major food components.*
- *Analyze the causes of food spoilage and the role of microorganisms in food quality, safety, and fermentation.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Definition and scope of food science: Structure, composition, Products, nutritional contribution, selection and changes during cooking of the following food group: cereals, pulses, vegetables and fruits.	15
Unit 2	Structure, composition, Products, nutritional contribution, selection and changes during cooking of the following food group: milk and milk products; meat, fish, poultry and eggs; nuts and oils; spices and condiments; sugar and jaggery	15
Unit 3	Processing of cereals, millets and legumes by traditional and unconventional methods. i) Changes in nutritional quality as affected by pounding and milling ii) Puffing and flaking, cooking, parboiling iii) Fermentation, sprouting, malting Processing of oil seeds for extraction of oil and use of oilseed cakes in human nutrition	15
Unit 4	Traditional methods for storage of grains viz cereals, millets legumes and oilseeds: limitations, losses in nutrition quality as influenced by insect and fungal infestation. Current strategies for storage of food grains at national and international level.	15

Suggested Readings:-

- Manay, M. and Manay, S.N. (2014). Food Facts and Principles. New Age International (P) Limited, New Delhi.
- Meyer, .L.H (1987). Food Chemistry. CBS Publishers.
- Srilakshmi, B. (2015). Food Science. New Age International (P) Limited, New

Course Code- DSE-7	Course Tittle- Child Rights & Gender Empowerment	Credits- Total (L-T-P): 4(4-0-0)

Course Outcomes:

- *Understand the fundamental concepts of child rights, gender equality, and empowerment within the national and international legal frameworks.*
- *Understand national and international laws, policies, and conventions (e.g., UNCRC, CEDAW, POCSO) related to child protection and gender justice.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Understanding Child Rights: Meaning of Child Rights and Convention on Child Rights. Knowing disadvantage and exclusion in relation to children Demographic profile of the child in India. The role of state, family and children in promotion and protection of child rights	15
Unit 2	Children in Difficult circumstances: Street children, working children and homeless children, Child Abuse, Child Trafficking, Children in conflict with law, Laws and policies.	15
Unit 3	Conceptualizing Gender: Defining terms- sex, gender, masculinity, femininity. Socialisation for gender- gender roles, gender stereotypes Patriarchy and social institutions, Perspectives on feminism	15
Unit 4	Gender Empowerment: Demographic profile, Issues and concerns related to girls and women in India, Media and gender, Laws, policies and programmes for girls and women in India	15

Suggested Readings:

- Bajpai, A. (2006). Child Rights in India: Law, Policy and Practice. Oxford University Press.
- Agarwal, A. & Rao, B.V. (2007). Education of Disabled Children. New Delhi: Eastern Book Corporation.
- Agnes, F. (1999). Law and Gender Inequality: The politics of Women's Rights in India. Oxford University Press.
- Kishwar, M. (1999). Off the Beaten Track: Rethinking Gender Justice for Indian Women. New Delhi: Oxford University Press.
- Satyarthi, K. and Zutshi, B. (Ed) (2006). Globalization, Development and Child Rights. New Delhi: Shipra Publication.
- Saikia, N. (2008). Indian women: A socio-legal perspective. New Delhi: Serials Publication.

Course Code- DSE-8	Course Tittle- Early Childhood Care and Education (ECCE)	Credits- Total (L-T-P): 4(3-0-1)

Course Outcomes:

- *Understand the principles and philosophy of early childhood care and education.*
- *Describe the physical, cognitive, emotional, and social developmental milestones in children from birth to eight years.*
- *Apply child-centered and developmentally appropriate pedagogical approaches in early childhood settings.*
- *Recognize the significance of nutrition, health, and safety in early childhood care.*
- *Analyze the role of family, community, and culture in shaping early childhood education.*
- *Plan and implement inclusive and equitable learning environments for young children.*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Early childhood Care and Education:** • meaning, Importance, Need, and Scope of ECCE. • Principles and Objectives of ECCE • Types of Preschools/Programmes: Play Centres, Day Care, Montessori, Kindergarten, Balwadi, Anganwadi etc.	10
Unit 2	**Historical Trends (Overview)** Contribution of the following thinkers to the development of ECCE (their principles, applications and limitations) in the context of ECCE. Pestalozzi, Rousseau, Froebel, Maria Montessori, John Dewey, GijubhaiBadheka, TarabaiModak, M.K. Gandhi, Rabindranath Tagore.	15
Unit 3	**Play-** Definition,Types, Characteristics. Role of play in overall development of children, Teacher's role., .Use of play way approach in the curriculum for young children	10
Unit 4	**Concept of management of ECCE.** • Material management: place/space, equipment, furniture etc. • Programme management: planning long and short-term program, considerations in planning, preparation required. • Personnel management: organization and administration, selection, recruitment, supervision and monitoring • Financial management: Allocation of budget, income- expenditure balance and resource generation, Documentation: admission policy and record keeping • **Activities for ECCE:**	10

Course Code- DSE-8(P)	Course Tittle- Early Childhood Care and Education (ECCE)- (Practical)	
Practical	• Visit to Nursery school/ ECCE centres for observation and evaluation from the view of material, space, personnel, finance and documentation. • Evaluation of daily, weekly, monthly schedule of activities prepared. • Preparation of master lesson plan. • Preparation of teaching aids. • Conducting activities for children in lab nursery class room/ aganwadis/ balwadis. • Preparation and conduction of parent teacher meeting or conduct a Workshops in any two of the following a) Understanding childhood nutrition and health b) Developing work sheets to teach concept c) Enhancing social and language skills d) Music, movement and drama for children	*No. of Lectures* **30**

Suggested Readings:

- Aggarwal, J. C. (2007). Early Childhood Care and Education: Principles and Practices. Shipra: New Delhi.
- Arni, K. and Wolf G. (1999). Child Art with Everyday Materials. TARA Publishing.
- Mohanty, J. Mohanty, B. (1996). Early childhood care and Education. Deep And Deep Publication, New Delhi.
- Morrison, G. S. (2003). Fundamentals of early childhood education. Merrill/Prentice Hall: Virginia
- Singh, A. (1995). Playing to Learn: A training manual for Early Childhood Education. M. S. Swaminathan Research Foundation.
- Swaminathan, M. (1998). The First five Years. Sage Publications.

Course Code-DSE-9	**Course Tittle-Nutritional Epidemiology**	**Credits-Total (L-T-P): 4(4-0-0)**

Course Outcomes:

- *Discuss methodological issues in the use and interpretation of nutritional methods.*
- *Apply methodological principles when implementing research studies or interpreting the scientific literature*
- *Describe the nature and origin of error in nutritional data, reliability and validity of measures, and methodological steps to address problems/limitations.*
- *Able to discover dietary assessment errors and deviation.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Introduction to Epidemiology, Nutritional epidemiology and Epidemiological Research. Meaning, Definition, purpose and principle of Epidemiology.	15
Unit 2	Nutritional epidemiology- Measurements. Vital statistics and Use of Vital Statistics in epidemiology.	15
Unit 3	National Goals, Policies, Schemes and programme related to nutrition and health. Nutrition related health goals and millennium Development Goal (MDG). National Rural Health Mission (NHRM)	15
Unit 4	Health care Delivery system in India Universal Immunization Programme Initiative for prevention of disease National Food Security Act (NFSA)2013	15

Suggested Readings:

- Nutritional Epidemiology, 3rd Edition by Walter Willett.
- Epidemiology: A Text in Clinical Science, 7th Edition by Rothman, Greenland, and Lash.
- Modern Nutrition in Health and Disease, 14th Edition by Shils, Shike, Ross, Caballero, Cousins, and Ross.

Course Code- DSE-10	Course Tittle- Fashion Studies	Credits- Total (L-T-P): 4(4-0-0)

Course Outcomes:

- *Adapt their artistic abilities to support their future design careers.*
- *Develop a systematic, critical approach to problem solving at all levels of the design process.*
- *Students will able to do trend forecast that is a fundamental requisite while working as a fashion designer/ merchandiser.*
- *They will be able to create a sustainable design with limited resources which is an essential quality of a designer, merchandiser or researcher.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Importance of clothing: Clothing functions and theories of origin, Clothing terminology, Selection of clothes for different age, climate, personality, sex, and occasions. Selection and Evaluation of ready-made garments. Body adornment in some societies.	15
Unit 2	Fashion: Fashion terminology, Fashion cycle, Sources of fashion, Factors favoring and retarding fashion, Fashion Forecasting-Seasons, sources, steps in forecasting.	15
Unit 3	Adoption of fashion: Consumer groups- fashion leaders, followers Adoption process: Trickle-down theory, Trickle across theory, bottom-up theory	15
Unit 4	Fashion centers and designers of the world Role of designer Fash fashion centers and leading designers' designs, Accessories, Elements and principles of design, Structural and applied design	15

Suggested readings:

- Brown, Patty, Rice J., 1998, Ready to Wear Apparel Analysis. Prentice Hall.
- Marshall S G, Jackson H O, Stanley MS, Kefgen M &Specht T, 2009, Individuality in Clothing & Personal Appearance, edition, Pearson Education, USA Tate.
- S.L., Edwards M.S., 1982, The Complete Book of Fashion Design, Harper and Row Publications, NewYork.
- Corbman, P.B., (1985) Textiles- Fiber to Fabric, Gregg Corbman, P.B.

Course Code- DSE-11	**Course Tittle- Introduction to Indigenous Food and Food Practices of Uttarakhand**	**Credits- Total (L-T-P): 4(3-0-1)**

Course Outcomes:

- *Identify and describe the traditional food systems of Uttarakhand.*
- *Understand the nutritional and therapeutic values of indigenous foods.*
- *Analyze the ecological sustainability of traditional food practices.*
- *Evaluate the challenges and threats to indigenous food systems in the modern context.*
- *Promote the revival and integration of traditional food practices into contemporary food systems.*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Introduction to Indigenous Food of Uttarakhand** • Overview of Uttarakhand's geography, climate, and agricultural influence on food • History and evolution of local food habits • Cultural and religious significance of traditional foods **Traditional Ingredients and Their Nutritional Value** • Staple grains: Mandua *(finger millet)*, Jhangora *(barnyard millet)*, Chaulai *(amaranth)* • Local pulses and legumes: Gahat *(horse gram)*, Bhatt *(black soybean)*, Rajma (red kidney% beans) • Wild edibles and forest foods: Lingda *(wild ferns)*, Kandali *(nettles)*, *Jambu (Himalayan herb).* • Dairy and fermented products: Buttermilk, Chhanch, Aaru *(fermented foods)*	15
Unit 2	**Indigenous Food Preparation and Cooking Methods** • Traditional cooking techniques: Woodfire cooking, stone grinding, fermentation • Seasonal food preservation techniques: Pickling, sun-drying, fermentation Local utensils and their impact on food flavors (iron kadhai, clay pots)	10
Unit 3	**Signature Dishes of Uttarakhand and nutritional benefits.** • **Main Course**: Chainsoo, Kafuli, Phaanu, Dubuk • **Breads**: Lesu, Mandua Roti, Singal • **Side Dishes**: Bhatt ki Churkani, Thechwani, Jakhiya Aloo **Desserts**: Jhangore ki Kheer, Singodi, Bal Mithai	10
Unit 4	**Indigenous Beverages and Herbal Nutrition** • Traditional drinks: Buransh *(Rhododendron)* Juice, Malta Sharbat, Seabuckthorn tea • Herbal infusions and their medicinal benefits • Ayurvedic aspects of Uttarakhandi food **Food Culture, Festivals, and Community Feasting** • Role of food in Uttarakhandi festivals *(Makar Sankranti, Harela, Ghughutiya)* Role of women in preserving and passing down culinary traditions	10

Course Code- DSE-9(P)	**Course Tittle- Introduction to Indigenous Food and Food Practices of Uttarakhand (Practical)**	
Practical	• Hands-on experience with **Madua** ***(Finger Millet)***, **Jhangora** ***(Barnyard Millet)***, **Gahat** ***(Horse Gram)***, **and Bhatt** ***(Black Soybean)***. • Traditional methods of grinding and processing grains. • Preparation of traditional Garhwali and Kumaoni dishes. • At least five(05)Product development for vulnerable groups by incorporating traditional millets, fruits, vegetables e.t.c.	30

Suggested Readings:

- **Negi, D. S. (2010).** *Traditional Food Systems of Uttarakhand: A Review*G.B. Pant Institute of Himalayan Environment and Development.
- **Kala, C. P. (2007).** *Local preferences of ethnobotanical species in the Indian Himalaya: implications for conservation and development*Journal of *Ethnobiology and Ethnomedicine*, 3(1), 7
- **Bahuguna, A. & Nautiyal, B. P. (2011).** *Wild Edible Plants of Uttarakhand Himalaya: Ethnobotanical Documentation* Central Himalayan Environment Association (CHEA).
- **Rao, R. R. (1996).** *Traditional Knowledge and Sustainable Development: Key Role of Ethnobiologists* *Journal of Ethnobiology*, 16(1), 1–14.

Course Code- DSE-12	**Course Tittle- Maternal and Child Nutrition**	**Credits- Total (L-T-P): 4(4-0-0)**

Course Outcomes:

- *Understand the physiological and nutritional needs during pregnancy and lactation.*
- *Identify the nutritional requirements of infants and young children (0–6 years).*
- *Evaluate the factors affecting maternal and child health, including cultural, socioeconomic, and environmental influences.*
- *Plan and recommend balanced, age-appropriate diets for pregnant/lactating women, infants, and young children.*
- *Understand the causes, consequences, and management of malnutrition in mothers and children.*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Pre-Conception Nutrition** Nutrition related disruptions in fertility, other preconception nutrition concerns e.g PCOS, eating disorders, PMS, Contraception, Diabetes Mellitus etc Nutrition during Pregnancy – -An overview of physiology of pregnancy (normal changes), Fetal development, critical periods of growth and development, pregnancy weight gain, Nutritional requirements during pregnancy (macro and micro nutrients), Dietary supplements, Role of exercise Common problems associated with pregnancy – Obesity, GDM, HIV, multifetal pregnancies	15
Unit 2	**Nutrition during Lactation** **Lactation Physiology** – Mammary gland development, Lactogenesis, Let-down reflex, human milk composition, Benefits of breast feeding, Nutrient needs of lactating mother and role of galactogogues **Breast Feeding issues** – Common conditions e.g Let-down reflex, position, identifying hunger and satiety, feeding frequency, supplements and maternal medications, Alcohol and other drug exposure	15
Unit 3	**Nutrition during infancy:** **Infant Nutrition** – New born growth assessment, infant development – motor, cognitive, GI system, feeding skills, complementary nutrition, nutrition needs of infants. **Common nutritional problems and concerns** –Colic, Anaemia, Caries, Allergies, Neonatal jaundice	15
Unit 4	**Nutritional needs of toddlers and preschoolers, children and preadolescents** • Child and Pre-adolescent Nutrition Concerns – Undernutrition, overweight, obesity, CVD, hypertension etc. An overview of physical activity guidelines for children	15

Suggested Readings:-

1. Bennion, H. (1979) *Clinical Nutrition*, New York Harper and Raw Publishers
2. Brown, J. E. (1998). *Nutrition Now,* West/Wadsworth: International Thomson Pub. Co.
3. Brown, J. E., Sugarman, I. J. (2002). *Nutrition through the Life Cycle*, Wadsworth Thomson Learning
4. Donald, B., MCColmick,. Bier, D. M. (1997). *Annual Review of Nutrition* (vol. 19)
5. Goodhart, R. S. S. and Shils, M. E. (1998). *Modern Nutrition in Health and Disease*. Philadelphia: Lea and Febiger.
6. Groff, J. L and Gropper, S. S. (1999). *Advanced Nutrition and Human Metabolism*, Belmount CA: Wads worth/Thomson Learning.
7. Jackson, M. S., Rees, Jane, M., Golden, Neville, H.; Irwin Charles, E. (ed) (1997). *Adolescent Nutritional Disorders*.
8. New York:The New York Academy of Science.
9. Lee, R. S. and Marcus, C. (1990) *Omega – 3Fatty Acids in Health and Disease*. – Marcel dekker Inc.

Course Code- DSE-13	**Course Tittle- Food Microbiology**	**Credits- Total (L-T-P): 4(4-0-0)**

Course Outcomes:

- *The field of Microbiology of different foods.*
- *Classification, morphology, reproduction, cultivation and microscopic examination of microorganisms.*
- *Causes and prevention of microbial spoilage and contamination of different foods..*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Introduction to Microbiology** i. Evolution of Microbiology ii. Characterization, classification and identification of microorganisms iv. Role and significance of microorganisms in foods	15
Unit 2	**Intrinsic parameters of foods that affect microbial growth.** i. pH ii. Moisture content iii. Oxidation – reduction potential (Eh) iv. Nutrient content v. Anti-microbial constituents vi. Biological structures	15
Unit 3	**Extrinsic parameters of foods that affect microbial growth.** i. Temperature of storage ii. Relative humidity of environment iii. Presence and concentration of gases in the environment	15
Unit 4	**Microbial flora, incidence and types of microbial spoilage in the following foods:-** i. Cereals, millets and their products ii. Pulses, legumes and their products iii. Nuts and oils seeds and their products iv. Vegetables and fruits and their products	15

Suggested readings:

- Adams, M.R. and Moss, M.O. (2005) *Food Microbiology* 1st edition, New Age International (P) Limited,Publishers, New Delhi.
- Banwant G,J, (2002) *Basic Food Microbiology* 2nd Edition, Chapman and Hall Inc., New York
- Frazier W.C. *Food Microbiology*,(2000) 2nd edition Tata Mc Graw – Hill Publishing Company Ltd. New Delhi.
- Jay J.M. (1992) *Modern Food Microbiology* 5th edition CBS Publishers and Distributors, New Delhi.
- Pelczar, M.J. Chan. C.S. and Krieg N.R. (1996) *Microbiology* 5th edition, tata McGraw – Hill Edition.
- Vasanthakumari R (2007) *Textbook of Microbiology* BI Publications Pvt. Ltd., New Delhi.

Course Code- DSE-14	**Course Tittle- Food Quality Analysis**	**Credits- Total (L-T-P): 4(3-0-1)**

Course Outcomes:

- *To impart foundational knowledge about the concept and importance of food*
- *To enable students to understand and apply national and international food quality regulations and standards*
- *To develop practical skills in evaluating food quality using sensory, physical, chemical, and microbiological parameters.*
- *To familiarize students with food quality management systems such as HACCP, ISO 22000, and GMP.*
- *To equip students with the ability to interpret food labels, certifications, and conduct basic laboratory analyses for food quality assessment.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Introduction to Food Quality • Definition and importance of food quality • Dimensions of quality: physical, chemical, sensory, nutritional, and microbiological • Food laws and regulations: FSSAI, BIS, AGMARK, Codex Alimentarius • Quality management systems: HACCP, ISO 22000, GMP, GHP	**10**
Unit 2	Sensory Evaluation of Foods • Principles of sensory analysis • Types of sensory tests: paired comparison, triangle test, ranking, hedonic rating • Panel selection, training, and evaluation • Application in product development and quality assurance	**15**
Unit 3	Physical and Chemical Analysis • Sampling techniques and sample preparation • Physical tests: color, texture, weight, size, bulk density, viscosity o Chemical tests:Proximate analysis, Moisture content (oven drying), Ash content o Protein (Kjeldahl method), Fat (Soxhlet method), Carbohydrates (Anthrone method), crude fibre, pH and titratable acidity, sugar estimation (Fehling's test, DNS method)	**10**
Unit 4	**Microbiological Quality of Food** • Types of food spoilage microorganisms • Total plate count, coliform test, yeast and mold count • Foodborne pathogens and safety indicators **Quality Control and Assurance in Food Industry** • Principles of quality control • TQM and tools (control charts, checklists, flowcharts) • Role of regulatory bodies (FSSAI, WHO, FAO) • Product recall, labeling, traceability, and certification	**10**

Course Code- DSE-14(P)	**Course Tittle- Food Quality Analysis (Practical)**	
Practical	• Sensory evaluation of selected food samples • Physical tests of foods : bulk density, viscosity (Bostwick/viscometer), colour • Estimation of moisture, ash, protein, fat, acidity, and salt in foods. • Microbial analysis: total plate count (demo or lab practice). • Interpretation of food labels and standards comparison. • Case study or visit report on food quality lab or industry.	*No. of Lectures* **30**

Suggested readings:

- **Ranganna, S.** – Handbook of Analysis and Quality Control for Fruit and Vegetable Products
- **Manay, S.N. & Shadaksharaswamy, M.** – Foods: Facts and Principles
- **Potter, N.N. & Hotchkiss, J.H.** – Food Science
- **FSSAI Training Manuals** – https://www.fssai.gov.in

Course Code- DSE-15	**Course Nutritional Management of Chronic Degenerative Diseases**	**Credits- Total (L-T-P): 4(4-0-0)**

Course Outcomes:

- *Identify dietary risk factors for major chronic diseases*
- *Evaluate nutritional needs of patients with degenerative conditions*
- *Design personalized diet plans for disease prevention and management*
- *Interpret lab values in relation to nutritional status*
- *Communicate dietary strategies effectively to patients/clients*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Introduction to Chronic Degenerative Diseases** • Definition and classification of chronic diseases • Epidemiology and global burden of CDDs • Risk factors: genetic, environmental, lifestyle-related • Role of inflammation and oxidative stress in disease progression.	15
Unit 2	**Cardiovascular Diseases (CVD)** • Atherosclerosis, hypertension, dyslipidemia, coronary artery disease • Risk factors: obesity, trans fats, sodium intake, smoking • Dietary approaches: DASH diet, Mediterranean diet, TLC diet • Role of fiber, antioxidants, and functional foods	15
Unit 3	**Diabetes Mellitus** • Types of diabetes: Type 1, Type 2, Gestational • Role of glycemic index and glycemic load • Carbohydrate counting and exchange system • Nutritional therapy goals for diabetes management and prevention of complications	15
Unit 4	**Obesity and Metabolic Syndrome** • Definition, classification, and assessment • Energy balance, thermogenesis, and metabolism • Role of macronutrient distribution in weight control • Nutritional interventions: calorie restriction, intermittent fasting, behavioral modifications **Cancer and Nutrition** • Etiology and types of cancer • Cancer cachexia and nutritional impact of treatments (chemo, radiation) • Nutrition during pre-treatment, treatment, and recovery phases • Anti-cancer dietary components (e.g., phytochemicals, antioxidants)	15

Suggested Readings:

- **Mahan, L. K., Raymond, J. L., & Escott-Stump, S.** (2020). *Krause's food & the nutrition care process* (15th ed.). Elsevier.
- **Ross, A. C., Caballero, B., Cousins, R. J., Tucker, K. L., & Ziegler, T. R.** (Eds.). (2020). *Modern nutrition in health and disease* (12th ed.). Wolters Kluwer.
- **Nelms, M., & Long, S.** (2020). *Medical nutrition therapy: A case study approach* (6th ed.). Cengage Learning.
- **World Health Organization (WHO).** (2005). *Preventing chronic diseases: A vital investment.* WHO Press.

Course Code- DSE-16	Course Tittle- Food Product Development	Credits- Total (L-T-P): 4(4-0-0)

Course Outcomes:

- To apply principles of food science in development of innovative product.
- Use of functional foods, novel (less utilized) ingredients in development of products.
- To identify a suitable packaging label and storage conditions for a developed product.
- To learn and apply principles of sensory evaluation.

Unit	*Topic*	*No. of Lectures*
Unit 1	Product development – Need for product development, factors influencing product development, Sensory evaluation during product life cycle. Trends in Social Change as a Base for New Product Development. Food product development in India, Advantages of new food product development and its new trends.	15
Unit 2	Food fortification- Objectives Principles Technologies. Food packaging Principles in the development of safe and protecting packing Packaging materials (metals, glass, paper and plastics)	15
Unit 3	Sweetening agents- Natural sweeteners, Artificial sweeteners, Composition and use of sweeteners.	15
Unit 4	Food additives- Functions, Uses, Chemical, technological and toxicological aspects of food additives.	15

Suggested Readings:

- Krishnaswamy, K. (2008). *Food product development and process innovation*. New India Publishing Agency.
- Ramaswamy, V. S., & Namakumari, S. (2013). *Marketing management: Global perspective Indian context* (5th ed.). McGraw-Hill Education India.
- Bhat, R. V., & Rao, B. S. N. (2009). *Modern food processing technology*. CBS Publishers & Distributors.
- Srivastava, H. C., & Kumar, S. (2006). *Food science and processing technology*. Kanishka Publishers.
- Joshi, V. K., & Pandey, A. (2012). *Food processing and preservation*. New India Publishing Agency.
- Srilakshmi, B. (2019). *Food science* (7th ed.). New Age International Publishers.

DETAILS OF GENERIC ELECTIVE (GE) COURSES

Course Code- GE-1	Course Tittle- Consumer Education	Credits- Total (L-T-P): 4(4-0-0)

Course Outcomes:

- *Understand consumer rights, responsibilities, and protection laws.*
- *Recognize deceptive advertising and scams.*
- *Make informed decisions about purchasing goods and services.*
- *Understand the impact of consumer choices on society and the environment.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Definition of consumer, rural vs urban consumer characteristics and problems.	15
Unit 2	Types of consumer problems, Changing nature of the business world –ecommerce, e-business. Environmental and Ethical Consumerism Sustainable Consumer Practices Understanding Eco-Labels & Ethical Branding The Impact of Consumer Choices on the Environment	15
Unit 3	Consumer protection and consumer protection agencies (FTC, BBB, CFPB) Warranties, returns, and refunds History of consumer movement in the developed and developing countries. Consumer rights and responsibilities. Consumer organizations – origin, functioning, role and types. Consumer protection and Government legislation – Act and orders.	15
Unit 4	Consumer cooperatives – role, history and growth in India, PDS Kendriya Bhandars. Basic legislative framework for consumer protection in India, Consumer Protection Act 1986 COPRA,Consumer protection act 2019 salient features. Standardization and quality control measures: ISI, FPO, AGMARK, ISO, Eco mark, Wool mark, Silk mark, Cotton mark, Handloom mark,BEE star labelling.	15

Suggested Readings:

- Khanna S.R., Hanspal S., Kapoor S. &Awasthi H.K., 2007, Consumer Affairs,Universities Press India Pvt. Ltd.
- Sawhney, H.K. & Mital, M.,2007, Family Finance & Consumer Studies, Elite Publishing House Pvt. Ltd.
- Seetharaman, P. and Sethi, M.,2001, Consumerism: Strength and Tactics, New Delhi: CBS Publishers.

Course Code- GE-2	**Course Tittle- Entrepreneurship Development**	**Credits- Total (L-T-P): 4(4-0-0)**

Course Outcomes:

- *Understand the fundamental concepts of entrepreneurship, including entrepreneurial mindset, innovation, and types of ventures.*
- *Analyze the challenges and risks associated with starting and managing a new venture, including legal, ethical, and funding aspects.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Introduction, Concept of Entrepreneur, Entrepreneurship and Enterprise, need and significance of entrepreneurship development in India, entrepreneurship growth process, Definition of Entrepreneurship	15
Unit 2	Types of entrepreneurs, characteristics of entrepreneurs. Entrepreneurial Motivation, challenges faced by women entrepreneurs.	15
Unit 3	Types of enterprises, market research, managing marketing, understanding markets and marketing, functions of marketing, 4Ps of Marketing	15
Unit 4	Financial Management –Concept, types and sources of finance, SWOT analysis	15

Suggested Readings:

- Gundry Lisa K. &Kickul Jill R.,2007, Entrepreneurship Strategy: Changing Patterns in New Venture Creation, Growth, and Reinvention, SAGE Publications, Inc.
- Bhawal, C. P. 2005. Entrepreneurship and Entrepreneurial Development. New Royal Company, Lucknow
- 2. Vasant Desai. (2011). Entrepreneurial Development Potential beyond Boundaries; Himalaya Publishing House.
- Taneja& Gupta, 2001, Entrepreneur Development- New Venture Creation, Galgotia Publishing Company.

Suggested Digital Platform:

https://www.nios.ac.in/online-course-material/secondary-courses/entrepreneurship- (249).aspx

http://ecoursesonline.iasri.res.in/course/view.php?id=242

Course Code- GE-3	**Course Tittle- Food Hygiene and Sanitation**	**Credits- Total (L-T-P): 4(4-0-0)**

Course Outcomes:

- *Understand the importance of hygiene and sanitation in ensuring food safety.*
- *Identify sources of contamination and foodborne hazards.*
- *Gain knowledge of national and international food safety regulations and hygiene protocols.*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Introduction to Food Hygiene** • Definition and importance of hygiene in food safety • Sources and types of contamination: physical, chemical, biological • Common foodborne illnesses and causative agents (bacteria, viruses, parasites)	15
Unit 2	**Personal Hygiene and Sanitary Practices** • Hand washing, grooming, protective clothing • Food handler responsibilities and health screening • Training and supervision for food safety	15
Unit 3	**Sanitation in Food Environments** • Cleaning vs. sanitizing • Types of cleaning agents and disinfectants • Sanitation procedures for food equipment, utensils, and surfaces • Cleaning schedules and documentation	15
Unit 4	**Environmental Hygiene and Waste Management** • Waste disposal methods in food service/production areas • Pest control: types of pests, control methods, preventive practices • Water supply and waste water treatment in food facilities • Air, light, and ventilation standards	15

Suggested readings

- Sivalingam, S. – *Food Hygiene and Sanitation*.A comprehensive Indian text covering hygiene practices, food handling, and industry protocols.
- Sunetra Roday. Food Hygiene and sanitation second edition.Tata Mc Graw Hill.

Course Code- GE-4	Course Tittle- NGO Management and CSR	Credits- Total (L-T-P): 4(4-0-0)

Course Outcomes:

- Understand the structure, types, and roles of NGOs in social development and policy advocacy.
- Analyze the legal frameworks, regulatory requirements, and governance models governing NGO operations in national and international contexts.

Unit	*Topic*	*No. of Lectures*
Unit 1	Meaning of NGO and GO. Difference between Government Organizations and NGO , characteristics of good NGO, Structure of NGO and functions of NGO	15
Unit 2	Historical Perspective of NGO, advantages of NGO, present status of NGO. Contribution of NGO in the Development. Role of Development Communicator in developing NGO.	15
Unit 3	Starting a NGO,: steps for starting NGO, registration of NGO, selection of personnel , training of personnel, proposal writing under NGO, identifying funding agencies, resource mobilization, planning, implementation and evaluation strategy under NGO, documentation, PR in NGO	15
Unit 4	NGO Management: Organizational types and structures, managing people and teams in NGOs, NGO management competencies, applying NGO principles and values, accountability and impact assessment for NGOs. Problems of NGO: Training, recruitment, funding, resource mobilization, documentation	15

Suggested Readings:

- S. Chandra, Guidelines for NGO Management in India (2003), Published by Kanishka Distributors, New Delhi.
- D. Lewis, Management of Non-Governmental Development Organization (2001), Second Edition, Published by Routledge, New York.
- Abraham, Formation and Management of NGOs (2003), Third Edition, Published by Universal Law Publishing Co. Pvt Ltd., New Delhi.
- Sundar, P. 2013, Business and Community: The Story of Corporate Social Responsibility in India, New Delhi, Sage Publication.
- Aggarwal, S.2008, Corporate Social Responsibility in India, Sage Publication Pvt. Ltd.

Course Code- GE-5	Course Tittle- Guidance and Counseling	Credits- Total (L-T-P): 4(4-0-0)

Course Outcomes:

Unit	*Topic*	*No. of Lectures*
Unit 1	Guidance: Meaning, scope and importance, objective and principles of guidance; need of educational guidance, different forms of guidance: group and individuals, types of guidance: educational, vocational and personal	15
Unit 2	Counselling Techniques: Concept, nature and scope of counselling, need and importance of counselling, types of counselling: directive, non-directive and eclectic, tools and techniques of counselling	15
Unit 3	Counselling as service, purpose of student counselling; client -counsellor relationship, nature and functions of a counsellor, characteristics and necessary qualities (personal and professional) of a good counsellors, qualification and training programme of counsellor	15
Unit 4	Guidance of children with special needs, guidance of the gifted and creative students, role of teacher in Guidance, difference between guidance and counselling	15

Suggested Readings:

- Dave Indu- The basic essentials of counselling
- NCERT: Guidance and Counselling
- Sarita Kumari and Monica Tomar – Guidance and Counselling
- SS Chauhan- Principle and technique of guidance.

Course Code- GE-6	**Course Tittle- Eco Textile and Environment**	**Credits- Total (L-T-P): 4(4-0-0)**

Course Outcomes:

- *Understand the principles and importance of sustainability and environmental responsibility in the textile and fashion industries.*
- *Identify and differentiate between eco-friendly, natural, regenerated, and recycled textile fibers.*
- *Analyze and evaluate sustainable textile manufacturing processes, including eco-friendly dyeing, printing, and finishing techniques.*
- *Recognize and interpret global eco-labels, standards, and certifications relevant to sustainable textiles.*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Introduction to Eco Textiles** • Definition, concept, and scope of eco textiles • History and evolution of sustainable textiles • Global environmental concerns related to the textile industry	15
Unit 2	**Eco-Friendly Fibers and Materials** • Natural fibers (organic cotton, hemp, bamboo, etc.) • Regenerated fibers (Tencel, lyocell, modal) • Biodegradable and compostable materials	15
Unit 3	**Sustainable Textile Processes:** Eco-friendly dyeing and printing methods	15
Unit 4	**Certifications and Standards** • Organic certifications (GOTS, OEKO-TEX, etc.) • ISO and environmental management systems in textiles • Eco-labelling and traceability • National and international regulations and policies	15

Suggested Readings:

- Fletcher, K. (2014). *Sustainable Fashion and Textiles: Design Journeys* (2nd ed.). Routledge.
- Hethorn, J., & Ulasewicz, C. (Eds.). (2008). *Sustainable Fashion: Why Now? A Conversation Exploring Issues, Practices, and Possibilities*. Fairchild Books.
- Muthu, S. S. (2014). *Roadmap to Sustainable Textiles and Clothing: Environmental and Social Aspects of Textiles and Clothing Supply Chain*. Springer.

Course Code- GE-7	**Course Tittle- Population Dynamics**	**Credits- Total (L-T-P): 4(4-0-0)**

Course Outcomes:

- *To provide students with a foundational understanding of population concepts, structure, and trends at local, national, and global levels.*
- *To analyze the determinants of population, change such as fertility, mortality, and migration, and their social and economic implications.*
- *To sensitize students to the relationship between population growth and resources, including health, education, and employment.*
- *To understand the population policies and programs in India, including their impact on women, children, and rural development.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Demographic profile of child in India, Population in perspectives; theories of population education. Growth of world population, Population of India, India's population problem in perspectives, social- cultural aspects of population growth in India, Population policy in India.	**10**
Unit 2	Population education- Meaning of population education, Need and importance of population education, objective of population education.	**15**
Unit 3	National and International organization/ programmes like ICDS, FPAI, WHO, UNICEF,CARE, UNFPA,USAID,IPPF,UNESCO,WFP, IMF, IFAD and ILO.	**20**
Unit 4	Government development programmes for population, women and children in India.	**15**

Suggested Readings:

- King, F., Martodipoero,S. and Maurice, K.(1979). Primary Child Care: A Guide for the Community Leader, Manager and Teacher. Book II. Oxford University Press, Oxford.
- Fargo, J. and Pickarts, Evelyn. (1971). Parent Education Towards Parental Competence. Appleton Century Croft, New York
- Dhama, O.P. and Bhatnagar, O.P. (1980). Extension and Communication for Development. Oxford and IBH
- State of World's Children. UNICEF Annual Publication

Course Code- GE-8	**Course Tittle- Ayurveda and Nutrition**	**Credits- Total (L-T-P): 4(4-0-0)**

Course Outcomes:

- *Understand Ayurvedic principles related to health and nutrition.*
- *Identify individual body constitutions and suggest appropriate diets.*
- *Apply Ayurvedic nutrition concepts for health promotion and disease prevention.*
- *Recommend Ayurvedic foods and herbs for managing common health issues.*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Introduction to Ayurveda** • Origin and History of Ayurveda • Basic principles: Panchamahabhutas, Tridosha (Vata, Pitta, Kapha) • Sapta Dhatus (Body Tissues) and Malas (Waste Products) • Concept of Prakriti (Body Constitution)	15
Unit 2	**Ayurvedic Concept of Nutrition** • Ahara (Food) as one of the three pillars of life (Trayopasthambha) • Classification of food according to Ayurveda: Rasa (taste), Guna (qualities), Virya (potency), Vipaka (post-digestive effect), and Prabhava (special effect) • Concept of Agni (digestive fire) and its types • Ama (toxins) formation and implications	15
Unit 3	**Diet and Lifestyle in Ayurveda** • Dinacharya (Daily Routine) and Ritucharya (Seasonal Regimen) • Pathya and Apathya (Wholesome and Unwholesome foods) • Ayurvedic dietary guidelines based on Prakriti and seasons • Food combinations and rules for cooking and eating (Ahara Vidhi)	15
Unit 4	**Ayurvedic Foods and Herbs** • Medicinal plants and herbs used in Ayurvedic nutrition • Functional foods in Ayurveda (e.g., turmeric, ginger, ashwagandha) • Use of Panchakarma and Rasayana therapy in nutrition • Case studies on diet for common ailments (e.g., indigestion, obesity) • Role of Ayurveda in modern dietary planning • Concept of Satvik, Rajasik, and Tamasik food in mental health.	15

Suggested Readings:

Rastogi S – *Ayurvedic Science of Food and Nutrition* (2014) – Springer
Rastogi S – *Building Bridges between Ayurveda and Modern Science* (2010), *International Journal of Ayurveda Research*
FSSAI – *Ayurveda Aahar Regulations, 2022* (Ministry of Health & Family Welfare Gazette)
Mehta, A. K. (2015). *Ayurveda and dietetics*. Chaukhamba Surbharati Prakashan.

Course Code- GE-9	**Course Tittle- Research Methods**	**Credits- Total (L-T-P): 4(4-0-0)**

Course Outcomes:

- *To understand the steps in Research Design;*
- *To understand the different research methods, tools of data collection.*
- *To know the different methods of presentation of data;*
- *To explain the process of analysis and interpretation of data; and*
- *To know the basics of preparing Research Report.*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Introduction to Research** Research: Definition, Concept, Need, and Objective Steps in research process: Research Problem, Literature Review, Hypothesis , Research Design, Sampling & Sampling methods	15
Unit 2	**Types of Research** • Descriptive vs. Analytical Research • Applied vs. Fundamental Research • Quantitative vs. Qualitative Research Conceptual vs. Empirical Research	15
Unit 3	**Research Techniques:** Data Collection 1. Historical Method 2. Survey Method 3. Experimental Method 4. Contact Method 5. Case Study Method 6. Questionnaire Method 7. Observation Method 8. Interview 9. Schedule and Check-list Library Records and Reports	15
Unit 4	**Data Presentation:** • Tabulation of Data • Graphical Representation of Data **Data Analysis and Interpretation** **Report Writing and Conclusions and Ethics in Research**	15

Suggested Readings:

- Donald Cooper and PS Schindler (2009) Business Research Methods, 9th edition, Tata McGraw Hill.
- Kothari C. R Research Methodology
- Uma Sekaran (2010) Research Methods for Business, 4th edition, Wiley.
- Ranjit Kumar (2009) Research Methodology, 2nd edition, Pearson Education
- Naresh Malhotra and S Dash (2009) Marketing Research, 5th edition, Pearson Prentice Hall.

Course Code- GE-10	Course Tittle- Nutrition for Health and Fitness	Credits- Total (L-T-P): 4(4-0-0)

Course Outcomes:

- *To provide comprehensive understanding of the principles of nutrition in relation to physical activity, exercise, and overall fitness.*
- *To gain understanding of dietary needs, plan balanced nutrition strategies to support various levels of physical activity,*
- *To understand and apply dietary management principles in management of overweight and obesity*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Understanding Fitness** • Definition of fitness, health and related terms • Assessment of fitness • Approaches for keeping fit	**15**
Unit 2	**Importance of nutrition** • Role of nutrition in fitness • Nutritional guidelines for health and fitness • Nutritional supplements	**15**
Unit 3	**Importance of Physical activity and sports** • Importance and benefits of physical activity • Physical Activity – frequency, intensity, time and type with examples • Physical Activity Guidelines and physical activity pyramid • Understand pre-, during-, and post-event nutrition. • Develop individualized nutrition plans for athletes based on sport, intensity, and duration.	**15**
Unit 4	**Weight Management** • Assessment, etiology, health complications of overweight and obesity • Diet and exercise for weight management • Fad diets • Principles of planning weight reducing diets	**15**

Suggested Readings:

- Wardlaw, Smith. Contemporary Nutrition: A Functional Approach. 2nd ed: 2012.Mc Graw Hill.
- Williams Melvin. Nutrition for health, fitness and sports. 2004.Mc Graw Hill
- Joshi AS. Nutrition and Dietetics 2010. Tata Mc Graw Hill.

Course Code- GE-11	**Course -Basics of Statistics**	**Credits- Total (L-T-P): 4(4-0-0)**

Course Outcomes:

- *Define basic statistical concepts and understand their applications.*
- *Classify, tabulate, and represent data through diagrams and graphs.*
- *Compute and interpret measures of central tendency and dispersion.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Meaning and uses of statistics, classification and tabulation of data construction of frequency distribution table.	**15**
Unit 2	Diagrammatic representation of data- single dimensional diagram (line and bar), two-dimensional diagram(pie) Graphical representation of data- Graphs of frequency distribution. (histogram, frequency polygon, frequency curve).	**15**
Unit 3	Measure of central tendency- mean, median, mode Measure of dispersion- standard deviation.	**15**
Unit 4	Analysis of data, writing a research report.	**15**

Suggested Readings:

- Gupta, S. C., & Kapoor, V. K. (2020). *Fundamentals of Mathematical Statistics*. Sultan Chand.
- Goon, A. M., Gupta, M. K., & Dasgupta, B. (2016). *Fundamentals of Statistics (Vol. 1)*. World Press.
- Levin, R. I., & Rubin, D. S. (2012). *Statistics for Management*. Pearson.
- Spiegel, M. R., & Stephens, L. J. (2017). *Schaum's Outline of Statistics*. McGraw-Hill.

Course Code-GE-12	**Course Tittle-Basic Nutritional Biochemistry**	Credits- Total (L-T-P): 4(4-0-0)

Course Outcomes:

- *Explain the structure, classification, and functions of carbohydrates, proteins, lipids, vitamins, and minerals in human nutrition.*
- *Describe the biochemical processes of digestion, absorption, transport, and metabolism of nutrients.*
- *Interpret the role of enzymes, hormones, and coenzymes in metabolic pathways and energy production.*
- *Understand the biochemical basis of common nutritional disorders and deficiencies (e.g., anemia, scurvy, kwashiorkor).*
- *Apply basic biochemical principles in the analysis of food and nutrient metabolism.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Introduction to Biochemistry Definition, objectives, scope and inter-relationship between biochemistry and other biological science. Carbohydrates- Definitions, classification and general properties of different carbohydrates.	15
Unit 2	Protein: Definitions, classification, structure and general properties of different Protein. Lipids: Definitions, classification, structure and general properties of different Lipids	15
Unit 3	Introduction to Enzymes and Co-enzymes. Digestion and Absorption of Carbohydrate, Protein and Fat.	15
Unit 4	Water soluble and Fat-soluble vitamins and their Biochemical roles. Minerals: Biological role and occurrence of inorganic elements – iron, calcium, phosphorous, iodine, selenium and zinc	15

Suggested Readings:

- Srilakshmi, B. (2020). *Dietetics* (8th ed.). New Age International Publishers.
- Reddy, M. B., & Reddy, A. (2010). *Biochemistry for nutrition students*. I.K. International Publishing House.
- Swaminathan, M. (2003). *Advanced textbook on food and nutrition: Volume I & II* (2nd ed.). The Bangalore Printing and Publishing Co. Ltd.
- Rao, B. S. N., & Deosthale, Y. G. (2009). *Nutritional biochemistry*. National Institute of Nutrition, ICMR.
- Joshi, S. A. (2014). *Nutrition and dietetics* (5th ed.). Tata McGraw-Hill Education.

Course Code- GE-13	**Course - Nutrition in Emergencies and Disasters**	**Credits- Total (L-T-P): 4(4-0-0)**

Course Outcomes:

- *Recognize types and effects of disasters on nutrition and health.*
- *Identify vulnerable groups and assess their nutritional requirements during emergencies.*
- *Develop and implement emergency nutrition interventions (e.g., feeding programs, ration planning).*

Unit	*Topic*	*No. of Lectures*
Unit 1	Natural/manmade disaster resulting in emergency situation. Drought, flood, earth quake, cyclone, war, civil and political emergencies Factors giving rise to emergency situation in these disasters.	15
Unit 2	Nutritional problems in emergencies in vulnerable groups. Causes of malnutrition in emergency situation. Major deficiency disease in emergencies. Protein- energy malnutrition. Specific deficiency.	15
Unit 3	Communicable diseases: surveillance and treatment. Control of communicable disease in emergencies- Role of immunization and sanitation.	15
Unit 4	Nutritional relief and rehabilitation • Assessment of food need in emergency situations. • Food distribution strategy- Identification and reaching the vulnerable group. • Mass and supplementary feeding. Local food in rehabilitation. • Organization of mass feeding/ general food distribution. • Feeding centers. • Evaluation of feeding programmes. • House hold food security and nutrition in emergencies. • Public nutrition approach to tackle nutritional problems in emergencies.	15

Suggested Readings:

- Manary, M. J., & Sandige, H. L. (2013). *Nutrition and health in emergencies*. Oxford University Press.
- Duggal, R. (2004). *Emergencies and public health: A critical perspective from India*. Centre for Enquiry into Health and Allied Themes (CEHAT).
- Webb, P., & Rogers, B. L. (2003). *Addressing the "in" in food insecurity*. Food and Nutrition Technical Assistance Project (FANTA), Academy for Educational Development.

Course Code- GE-14	Course - Nutrition Health Communication	Credits- Total (L-T-P): 4(4-0-0)

Course Outcomes:

- *Understand and explain the fundamental theories and models of health and nutrition communication*
- *Demonstrate the ability to critically evaluate the effectiveness of various nutrition communication strategies across different populations and settings.*
- *Design and develop culturally appropriate and evidence-based nutrition education materials and health messages.*
- *Utilize various media platforms and tools (print, social media, audiovisual) to communicate nutritional messages effectively.*
- *Apply ethical, accurate, and professional standards in the dissemination of nutrition and health information.*
- *Analyze audience characteristics to tailor communication for behavior change in specific target groups.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Concepts and Theories of Communication in Nutrition – Health, Definitions of concepts, Formal – non-formal communication, Participatory communication. Theories of NHC, History, need and relevance of NHC in India	15
Unit 2	The Components and Processes of NHC, Concept of Behavior Change Communication (BCC) from imparting information to focusing on changing practices. Components of BCC: Sender, Message, Channel, Receiver. Various types of communication – interpersonal, mass media, visual, verbal/ non-verbal. Features of successful BCC, Market Research and Social Marketing	15
Unit 3	Programs and Experiences of NHC global and Indian perspective, NHC in developed and developing nations: some examples, Evolution of NHC in India: traditional folk media to modern methods of communication., Traditional folk media in Gujarat and its influence on NHC, Communication for urban and rural environment; for target specific audience.	15
Unit 4	Nutrition - Health – Communication in Government Programs and NGOs, Evolution of NHC/ IEC in Government nutrition health programs - shift in focus from knowledge gain to change in practices., Overview of NHC/IEC in government programs (Activities, strengths and limitations) – a. NHC in ICDS b. Nutritional counseling in micronutrient deficiency control programs: control of IDA, IDD, VAD, Strengths and limitations of NHC imparted in NGO programs	15

Suggested Readings:

- Field guide to designing communication strategy, WHO publication-2007.
- Behaviour change consortium summary(1999-2003) www1.od.nih.gov.behaviourchange
- Communication strategy to conserve/improve Public Health., John Hopkins University- Centre for Communication programmes.
- Michael Favin and Marcia Griffiths 1999, Nutrition tool kit-09-Communication for Behaviour change in Nutrition projects. Human Development Network-The World Bank1999
- Harvard Institute of International Development (1981) Nutrition Education in Developing Countries, New York: Oelgeschlager Gunn and Hain Publishers Inc.
- Hubley J (1993) Communicating Health. London: Teaching Aids at Low Cost,London, UK.
- Academy for Educational Development (1988). Communication for Child Survival, AED,USA.
- Facts for Life (1990). A Communication Challenge. UNICEF / WHO / UNESCO / UNFPA, UK.

Semester wise distribution of Skill Enhancement Course (SECs) from semester I to semester VI listed below the Table

Table: Skill Enhancement Course (SEC)

Code	Skill Program	Skill Enhancement Course (SECs)					
		1st semester	2nd semester	3rd semester	4th semester	5th semester	6th semester
SEC-A	Food & Nutrition Skill	Food and Bakery Science	Value added product from fruits and vegetables	Food Service Management	Food standards and Quality Control	Hands on training on bakery/ food preservation and processing centers	Project
SEC-B	Therapeutic Nutrition Skills	Basics of Health Promotion and Educational Intervention	Nutritional Counselling	Medical Nutrition Management	Food Coaching	Experiential Learning in Diet and Nutritional Counselling	Internship OR Project
SEC-C	Textiles Skills	Fabric Formation and Finishes	Textile Testing	Fashion Illustration	Introduction to Pattern Making	Sewing Practices	Surface Ornamentation/ Hands on Training in Designing and Production of Textile/ Internship
SEC-D	Child Developmental Skills	Family Support Services	Method & Material for Young Children	Preschool Management	Intervention of Children with Special Needs	Hands on training in Early Child Center /Preschool Center/Anganwadi/Special Schools	Project work related to Child development skills
SEC-E	Resource Management Skill	Fundamental of Art and Design	Residential and Commercial Space Design	Event Management	Ergonomic Design	Hands on training in event and Decor management	Project
SEC-F	Extension Related Skill	Life Skills Education	Communication and Extension for Sustainable Development	Training for Development	Public Speaking	Survey Analysis and Report Writing	Project

DETAILS OF SKILL ENHANCEMENT COURSES (SEC)

Course Code- SEC-A(1)	Course Tittle- Food and Bakery Science	Credits- 2(1-0-1)

Course Outcomes:

- *To provide students with a comprehensive understanding of the science behind food production, specifically focusing on baking and pastry arts.*
- *To understand the roles of different ingredients (flour, sugar, eggs, etc.) in baking and how they interact to produce different textures, flavors, and structures.*
- *To develop new and improved bakery products.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Introduction to baking science Bakery concepts, Different types of baked products: quick breads, yeast breads or leavened breads, cakes and biscuits. History of bakery.	2
Unit 2	Basic materials used in bakery and confectionery: Essential ingredients: flour, eggs, Fat, Sugar, Liquids, Leavening agents, Flavoring agents, optional ingredients. Flour and flour mixtures: selection, properties and specifications of soft wheat , Suitability of flour for bakery products	6
Unit 3	Bakery equipment- Types, selection, operations and maintenance. Knowledge and working of various types of oven. Baking temperatures for bread. Temperature/ Weight conversions 1 unit; °F/ °C /gms / lb serving size	5
Unit 4	Bakery product: introduction, preparation Introduction, various types of cakes, role of ingredients in cake making.	2

Course Code- SEC-A(1) P	Course Tittle- Food and Bakery Science (Practical)	*No. of Lectures*
Practical	• Identification of Bakery equipment. • Determination of gluten content in different wheat flours. • Effect of Leavening Agents viz. baking powder, soda, yeast on bakery products • Substitution of wheat (partially/completely) and evaluate product texture, taste, and acceptability. • Formulation of Bread/Gingerbread/Carrot Bread/ Garlic Bread/French Bread. • Formulation of Sponge cake. • Formulation of Cookies & Biscuits/Millet Biscuits. • Formulation of Breads, buns, and pizza base • Sensory Evaluation of Baked Goods	30

Suggested Readings:

- Dubey, S.C. (2007). Basic Baking 5th Ed. Chanakya Mudrak Pvt.Ltd.
- Raina et.al. (2010). Basic Food Preparation-A Complete Manual. 4rd Ed. Orient Black Swan Ltd.
- Khanna K, Gupta S, Seth R, Mahna R, Rekhi T (2004). *The Art and Science of Cooking: A Practical Manual,* Revised Edition. Elite Publishing House Pvt Ltd.

Course Code- SEC-A(2)	Course Title- Value Added Product from Fruits and Vegetables	Credits- 2(1-0-1)

Course Outcomes:

- *Identify various types of fruits and vegetables and explain their nutritive value.*
- *Understand the fragile nature of fruits and vegetables and causes for their damage.*
- *Explain various methods of preservation for fresh fruits and vegetables.*
- *Get to know the value-added products made from fruits and vegetables*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Introduction to fruits and vegetable** 1. Fruits: Definition, elementary knowledge, types and classification of fruits(fleshy and dry) with local /common examples. 2. Vegetables: Definition, elementary knowledge, types and classification of vegetables (root, leafy, stem, flower and fruit) with local/ common examples. 3. Importance of fruits and vegetables in human nutrition.	3
Unit 2	**Value addition of Fruits** 1. Fruits – ripening and biological aging; storage and preservation concerns. 2. Preservation of fresh fruits at room temperature and in cold storage. 3. Fruit preservation at room temperature as juices, squashes and syrups. 4. Preservation of fruits by application of heat; making of fruit products(jams, jellies and fruit slices in processing factories). Preservation by dehydration (eg. banana chips), application of sugar (Eg. Mango/Guava/Amla candy), preserves, application of salt (pickling) Fruit preservation by freezing – storage at the lowest temperatures.	5
Unit 3	**Preservation of vegetables** 1. Vegetable – losses after harvesting and causes; problems in handling and storage. 2. Modern methods of packaging and storage to reduce losses. 3. Making of vegetable products (flakes/chips of potato and onion; garlic powder etc.). 4. Frozen vegetables – Carrots, Cauliflower, Peas, Spinach and other vegetables. Preservation of sliced vegetables in factories by canning and bottling.	5
Unit 4	Storage, labelling, branding and marketing of value added products of fruits and vegetables.	2

Course Code- SEC-A(2) P	Course Tittle- Value Added Product from Fruits and Vegetables (Practical)	No. of Lectures
Practical	• Overview of different preservation methods. • Hands-on canning of fruits • Learn to use a water bath canner and pressure canner. • Hands-on pickling of vegetables (e.g., cucumbers, carrots). • Preparation of quick pickles versus fermented pickles. • Hands-on preparation and freezing of a variety of fruits and vegetables. • Hands-on blanching and its importance. • Hands-on use of dehydrators and oven drying. • Preparing and dehydrating a selection of fruits and vegetables. • Hands-on preparation of fruit jams (e.g., Mixed jam, apple,) fruit jelly (Guava). • Discussion on pectin and sugar ratios. • Participants create a preserved item of their choice (canned, pickled, or dehydrated). • Group presentation and discussion of techniques used.	30

Suggested Reading

- Giridharilal, G. S. Siddappa and G.L.Tandon (2007) Preservation of Fruits and Vegetables,Indian Council of Agri. Res., New Delhi.
- Srivastava, R.P., and Sanjeev Kumar (2019) Fruit and Vegetable Preservation : Principlesand Practices, CBS Publishers & Distributors Pvt., Ltd., New Delhi
- Thompson, A.K. (1995) Post Harvest Technology of Fruits and Vegetables. BlackwellSci.,U.K.
Verma, L.R. and V.K. Joshi (2000) Post Harvest Technology of Fruits and Vegetables.Indus Publ., New Delhi

Course Code- SEC-A(3)	**Course Tittle- Food Service Management**	**Credits- 2(1-0-1)**

Course Outcomes:

- *To introduce the scope and types of food service systems in both commercial and institutional settings.*
- *To develop managerial skills related to planning, organizing, staffing, and controlling food service operations.*
- *To foster understanding of menu planning, food production, and service techniques for various clientele and scales of operation.*
- *To promote awareness of hygiene, sanitation, and food safety regulations as per national and international standards.*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Introduction to Food Service Industry** • Definition and scope • Types of food service establishments (commercial, non-commercial) • Role of a food service manager	1
Unit 2	**Food Safety and Hygiene** • Personal hygiene • Sanitation practices • Food laws and standards (FSSAI, HACCP)	2
Unit 3	**Kitchen Planning and Equipment** • Layout of food service units • Types and uses of kitchen equipment • Maintenance and safety **Quantity Food Production and Service** • Standardized recipes • Menu planning • Portion control **Food Purchasing and Storage** • Vendor selection • Purchasing procedures • Storage techniques (dry, refrigerated, frozen)	5
Unit 4	**Food Service Management Principles** • Planning, organizing, staffing, directing, controlling, Leadership styles Time and work management. **Cost Control and Budgeting:** Food cost calculation, Budget preparation, Cost control techniques **Personnel Management:** Recruitment and training, Staff scheduling, Employee motivation and appraisal	7

Course Code- DEC-A(3) P	Course Tittle- Food Service Management (Practical)	No. of Lectures
Practical	• Standardization of recipes of snacks and meals for portion and cost. • Standardize recipes for large-scale cooking. • Create a week's menu and cost analysis for a food service institution • Prepare work plans for kitchen staff in different setups (day/week). • Familiarization with bulk cooking equipment like steamers, bain-marie, tilt pans. • Conduct a hygiene audit in a food service establishment. • Demonstration of correct handwashing steps, use of PPE (hair caps, gloves, aprons). • Use of fire extinguisher, first aid for burns, basic safety rules in kitchen. • Observation Visit to Institutional Kitchens(Hostel, hospital, industrial canteen, NGO)	30

Suggested Readings:

- Sethi, Mohini Institutional Food Management, Publisher: New Age International
- **Sivasankar, B.**Food Processing and Preservation Publisher: PHI Learning
- Journal of Foodservice Management & Education
- International Journal of Hospitality Management

Course Code- SEC-A(4)	Course Tittle- Food Standards and Quality Control	Credits- 2(1-0-1)

Course Outcomes:

- *To give the students the understanding of food quality, standard, laws and regulations.*
- *To acquaint students about methods for assessing food quality, quality control and food safety.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Meaning of quality, quality factors in food. Quality standards, factors affecting quality. Methods and techniques for assessment of food quality: Sensory evaluation and different tests for sensory evaluation and Objective evaluation.	3
Unit 2	Food standards, food laws and regulation: Prevention of Food adulteration act, Essential Commodity act, Fruit Product Order, Meat Product Order, Milk and Milk Product Order, Misbranding, Bureau of Indian Standards, Ag Mark standard, Export quality control, Inspection Act, ISO, FSSAI	5
Unit 3	Food labelling, nutrition labelling, international food standards and Codex Alimentarius. Food additives: Needs for food additives, additives. Food safety: safety hazards and risk, food related hazards, HACCP for prevention of food borne illness.	3
Unit 4	Different tests for common adulterants in food (e.g., starch in milk, artificial colours). Organize and execution of sensory evaluation of selected food products.	4

Course Code- SEC-A(4) P	Course Tittle- Food Standards and Quality Control (Practical)	*No. of Lectures*
Practical	• Conduct tests for common adulterants in food (e.g., starch in milk, artificial colours). • Organize and execute a sensory evaluation of selected food products. • Identification and interpretation of mandatory information on packaged food labels and their compliance with FSSAI laid norms. • Identify permitted additives from ingredient labels and FSSAI regulation. • Research a local NGO working on food security and present their initiatives. • Design a community outreach program addressing a food issue. • Analyse the effectiveness of a local food distribution program.	30

Suggested readings:

- Potter, N.N and Hotchkiss, J.M. 1996. Food Science V ed. CBS Publishers and Distributors,Delhi.
- Srilakshmi, B. 2001. Food Science II ed. New Age Internationals (P) Limited Publishers.
- Kalia, M. 2002. Food Analysis and Quality Control. Kalyani Publishers.
- Many, Shakuntala N. and Shadaksharaswamy, M. 2001. Food facts and Principles Iled. NewAge Internationals (P) Limited Publishers.
- Kalia, M. and Sood, S. 1996. Food Preservation and Processing. Kalyani Publishers.

Course Code- SEC-A(5)	**Course Tittle- Hands on Training on Bakery/ Food Preservation and Processing Centers**	**Credits- 2(0-0-2) Total hours: 30**

Course Outcomes:

- *To provide real-world industrial exposure to students in food processing and bakery units.*
- *To develop operational skills and technical know-how through supervised, hands-on training.*
- *To acquaint students with production processes, quality assurance, hygiene practices, and machinery used in the food industry.*

Unit	*Topic*	*No. of Lectures*

As part of the course curriculum, students are required to actively engage in Hands on learning by participating in real-world settings related to food processing and bakery units. This hands-on experience aims to bridge theoretical knowledge with practical application, enhancing professional skills and confidence.

1. Engagement in Industrial Settings:

Students must attach themselves to a recognized food processing or preservation center or bakery units. During their engagement, students should observe and participate in:

- Equipment handling, temperature control, shaping techniques, industrial hygiene in food processing/bakery units.
- Students must gain experience in Preservation technique handling, labeling, HACCP observation in processing centers and baking units.

2. Documentation & Report Submission:

- Maintain a detailed File/Report documenting:
- Details of the industry setting engaged with.
- Summary of Products developed along with processes or preservation method used:
- Reflections and learning outcomes

Submit the final compiled report for evaluation.

Course Code- SEC-A(6)	Course Tittle- Project	Credits- 2(0-0-2) Total hours:30

Course Outcomes:

- *Encourage independent research and critical thinking on a specific topic related to food industry*
- *Provide an opportunity to apply theoretical knowledge to solve real-world problems in food science, nutrition, or processing.*
- *Develop skills in project planning, data collection, analysis, and scientific writing.*
- *Promote innovation in areas such as product development, shelf-life enhancement, or quality assessment.*

Project Work

Planning of Project

- Selection of topic (product/process/analysis/technology/problem)
- Literature review and gap identification
- Objective and hypothesis formulation
- Methodology design

Execution of Project

- Procurement of materials/samples
- Experimental work or data collection
- Lab-based experiments (e.g., proximate analysis, shelf life)
  or
- Field surveys (e.g., dietary patterns, food habits)
  or
- Industry collaboration (e.g., pilot plant data)
- Recording observations and maintaining a lab/project record.

Data analysis and Report Preparation

- Data entry, coding, and interpretation
- Writing of project report under heads Introduction, objectives, methodology, results, discussion, conclusion
- Each student must prepare a comprehensive **project report** based on their study and practical involvement and to be submitted for final evaluation at the end of the semester.

Suggested Readings:

1. **Kothari, C.R.** – *Research Methodology: Methods and Techniques*
2. **Ranganna, S.** – *Handbook of Analysis and Quality Control for Fruit and Vegetable Products*
3. **Manay & Shadaksharaswamy** – *Foods: Facts and Principles*
4. **FSSAI Manuals** – https://www.fssai.gov.in

SEC B: THERAPEUTIC NUTRITION SKILLS

Course Code- SEC-B(1)	**Course Tittle- Basics of Health Promotion and Educational Intervention**	**Credits- 2(1-0-1)**

Course Outcomes:

- *To develop an understanding of the fundamental concepts and principles of health promotion.*
- *To familiarize students with various educational strategies and intervention techniques aimed at improving health outcomes.*
- *To equip students with the skills to design, implement, and evaluate effective health promotion programs.*
- *To promote awareness of the role of community participation and intersectoral collaboration in successful health education interventions.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Concepts of health promotion including history, Health behavior, health communication and Health Literacy	2
Unit 2	Information Education Communication (IEC), Behavior Change Communication (BCC), and Social and Behavior Change Communication (SBCC), and their applications in different settings (including role of social determinants of health)	5
Unit 3	Need assessment for health promotion (including health behavior models) Planning and implementing a HPE intervention	3
Unit 4	Designing of messages and pretesting Materials and methods Evaluation of HPE intervention **Role of Technology and Digital Media in Health Promotion:** Use of social media, mobile apps, and digital campaigns, E-health and M-health tools for health education, Ethical considerations in digital health communication.	5

Course Code- SEC-B(1) P	**Course Tittle- Basics of Health Promotion and Educational Intervention (Practical)**	*No. of Lectures*
Practical	• Demonstration of Health Communication Methods: One-on-one counselling, Group discussion, Role play or skit • Preparation of IEC Materials like Posters, leaflets, flipbooks, charts • Use and evaluate AV aids for awareness • Plan and Conduct a Health Education Session • Visit an Anganwadi center, PHC, or NGO and documentation of health promotion strategies. • KAP (Knowledge, Attitude, Practice) Study • Survey of Social Media Usage for Health Information • Create a Health Reels/Short Video (30–60 seconds) to share a health message	30

Suggested Readings:

- Principles and Foundations of Health Promotion and Education" by James McKenzie
- Health Behavior: Theory, Research, and Practice" by Karen Glanz

Course Code- SEC-B(2)	**Course Tittle- Nutritional Counselling**	Credits- 2(1-0-1)

Course Outcomes:

- *To equip students with fundamental skills in nutritional counselling and behavioral change.*
- *To provide knowledge about different dietary patterns and their role in health.*
- *To develop effective communication skills for counselling individuals and groups on dietary changes.*
- *To understand common nutrition-related problems and how to prevent or manage them through diet.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Customizing nutrition plans based on individual needs Communication and counselling skills Definition and scope of Nutritional Counselling, Principles of effective diet counselling, The role of a nutritionist in counseling, Ethical and professional aspects of counseling, The importance of behavior change in nutrition, Overview of the counseling process (Assessment, Planning, Implementation, Monitoring)	4
Unit 2	Psychology of eating behavior, Motivation and barriers to behavior change, Cognitive Behavioral Therapy (CBT) in nutrition, Building rapport and trust with clients, Active listening and empathy in counseling	3
Unit 3	Introduction to Clinical Nutrition Introduction to Hospital diets,Soft, liquid and Normal Diet,Methods of feeding: Enteral and Parenteral Nutrition Introduction and the Healthy Diet	3
Unit 4	Assessment and Diagnosis in Nutritional Counselling by conducting dietary assessments (24-hour recall, food diaries, food frequency questionnaires)Interpreting nutritional status using anthropometric data, Identifying nutrient deficiencies and excesses, Understanding laboratory data in relation to nutrition	5

Course Code- SEC-B(2) P	**Course Tittle- Nutritional Counselling (Practical)**	*No. of Lectures*
Practical	• Customizing Nutrition Plans Based on Individual Needs: Age, gender, activity level; Nutritional status (BMI, dietary recall); Medical condition (e.g., diabetes, obesity) • Behavior Change in Nutrition Counselling • Conducting Dietary assessments using 24-hour recall, food diaries, food frequency questionnaires • Counselling sessions for:Mother of a malnourished child/Obese adolescent/Pregnant woman with anaemia • Demonstration of Hospital Diets. • Feeding Methods Demonstration (with Models/AV Tools)	30

Suggested Readings:

- **Gibson, R. S. (2005).** *Principles of Nutritional Assessment.* Oxford University Press.
- **Mahan, L. K., Raymond, J. L. (2016).** *Krause's Food & The Nutrition Care Process. Elsevier.*
- **Boyd, R., & Flanders, S. (2015).** *Counselling Skills for Dietitians.* Wiley-Blackwell.
- **Gibney, M. J., Lanham-New, S. A., Cassidy, A., & Vorster, H. H. (2013).** *Introduction to Human Nutrition. Wiley-Blackwell.*

Course Code- (SEC-BG3)	Course Tittle- Medical Nutrition Management	Credits- 2(1-0-1)

Course Outcomes:

- *To provide students with in-depth knowledge of the role of nutrition in the prevention, management, and treatment of various diseases and medical conditions.*
- *To develop skills in formulating and implementing individualized medical nutrition therapy (MNT) plans for patients with different clinical conditions.*
- *To enhance students' understanding of therapeutic diets, enteral and parenteral nutrition methods, and the importance of interdisciplinary collaboration in clinical nutrition care.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Diet Planning for several lifestyle disorders i.e. Diabetes, Renal and Liver, Cardiac Disorder, Gastrointestinal disorder and weight management	3
Unit 2	Nutritional Management in Fever/Infection: Tuberculosis Nutritional Management in Liver, Gall Bladder and Pancreatic Diseases Nutritional Management of Renal Diseases	5
Unit 3	Introduction to Medical Nutrition Therapy Nutrition during Stress, Injury and Burn Bariatric Nutrition and Lifestyle Plan	5
Unit 4	Food Allergies and Diet Management: Introduction food allergy and intolerance, Classification and Difference, Diagnosis and Risk Factor Dietary Management of Various Food Allergies	2

Course Code- SEC-BG3) P	Course Tittle- Medical Nutrition Management (Practical)	*No. of Lectures*
Practical	• Diet Planning in Diabetes Mellitus • Plan a cholesterol- and sodium-controlled diet • Weight Management Diet (Obesity) • Diet for Hypothyroidism or PCOS • Diet Planning in Gastrointestinal Disorders (Constipation, Diarrhoea) • Panning of diet for Jaundice • Diet Planning in Renal Disorders • Diet for Tuberculosis • Nutritional Management in Fever (Typhoid, Dengue) • Plan anti-inflammatory, protein-rich diet for stress and injury	30

Suggested Readings:

- Mahan, L. K., & Raymond, J. L. (2016). ***Krause's Food & The Nutrition Care Process***
- Nelms, M., Sucher, K., Lacey, K., & Roth, S. (2019). ***Nutrition Therapy and Pathophysiology***
- Escott-Stump, S. (2014). ***Nutrition and Diagnosis-Related Care***
- Garrow, J. S., James, W. P. T., & Ralph, A. (2000). ***Human Nutrition and Dietetics***

Course Code- SEC-B(4)	Course Tittle- Food Coaching	Credits- 2(1-0-1)

Course Outcomes:

- *To introduce students to the principles and practices of food coaching and its role in promoting healthy eating habits and overall well-being.*
- *To develop skills in assessing clients' dietary patterns, nutritional needs, and lifestyle factors for personalized food and nutrition guidance.*
- *To equip students with effective communication, motivational, and behavior change techniques essential for guiding individuals and groups toward sustainable dietary improvements.*
- *To familiarize students with ethical considerations, cultural sensitivity, and emerging trends in the field of food coaching and nutrition counselling.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Food Coaching: Aims and objectives, Meeting with Clients: Assessing Current Diet And Lifestyle, Healthy Diet, Food Pyramids, Food Plates.	3
Unit 2	Overweight, Eating disorders, Measuring Body Fat, Body Fat Percentage, Measurement Techniques, Health Risks of Overeating, Weight Loss Plans. Specialist Diets - Poor Nutritional Diets, Understanding Different Types of Special Diet: Dairy Free Diet, Vegetarian Diets.	5
Unit 3	Food Coaching Adults and Seniors Introduction: General Dietary Requirements for Adults, Pregnant Women, Seniors, Age-Related Illnesses and Nutrition.	4
Unit 4	Food Coaching for Children. General Nutritional Requirements of Children, Food Groups Developing a Nutrition Plan for Children, Nutritional Disorders in Children, Obesity in Children, Underweight Children.	3

Course Code- SEC-B(4) P	Course Tittle- Food Coaching (Practical)	*No. of Lectures*
Practical	• **Case Study Analysis:** Collect a case (real or simulated) with a clinical condition such as: • Diabetes Mellitus, Hypertension, Obesity, Chronic Kidney Disease, Celiac Disease. • **Conduct nutritional assessment:** Diet history, 24-hour recall, Anthropometric data, Biochemical parameters • **Diet Planning & Modification:** Design a therapeutic diet for the condition. • Calorie count, Macronutrient distribution, Meal timing, Use food exchange lists and food pyramids. • Modify standard recipes (e.g., low-sodium soup, diabetic-friendly dessert). • **Food Coaching Simulation;** Role-play a food coaching session, Use motivational interviewing • Set SMART goals, Address barriers and misconceptions, Provide tips for grocery shopping, eating out, and cooking • **Demonstration & Practical Cooking:** Prepare therapeutic meals/snacks: • **Follow-Up Plan:** Create a 1-week follow-up chart including: • Meal plan, Behavioral notes, Physical activity plan,Self-monitoring tools (e.g., food diary)	30

Suggested Readings:

- Mahan, L. K., Raymond, J. L. (2016). ***Krause's Food & The Nutrition Care Process***
- Gibney, M. J., Lanham-New, S. A., Cassidy, A., Vorster, H. H. (2013). ***Introduction to Human Nutrition***
- Boyd, R., & Flanders, S. (2015).***Counselling Skills for Dietitians.***
- Ogden, J. (2016). ***The Psychology of Eating: From Healthy to Disordered Behavior.***
- Whitney, E., & Rolfes, S. R. (2018). ***Understanding Nutrition.***
- Beck, J. S. (2011).***Cognitive Behavior Therapy: Basics and Beyond.***

Course Code- SEC-B(5)	Course Tittle- **Experiential Learning in Diet and Nutritional Counselling**	Credits- 2(0-0-2) Total hours:30

Course Outcomes:

- *To provide students with hands-on experience in dietary counseling and creating personalized nutrition plans.*
- *To foster the development of communication and counseling skills in real-world contexts.*
- *To expose students to various dietary challenges and guide them in providing evidence-based solutions.*
- *To promote critical thinking and problem-solving in the field of nutritional counseling.*

Unit

Topic

As part of the course curriculum, students are required to actively engage in experiential learning by participating in real-world settings related to Diet and Nutritional Counselling. This hands-on experience aims to bridge theoretical knowledge with practical application, enhancing professional skills and confidence.

1. **Engagement in Professional Settings:**

Students must attach themselves to a recognized Government or Private Hospital, clinic, or any healthcare setting. During their engagement, students should observe and participate in the process of nutritional assessment and dietary counselling.

2. **Conducting Counselling Sessions:**

Each student is expected to independently conduct a minimum of four (4) diet and nutritional counselling sessions across different settings: College Setting (student/staff counselling), Community Setting (awareness camps, outreach programs), Hospital Setting (patients under supervision). Sessions should include assessment, goal setting, nutrition education, and follow-up strategies.

3. **Documentation & Report Submission:**

- Maintain a detailed **File/Report** documenting:
- Details of the hospital/clinic/community setting engaged with.
- Summary of each counselling session, including:
- Client background (without personal identifiers for confidentiality)
- Nutritional assessment performed
- Dietary recommendations given
- Communication and counselling techniques applied
- Reflections and learning outcomes
- Submit the final compiled report for evaluation.

Course Code- SEC-B(6)	Course Tittle- Internship/Project	Credits- 2(0-0-2) Total hours :30

Course Outcomes:

- *To provide students with practical exposure and hands-on experience in identifying, assessing, and addressing nutritional deficiencies, lifestyle disorders, diseases, or infections through nutritional counselling in real-world settings.*

Project Work Instruction

As part of the semester requirement, students are expected to undertake an individual or group project in a **hospital or community setting**. The key components of the project will include:

- **Setting:** Choose a government/privsate hospital, healthcare clinic, or community setting.
- **Identification:** Identify any one of the following areas based on the population served:
  - Nutrient deficiencies (e.g., Iron Deficiency, Vitamin A Deficiency, Protein-Energy Malnutrition etc).
  - Lifestyle disorders (e.g., Obesity, Diabetes, Hypertension etc).
  - Specific diseases or infections with nutritional implications (e.g., Tuberculosis, Anemia, GI disorders etc).
- **Nutritional Assessment:** Conduct nutritional assessments using appropriate tools and techniques:
  - 24-hour dietary recall
  - Food frequency questionnaires
  - Anthropometric measurements (height, weight, BMI, MUAC, etc.)
  - Biochemical data (if available)
  - Document findings systematically.
- **Nutritional Counselling Sessions:**
  - Develop and implement at least 2-4 nutritional counselling sessions based on assessed needs.
  - Use suitable counselling aids/tools (charts, diet plans, IEC materials).
  - Educate the target individuals/groups on dietary modifications, healthy lifestyle habits, and disease management.
- **Data Collection:**

Take pre-intervention and post-intervention data to assess changes/improvements.

- **Report Writing:** Compile a comprehensive project report covering:
  - Introduction, objectives, and rationale of the project.
  - Details of the population studied and setting.
  - Assessment methods and findings.
  - Counselling strategies applied.
  - Pre- and post-data analysis.
  - Reflections, challenges faced, and outcomes.
  - Recommendations and conclusion.

SEC-C: TEXTILES SKILLS

Course Code- SEC-C(1)	**Course Tittle- Fabric Formation and Finishes**	**Credits- 2(1-0-1)**

Course Outcomes:

- *To understand the inter-relation of fiber structure and its properties*
- *To study the application and mechanism of textile finishes*
- *To enhance awareness in future trends in textile finishing*

Unit	*Topic*	*No. of Lectures*
Unit 1	Fabric Formation: meaning, Fabric formation Technique	2
Unit 2	Weaving: Process, types of weaving Knitting: Process, types of Knitting.	5
Unit 3	Finishes: Definition, importance and types/ Classification of Finishes.	4
Unit 4	Dyes and their classification: Dyeing techniques: solution dyeing, fibre and yarn dyeing, piece dyeing. Method of printing, block, screen, stencil, roller, transfer and resist printing, tie and dye and batik.	4

Course Code- SEC-C(1) P	**Course Tittle- Fabric Formation and Finishes (Practical)**	*No. of Lectures*
Practical	• Basic fabric finishes: scouring, bleaching and mercerization • Preparations of tie and dye samples using various techniques. • Preparation of batik samples using various techniques. • Preparation of block printing sample. • Preparation of screen-printing sample. • Prepare an article with the use of any three style of dyeing and printing. Visit to any textile unit/ NGO working in the direction of textile designing and prepare a report on it.	30

Reccomended readings:

- Birkar,H.1968. Screen Printing. New York, Sterling Publishing Co. Inc.
- Muehling, E. 1967. The book of Batik. London, Mills and Boons Limited.
- Anderson, F.1974. Tie- Dyeing and Batik. London, Octopus Editorial Production by Berkeley Publishers Ltd.
- Clake, W. 1974. An Introduction to Textile Printing.London, Newness Butter Worth.

Course Code- SEC-C(2)	Course Tittle- Textile Testing	Credits- 2(1-0-1)

Course Outcomes:

- *Understand the importance and principles of textile testing in quality control.*
- *Learn standardized methods for testing fibers, yarns, and fabrics.*
- *Acquire skills to assess physical and mechanical properties like strength, abrasion, and drape.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Introduction to textile testing – Definition, important of textile testing. General aspects of textile testing. Routine test performed in industry. Benefits of testing. International standards for textile apparel testing. Terminology of testing – selection of samples for testing standard R H and temperature for testing - measurement of moisture regain conditioning oven – Shirley moisture meter.	5
Unit 2	Identification of textile fiber – Burning, Solvent, Longitudinal and Cross section view of Different natural, semi-synthetic & mam-made fibres. Cotton fiber length – Definition, importance. Fiber Fineness – Definition, importance, Methods of measuring fineness – air flow method. Fiber maturity - Definition, importance, Caustic Soda swelling method. Fiber Strength – terminology, pressley tester & Stelometer. Determination of trash, lint & Nep in cotton - Shirley trash analyzer.	5
Unit 3	Yarn testing-Yarn count – Yarn numbering system. Yarn strength – important fiber property for good strength yarn. Yarn twist – Definition, direction of twist, straightened fiber method.	3
Unit 4	Fiber testing- Woven, Knitted, Nonwoven, Dimensions, Length, Width, Thickness, Determination of fabric weight,Cover factor. Fabric Strength - tensile strength, tearing strength, bursting strength. Fabric Abrasion - Martindale abrasion tester.	2

Course Code- SEC-C(2) P	Course Tittle- Textile Testing (Practical)	*No. of Lectures*
Practical	• Create and practice the type of lines and apply different lines in dress designing. **Fabric Identification Tests** • Burn Test: Identify textile fibers based on burning characteristics. • Microscopic Test: Examine fiber structure (natural vs. synthetic). • Solubility Test: Use chemical solvents to distinguish between fibers. **Yarn and Fabric Count** • Yarn Count Determination: Using the wrap reel and balance. • Thread Count (Ends & Picks per Inch): Using a fabric pick glass. **Fabric Weight and GSM** • Calculate grams per square meter (GSM) using standard fabric samples. **Tensile Strength Test** • Test breaking strength and elongation using a tensile testing machine. **Tearing Strength Test** • Measure tear resistance of fabric samples using an Elmendorf tear tester. • Fabric Shrinkage Test, Assess dimensional stability after laundering	30

Suggested Readings:

- Cobman, P.B (1985) Textiles Fibre to Fabrics. 6th edition Mc Graw Hill Book Co, US.
- Sekheri S, (2013) Text book of Fabric Science, Fundamentals to finishing PHI Learning, Delhi.

Course Code- SEC-C(3)	**Course Tittle- Fashion Illustration**	**Credits- 2(1-0-1)**

Course Outcomes:

- *To develop knowledge and skill about basic figure drawing and illustration of human features.*
- *To enable students to sketch their imagination into reality by using stylish figure and fashion figures.*
- *To apply various types of textures and mediums in the figures.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Fashion Illustration: Introduction, Tools for Sketching and Illustration.	2
Unit 2	Designing of Clothing: Design, Classification of Design, Element of design, Principle of Design.	4
Unit 3	Fashion Portfolio: Introduction, Steps in Developing Portfolio: Source of inspiration, Theme selection, Presentation boards.	4
Unit 4	Basic human proportion, Anatomy and model drawing, 8, 10, 12 head theory, Straight, Flesh, Motion posture, Elongation figure, Body figures and features- Hair styling, Eye, Face, Arm, legs, Figure drawing, Body Movement – Kids, Female and Male, Hand movement, Face drawing and detailing.	5

Course Code- SEC-C(3) P	**Course Tittle- Fashion Illustration (Practical)**	*No. of Lectures*
Practical	• Create and practice the type of lines and apply different lines in dress designing. • Create and Practice the Basic strokes of pencil and brushes. • Create and apply the colors Schemes in Dress Designing by using Acrylic or Water colors. • Create and apply the effect of line/variety of lines in Dress Designing by using pencil and brushes. • Draw the different Sketch of fashion detail by using pencil and brushes- ➢ Different types of Necklines. ➢ Different types of Sleeves. ➢ Different types of Collars. Different types of Skirts.	30

Suggested Readings:

- Figure Drawing for Fashion, Isao Yajima, Graphic-Sha; First Edition (1987)
- Fashion Art for the Fashion Industry, Rita Gersten, Fairchild Books (1989).
- Tatham Seamas, "fashion design drawing course" 978-0-7641-2473-0
- Fashion Drawing – The Basic Principles, Anne Allen and Julian Seaman, Anova Books.
- Fashion illustration and Presentation, Manmeet Sodhia, Kalyani Publishers.
- Fashion Source Book, Kathryn Mckelvey, Blackwell Science
- Encyclopedia of fashion details, Patrick John Ireland, Batsford.
- Fashion Illustration, Colin Barnes, Little Brown and Co. (UK) (April 1995).
- Snap Fashion Sketch Book, Bill Glazer , Prentice Hall; 2 edition (2007).

Course Code- SEC-C(4)	Course Tittle- Introduction to Pattern Making	Credits- 2(1-0)-1

Course Outcomes:

- *To teach the students the science of measuring human sizes and creating a pattern from the measurements.*
- *To familiar the students the use of tools and equipment.*
- *To learn how to draft a pattern by the help of measurement chart.*
- *To check the garment to correctly fit for the body or an item to meet desired size and fit specifications.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Pattern making terms: Introduction. Understand of Body & its measurement, Method of measuring. Measurements, Factor to be Consider while taking measurement.	4
Unit 2	Tools of Pattern Making: Tools of Pattern Making, Other Pattern Aids. Terminology of Pattern Making: Block/Sloper, Pattern, Grain Line, Seam Line etc. Methods of Pattern Making.	4
Unit 3	Fullness in Garment- Darts, Pleats, Gathers and Tucks. Types of Collars, Necklines & Edge Finishes	4
Unit 4	Garment Fitting- Introduction to fit. Elements of Good Fit, Evaluation of Fit.	3

Course Code- SEC-C(4) P	Course Tittle- Introduction to Pattern Making (Practical)	*No. of Lectures*
Practical	• To Take Body Measurement. • Drafting of Basic Blocks/ Pattern. • Create patterns with all makings and Practice on the use of French Curve and other tools for arm hole, Neckline etc. • Working with fabric grain. • To Identify perfect seam and Samples of Plain Seam and its finishing. • To Prepare samples of Various Seams and Samples of disposal and control of fullness.	30

Suggested Readings:

- Pattern Making for Fashion Design by Helen Joseph Armstrong.
- The Theory of Garment Pattern Making by W.H. Hulme
- Practical Pattern Making: A step-by-step guide by Isabel Sanchez Hernandez and Lucia Mors.
- Pattern Making for Fashion Design- Harper Collins College Publishers, New York
- The Complete Book of Sewing – London: Dorling Kindersley Ltd.
- Textbook of Fundamentals of Clothing Construction- ICAR New Delhi

Course Code- SEC-C(5)	Course Tittle- Sewing Practices	Credits- 2(1-0-1)

Course Outcomes:

- *To impart skills in basic techniques of hand sewing.*
- *To provide the knowledge of various hand stitches.*
- *To impart skills in operating sewing machine.*
- *To provide the knowledge of stitching various garment parts.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Sewing Machine: Types, Parts and Maintenance. Tools required for stitching. Stitches. Basic hand stitches – Basting, running, hand overcast, buttonhole, hemming stitches – plain and blind hemming and slip stitch.	4
Unit 2	Seams – plain, single top, double top, welt, flat fell, French seam, lapped, piped, slot and Mantua maker's seam. Seam finishes.	3
Unit 3	Introduction to basic construction: darts, tucks, pleats, flares, gathers, frills and ruffles. Garment part construction: Plackets, Pockets, Collars, Sleeves.	5
Unit 4	Sleeves – Plain, puffed, Raglan, Kimono, Bell sleeves, circular, Cap, Cuff, Long, Petal Sleeves. Collars – Peter pan, shawl, Shirt collar, Sailor, cape, turtle neck, Puritan and Mandarin.	3

Course Code- SEC-C(5) P	Course Tittle- Sewing Practices (Practical)	*No. of Lectures*
Practical	• Demonstration on Sewing Equipment and tool, sewing machine and its care. • Tools for clothing construction-cutting, measuring, marking, and pressing tools. • Operation of sewing machine and stitching by straight line stitch, parallel stitch, and curve stitch. • Taking body measurement. • Learning fabric cutting. • Drafting and cutting and stitching of different (any four) garments or articles like bib/ jhabla/ frock, sun pyjama/ blouse/ petticoat/ laundry bag/ apron/ sling bag/ shopping bag.	30

Suggested Readings:

- Helen J Armstrong, Pattern Making for Fashion Design, Prentice Hall.
- Pattern cutting and making up Martin Mahelion 81-239-1373-7 4. Pattern cutting and making up Martin81-239-1373-7
- Pattern Making of fashionArmstrong 978-81-317-2459-0, 978-317-2459-6. Mary Mathews. (1984). Practical clothing Construction Part-I. Madras Parrinpack. Prentice Hall inc.
- Harold Carr & Barbara Latham, The Technology of Clothing Manufacture, Oxford Pub, USA, 1994. Gerry Cooklin, Introduction to Clothing Manufacture, Blackwell Science, UK, 1991
- The Sewing Machine Classroom: Learn the Ins & Outs of Your Machine, Charlene Phillip, 2015
- The Sewing Book: Over 300 Step-by-Step Techniques , 2018 by Alison Smith

Course Code- SEC-C(6)	**Course Tittle- Surface Ornamentation**	**Credits- 2(1-0-1)**

Course Outcomes:

To acquaint the students for proper blending of traditional skills with modern trends using various techniques for surface ornamentation and embroidery.

Unit	*Topic*	*No. of Lectures*
Unit 1	Embroidery: Introduction, types and introduction to various components like materials, instruments, tracing tools etc. required for hand embroidery	**3**
Unit 2	Hand Stitches: Running, Back Stitch Variations - Bullion Knot-Button Hole and Blanket, Chain Stitch, Cable Chain Stitch, Daisy Chain Stitch, Open Chain Stitch, Russian Chain Stitch, Zigzag Cable Stitch, Cross Stitch, Feather Stitch, Chained Feather Stitch, Closed Feather Stitch, Fern Stitch-Fish Bone Stitch, Fly Stitch, Herring Bone Stitch, Satin Stitch, Spiders Web, Stem Stitch, Overcasting, Straight Stitch	**6**
Unit 3	Patch work-Structure, Types of patch work-Traditional patchwork, Crazy patchwork, Crochet patchwork, Appliqué work, Quilting, cut work, eyelet work.	**3**
Unit 4	Crochet – Introduction, tools, material, techniques and types. Knitting – Basic, Texture, Rib, Diagonal, lace pattern, cable pattern. Mirror work, fabric painting	**3**

Course Code- SEC-C(6) P	**Course Tittle- Surface Ornamentation (Practical)**	*No. of Lectures*
Practical	**1. Hand Embroidery** Introduction to embroidery tools and materials. Practice of basic stitches: Running, Stem, Chain, Satin, French Knot, Lazy Daisy. Sample creation combining 5–7 stitches.Design and complete one article (e.g., cushion cover or handkerchief). **2. Appliqué WorkTechniques**: Flat and raised appliqué, Sample preparation with fused and stitched appliqué.Create one small article using appliqué (e.g., tote bag panel or pouch). **3. Patchwork**Types: Geometric, crazy, block patchwork.Preparation of sample patchwork blocks. **4. Fabric Painting** Techniques: Freehand, block painting, stencil, and tie-dye with painting.Use of fabric paints and brushes on cotton or blends. **5. Tie and Dye:** Methods: Spiral, knot, folding, bandhani, Use of natural and synthetic dyes. Fabric samples of 2–3 styles with design documentation. **6. Batik Printing:** Wax-resist dyeing technique: Application, cracking, and dyeing, Safety handling of hot wax, Prepare a batik sample with 2-color dyeing. **7. Mirror Work and Bead Embellishment:** Techniques of attaching mirrors and beads for decorative effect. **8. Product Development (Mini Project):** Design and execute **one final product** (e.g., table runner, dupatta, or wall art) combining two or more ornamentation techniques.	**30**

Suggested readings:

- **Colston, B. (2002).** *Textile Surface Decoration*A&C Black Publishers.
- **Kale, S. & Kadolph, S. J. (2007).** *Textiles* (10th Edition)Pearson Education.
- **Naik, S. D. (2005).** *Traditional Embroideries of India*APH Publishing.

Course Code- SEC-C(6)	**Course Tittle- Hands on Training in Designing and Production of Textile/ Internship**	Credits- 2(0-0-2)

Course Outcomes:

- *To gain hands on experience of working in the areas related to Fabric and Apparel Sciences like textile testing, apparel manufacturing and marketing, textile processing, textile conservation, etc.*

Unit	*Topic*	*No. of Lectures*
	Internships exposed to students about the understanding the way particular industry functions and what it would be like to work in that scenario. The candidates gain valuable insights into their own personalities and skills. The students could work with Government agencies/ international agencies, NGO's and private organizations associated with production, testing and marketing textile products. The students must participate in the ongoing activities of the organization as advised by the faculty, collect the required information and prepare a written report to be presented in the department.	30

SEC-D: CHILD DEVELOPMENT SKILLS

Course Code- SEC-D(1)	**Course Tittle- Family Support Services**	Credits- 2(1-0-1)

Course Outcomes:

- *To understand the concept, significance, and need for family support services.*
- *To learn about various models, policies, and programs related to family welfare.*
- *To equip students with skills to plan, implement, and evaluate family support services.*
- *To explore challenges and best practices in delivering effective family support.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Introduction to Family Support Services Definition, Scope, and Objectives of Family Support Services. Theories and Models related to Family Support. Role of Family in Socialization and Support Networks.	3
Unit 2	Types of Family Support Services • Preventive Services • Developmental Services • Remedial Services Protective Services	4
Unit 3	National and International Policies on Family Welfare. Major Government Schemes related to Family Support in India: Integrated Child Protection Scheme (ICPS) National Family Benefit Scheme (NFBS) Beti Bachao Beti Padhao ICDS. Role of NGOs and International Organizations (UNICEF, WHO) in Family Support.	4
Unit 4	Intervention Strategies and Skills Family Assessment Techniques. Communication and Counselling Skills. Emerging Issues and Trends Impact of Urbanization and Migration on Families. Family Stress, Mental Health, and Coping Strategies. Role of Technology in Family Support (Tele-counselling, Online Resources)	4

Course Code- SEC-D(1) P	**Course Tittle- Family Support Services (Practical)**	
Practical	• Visit to a Local Family Support Center / NGO • Conduct a Family Needs Assessment Survey • Role-Play / Case Study Discussion • Organize a Mini Awareness Session • Preparation of awareness materials for families	*No. of Lectures* 30

Suggested Readings:

- Mallon, G. P. & Hess, P. M. (2014). Child Welfare for the Twenty-First Century: A Handbook of Practices, Policies, and Programs.
- Singh, A. J. (2016). Family and Child Welfare Services in India.
- UNICEF & Save the Children Reports on Family Support.
- Indian Government Policy Documents on Family Welfare Schemes.

Course Code- SEC-D(2)	Course Tittle- Method & Material for Young Children	Credits- 2(1-0-1)

Course Outcomes:

1)Understand the principles of early childhood education and their application in curriculum planning.
2)Explain the importance of child-centered and age-appropriate methods.
3)Identify and evaluate various teaching-learning methods suitable for young children.
4)Select and design appropriate learning materials for different developmental domains.

Unit	*Topic*	*No. of Lectures*
Unit 1	Introduction to Early Childhood Education Importance and Objectives of Early Childhood Care and Education (ECCE). Characteristics of young children (0-6 years) – physical, cognitive, emotional, social development. Role of play in learning and development. Principles of curriculum planning for young children.	3
Unit 2	Methods of Teaching Young Children • Play-way Method. • Montessori Method. • Kindergarten Method. • Project Method. • Activity-Based Learning. • Storytelling, Rhymes, Songs, Puppet Shows, Dramatization. • Group activities and field trips as learning methods.	4
Unit 3	Educational Materials for Young Children • Criteria for selecting age-appropriate materials. • Types of materials: • Visual (picture books, charts, flashcards). • Tactile (blocks, puzzles, clay, sand play). • Auditory (musical instruments, sound toys). • Creative (drawing, coloring, collage, craft materials). • Use of natural and recycled materials. • Safety, hygiene, and durability of materials.	4
Unit 4	Designing and Preparing Learning Materials Principles of designing developmentally appropriate materials. Preparation of: Story cards and charts. Puzzles and games. Art and craft kits. Sensory material kits. Low-cost/no-cost teaching aids.	4

Course Code- SEC-D(2) P	Course Tittle- Method & Material for Young Children (Practical)	*No. of Lectures*
Practical	1. Preparation of Teaching-Learning Materials 2. Demonstration of Teaching Methods 3. Visit to Preschool / Anganwadi Center 4. To enhance language and imagination through storytelling. 5. To support sensory exploration and fine motor development 6. To encourage learning at home through parent-child interaction.	30

Suggested Readings:

- Hurlock, E.B. (2005). Child Development. McGraw Hill.
- Swaminathan, M. (1998). The First Five Years: A Critical Perspective on Early Childhood Care and Education in India. Sage Publications.
- Kaul, V. (2019). Early Childhood Education Programme. NCERT.

Course Code- SEC-D(3)	Course Tittle- Preschool Management	Credits- 2(1-0-1)

Course Outcomes:

- *To understand the principles and practices of managing a preschool.*
- *To acquire knowledge about planning, organizing, and administrating preschool settings.*
- *To develop skills in curriculum planning, staff management, budgeting, and parent involvement.*
- *To promote awareness of legal, ethical, and safety issues in preschool management.*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Introduction to Preschool Education:** • Concept, Importance, and Objectives of Preschool Education. • Types of Preschools (Daycare, Montessori, Play School, Kindergarten, Anganwadi, Balwadi). • Role of Preschool Education in Child Development (0-6 years).	3

Unit 2	**Planning and Organization of a Preschool:**
	• Principles of Preschool Management.
	• Location, Layout, and Physical Facilities:
	  ○ Indoor and outdoor space planning.
	  ○ Furniture, equipment, and teaching aids.
	• Registration and Licensing Procedures.
	• Budgeting and Financial Management.
	• Health, Safety, and Hygiene Standards
		4

Unit 3	**Curriculum Planning and Implementation:** • Developmentally Appropriate Curriculum. • Scheduling daily routines and activities. • Balancing cognitive, physical, emotional, and social activities. • Incorporation of play-based, activity-oriented learning. • Assessment and evaluation of preschool programs.	5
Unit 4	**Human Resource Management and Parent and Community Involvement** • Recruitment and Selection of Staff (Teachers, Caregivers, Helpers). • Roles and Responsibilities of Preschool Staff. • Staff Training and Professional Development. • Staff Supervision, Motivation, and Appraisal. • Communication and Team Building in Preschool Settings. • Importance of Parent-Teacher Partnerships. • Strategies for effective communication with parents (Meetings, Newsletters, Workshops). • Organizing Parent Involvement Programs.	3

Course Code- SEC-D(3) P	Course Tittle- Preschool Management (Practical)	*No. of Lectures*
Practical	1.Field Visit to a Preschool / Anganwadi / Nursery School 2. To observe the infrastructure, routines, staff organization, and daily functioning of a preschool. 3. To create an age-appropriate daily schedule for 3–5-year-old children. 4. To design a model layout for a safe, functional, and engaging preschool environment. 5. To understand staffing patterns and responsibilities in a preschool. 6. To prepare tools for effective communication between preschool and parents.	30

Suggested Readings:

- *Swaminathan, M. (1998). The First Five Years: A Critical Perspective on Early Childhood Care and Education in India. Sage Publications.*
- *Kaul, V. (2019). Early Childhood Education Programme. NCERT.*
- *Mohite, P. & Kaur, B. (2017). Early Childhood Care and Education. PHI Learning.*

Course Code- SEC-D(4)	**Course Tittle- Intervention of Children with Special Needs**	Credits- 2(1-0-1)

Course Outcomes:

- *To understand the concept, types, and characteristics of children with special needs.*
- *To gain knowledge of early identification, assessment, and intervention techniques.*
- *To learn strategies for inclusive education and family involvement.*
- *To develop practical skills in planning and implementing intervention programs.*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Introduction to Children with Special Needs** • Definition and Classification of Special Needs. • Categories of Disabilities: Physical Disabilities, Intellectual Disabilities, Sensory Impairments (Hearing, Visual), Learning Disabilities, Autism Spectrum Disorder (ASD), Behavioral and Emotional Disorders • Causes and Risk Factors. • Importance of Early Identification and Intervention.	4
Unit 2	**Assessment and Identification Techniques** • Screening and Assessment Methods: Developmental Milestones Checklist, Psychological and Educational Assessments, Medical Assessments • Role of Family, Teachers, Health Professionals in Identification. • Referral Procedures and Documentation. • Introduction to Individualized Education Plan (IEP) and Goal Setting.	3
Unit 3	**Intervention Strategies and Inclusive Education** • Therapeutic Interventions: Speech Therapy, Occupational Therapy, Physiotherapy, Behavioral Therapy • Educational Interventions: Remedial Teaching Techniques, Use of Assistive Devices and Technology, Play Therapy, Music Therapy, Art Therapy. • Concept and Importance of Inclusive Education. • Classroom Environment Modification. • Curriculum Adaptation and Differentiation. • Peer Group Involvement and Social Integration. • Role of Teachers, Special Educators, and Support Staff.	5
Unit 4	**Family, Community Involvement & Government Policies** • Counseling and Guidance for Parents and Caregivers. • Parent Education Programs and Workshops. • Community Awareness and Sensitization Programs. • Overview of Government Policies and Schemes: Rights of Persons with Disabilities Act (RPWD Act), National Policy on Education (NPE), Sarva Shiksha Abhiyan (SSA) & Inclusive Education Component, Schemes by Ministry of Social Justice and Empowerment.	3

Course Code- SEC-D(4) P	**Course Tittle- Intervention of Children with Special Needs (Practical)**	*No. of Lectures*
Practical	• To observe the teaching methods, infrastructure, and interventions used with children who have special needs. • To prepare customized teaching aids suitable for children with cognitive or physical challenges. • To understand the development, challenges, and progress of a child with special needs. • To demonstrate activities that support sensory development and regulation. • To understand positive reinforcement and behavioral strategies. • To become familiar with institutions and schemes supporting children with special needs. • Plan for Institutional Visit to a Special School / Center for Children with Special Needs.	30

Suggested Readings:

- Hallahan, D.P., Kauffman, J.M. & Pullen, P.C. (2014). *Exceptional Learners: An Introduction to Special Education*. Pearson.
- Sharma, R.A. (2016). *Children with Special Needs: Guidance and Counselling*. R.Lall Book Depot.
- Mani, M.N.G. (2004). *Resource Book for Special Education*. RCI Publication.

Course Code- SEC-D(5)	**Course Tittle- Hands on training in Early Child Center /Preschool Center/Anganwadi/Special Schools**	**Credits- 2(0-0-2) Total hours:30**

Course Outcomes:

- *To provide practical exposure to students by engaging them in real-life settings where early childhood education, care, and special interventions are implemented.*
- *The aim is to develop professional skills, practical understanding, and empathy towards children in various educational and developmental settings.*

Descriptions

1. Orientation Visits:

hild Care Center / Preschool / Anganwadi / Special Needs Institution.
physical environment, staff roles, and daily routine.
ation covering infrastructure, learning environment, child-teacher ratio, and teaching materials used.

2. Interaction with Children:

- Engage directly with children (0-6 years) in group and individual settings.
- Observe and record:
  - Physical, cognitive, emotional, and social behavior.
  - Children's responses to different activities and materials.
- Interact with children having special needs (if possible), focusing on understanding their unique challenges.

3. Conducting Teaching-Learning Activities:

- Plan and execute **minimum 5 play-based and learning activities** (songs, storytelling, puppet shows, craft, sensory play).
- Activities should be developmentally appropriate, inclusive, and adaptable for children with special needs.
- Use teaching-learning materials (prepared by the student) during sessions.

4. Preparation of Educational Materials:

- Prepare a minimum of 10 different types of teaching-learning aids:
  - Visual aids (flashcards, picture books)
  - Tactile aids (puzzles, clay models)
  - Creative aids (art kits, collage materials)
  - Sensory kits (sound, texture materials)
  - Low-cost/no-cost aids using recycled/natural materials.
- Special emphasis on aids adaptable for special needs children.

5. Family and Community Involvement:

- Participate in Parent-Teacher Meetings or awareness programs (if scheduled).
- Observe how family and community are involved in child care and special education.
- Prepare a short report on strategies used for community involvement and parental guidance.

6. Documentation and Reporting:

- Maintain a Daily Diary / Field Journal documenting:
  - Activities conducted.
  - Observations of children's behavior and development.
  - Feedback from teachers/supervisors.
  - Reflection on challenges and learning outcomes.

7. Prepare a Portfolio consisting of:

- Photographs, charts, aids prepared.
- Session plans and evaluation sheets.
- Final Summary Report covering overall experience, learnings, and suggestions.

Course Code- SEC-D(6)	**Course Tittle- Project work related to Child development Skills**	**Credits- 2(0-0-2) Total hours: 30**

Course Outcomes:

- To provide practical exposure to students by engaging them in real-life settings where early childhood education, care, and special interventions are implemented.
- The aim is to develop professional skills, practical understanding, and empathy towards children in various educational and developmental settings.

Project Work Instruction

Students are required to select **one topic** related to any of the following areas for an in-depth, intensive study:

- Early Childhood Care Centre
- Preschool Centre
- Anganwadi
- Intervention with Children with Special Needs

They are expected to actively engage with and attach themselves to one of these settings during the semester, gaining hands-on experience and practical exposure. Each student must prepare a comprehensive **project report** based on their study and practical involvement, to be submitted for final evaluation at the end of the semester.

SEC-E: RESOURCE MANAGEMENT SKILLS

Course Code- SEC-E(1)	**Course Tittle- Fundamental of Art and Design**	**Credits- 2(1-0-1)**

Course Outcomes:

- *Understand elements and principles of art and design*
- *Develop an understanding of the application of art principles in design composition of traditional and contemporary art, architecture, textiles and interior design.*
- *Develop skill in creating designs and making art objects.*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Introduction to Foundation of Art** Design definition and types (structural & decorative) Elements of design: point, line, shape, form (O-D, l-D, 2-D, 3-D) Light: characteristics & classification Study of colours: classification, dimensions, colour schemes and effect.	3
Unit 2	**Principles of Design Composition** Contrast & Harmony Figure: ground relationship, grouping of figures, elements by spatial tension & likeness basis	4
Unit 3	Unity, Balance, Movement, Proportion or scale, Rhythm, Dominance or subordination	4
Unit4	Application of Element of Design & Principles of Design Composition in Interiors Including the Role of Accessories	4

Course Code- SEC-E(1) P	**Course Tittle- Fundamental of Art and Design (Practical)**	*No. of Lectures*
Practical	• **12-step color wheel.** • Design Sheets of Colour Scheme Effects • Create samples of **monochromatic, analogous, complementary** color schemes using colored paper or paints. • Design from Nature for Interior Patterns • Abstract and Geometric Composition for Wall Art • Application of Elements of Design (line, color, texture, space, form • Application of Principles of Design (rhythm, balance, emphasis) • Surface Pattern Design (tiles, wallpapers, floorings) Traditional Indian Art in Interiors (e.g., Warli, Madhubani, Kalamkari, Aipan etc).	**30**

Suggested Readings.

1. Bhat Pranav &GoenkaShanita, ***The Foundation of Art & Design***, Lakhani Book Depot., Bombay, 1990
2. Goldstein H & Goldstein V, ***Art in Everyday Life***, Oxford and IBH Publishing Company, New Delhi, 1967.
3. Rutt Anna Hong, ***Home Furnishing***, Wiley Eastern Pvt. Ltd., 1961
4. Scott R G, ***Design Fundamentals***

Course Code- SEC-E(2)	**Course Tittle- Residential and Commercial Space Design**	**Credits- 2(1-0-1)**

Course Outcomes:

- *Acquire knowledge of principles of Interior Design for residential and commercial spaces.*
- *Learn to provide adequate facilities for work, relaxation, comfort, privacy, aesthetics, and maintenance through design and proper choice of materials, services, fittings and fixtures in interiors of residences.*
- *To develop the skill in visualizing and designing spaces of commercial interiors considering the principles of designs, anthropometric data and ergonomic criteria.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Study of Factors Influencing Decisions Related to Furnishing of Residential Interior Spaces Principles of design, needs and preferences, climate, availability and budget	3
Unit 2	Assessment & Allocation of space for Various Activities in Different Rooms in residential set up.	2
Unit 3	Study of Commercial Interior Design with the Perception of Purpose, Function & Aesthetics Basic needs: ergonomic consideration, psychological, aesthetic, occupational and professional development. Current Trend in Commercial Interior Design	4
Unit4	Interior Design of Commercial Spaces with Their Types Planning considerations: functions, orientation, circulation, grouping, light, ventilation, privacy, climatic and ergonomic factors, aesthetics & cost. Standards: Service (electrical, lighting, water supply, drainage, air conditioning) Materials & finishes (wood, glass, plastic, metals, acoustical boards, floor covering, panelling materials, false ceiling material) Furniture details. Study of Commercial Space: offices, educational institutions, restaurants based on different factors	6

Course Code- SEC-E(2) P	**Course Tittle- Residential and Commercial Space Design (Practical)**	*No. of Lectures*
Practical	• Measurement and drafting of room layouts (2D floor plans) • Preparation of furniture layouts for bedrooms, kitchens, living rooms • Space planning for commercial interiors (e.g., boutique, salon, office, café) • Designing theme-based interior mood boards • Application of principles of design and ergonomics • Color schemes and material board preparation for residential vs. commercial settings.	30

Suggested Readings.

- AganTessi, ***The House - Its Plan and Use***, JB Lippincott & Co.,1976
- Alexander NJ ***Designing Interior Environment***, Harcourt Brace, Johanovich, New York
- Allen Edward, ***How Buildings Work,*** Oxford University Press
- Conran T, ***New House Book***, Guild Publishing, London
- De Chiara Joseph &Callender John, ***Time Saver Standards for Building Types forArchitectural Types,Interior Design***,McGrawHili Book Co.

Course Code- SEC-E(3)	**Course Tittle- Event Management**	Credits- 2(1-0-1)

Course Outcomes:

- *To understand the principles and practices of event planning and management.*
- *To develop an understanding of the types of events—social, educational, corporate, and cultural.*
- *To provide skills in budgeting, resource planning, and risk management in event execution.*
- *To enable students to design, organize, and evaluate events effectively.*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Introduction to Event Management** • Definition, scope, and significance • Classification of events: personal, professional, educational, social, corporate • Role of an event manager and event management companies • Steps in organizing an event	4
Unit 2	**Planning and Designing Events** • Event proposal and feasibility study • Theme development and program scheduling • Venue selection and layout planning • Legal permissions, insurance, and compliance	4
Unit 3	**Financial and Resource Management** • Budget preparation and cost estimation • Fundraising, sponsorship, and partnerships • Procurement and vendor management • Human resources and volunteer coordination	3
Unit4	**Marketing, Promotion, and Communication** • Branding and marketing strategies • Advertising: digital, print, and social media • Public relations and media handling • Guest management and communication protocols **Execution and Evaluation**	4

Course Code- SEC-E(3) P	**Course Tittle- Event Management (Practical)**	*No. of Lecture*
Practical	• Introduction to types of events (social, educational, corporate, community) • Preparation of an event proposal and budget • Design invitations, posters, and digital promotional materials • Theme selection and decor plan (table setting, color themes, centerpieces, etc.) • Simulate or organize a small event (e.g., awareness campaign, exhibition, food fest, or college function) • Maintain event documentation (schedules, budgets, feedback forms) • Presentation of post-event report and learning outcomes	30

Suggested Readings:

1. Van Der Wagen, L. – *Event Management* (Pearson)
2. Shone, A. & Parry, B. – *Successful Event Management: A Practical Handbook*
3. Gaur, S.S. & Saggere, S.V. – *Event Marketing and Management* (Vikas Publishing)

Course Code- SEC-E(4)	**Course Tittle- Ergonomic Design**	**Credits- 2(1-0-1)**

Course Outcomes

- *To develop aptitude in identifying the product/space design problems at place of work.*
- *To sensitize students to the importance of ergonomics in design.*
- *To understand interface of human element and the user perspective in the evolution of product / space design.*
- *To develop skill in designing specific work-centres and products.*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Ergonomics** – Concept, Importance Applications of Ergonomics in design and work efficiency.	**4**
Unit 2	Anthropometric Measurements –History and its application in interior designing for different work areas and workers. The bio- mechanisms of work as related to the user, the work and the environment.	**4**
Unit 3	**The User:** Components of worker input – affective, cognitive, temporal and physical physical, physiological, psycho- Physiological aspects of work.	**3**
Unit4	**Work Environment** Functional design and arrangement of work places. Indices of indoor comfort: ventilation, lighting, temperature, noise Work study Time and motion study, Energy Studies	**4**

Course Code- SEC-E(4) P	**Course Tittle- Ergonomic Design (Practical)**	*No. of Lectures*
Practical	• Anthropometric Measurement and Analysis • Evaluation of work Triangle and kitchen Layout • Time and Motion Study in Household Tasks • Posture Analysis During Different Household Activities • Ergonomic Design of Study/Work Units • Evaluation of household tool and equipment ergonomics	**30**

Suggested Readings:

- Bridger. R.S., "Introduction to Ergonomics."Mc. Graw HallInc, New York, 1995.
- Chiara J.D., Panero. J., Zelnik M., "Time Saver standards for Interior Design and Space Planning", McGraw Hill, Neuferts Architect"s Data, 1992.
- Lakhwinder Pal Singh, "Work Study and Ergonomics."Cambridge University Press, Noida, 2016.
- Mark.S.SandersandErnest.J.Mc.Cormick,"HumanFactorsinEngineeringand Design." Mc. GrawHallInc, New York, 1992.
- PheasantS,"Anthropometry,ergonomicsandDesignofwork",TaylorandFrancis, London, 2003.

Code-SEC-E(5)	Practical Skills on Training in Event and Decor Management	Credits-2(0-0-2) Total hours:30

Course Outcomes:

- *To provide practical exposure to event planning, organization, and décor management techniques.*
- *To train students in **theme selection, layout planning, and execution of décor elements.***

Unit	*Topic*	*No. of Lectures*

Student must engage themselves to the following hands-on activities:

- Design and execute décor for a small event (e.g., college function, awareness day, exhibition booth)
- Table setting and center piece design (formal/informal)
- Lighting, draping, and DIY decor element creation (garlands, banners, panels)
- Coordination with caterers, florists, and venue teams
- Submission of event report with photographs, layout plans, and learning outcom

Suggested Readings

- Gaur, S.S. & Saggere, S.V. – *Event Marketing and Management*
- Van Der Wagen, L. – *Event Management for Tourism, Cultural, Business and Sporting Events*
- Allen, J. – *The Business of Event Planning*
- The Wedding Decorators Handbook – Various publications (India-specific)
- Architectural Digest / Inside Outside Magazine – For design inspiration
- YouTube/Instagram Decor Blogs – For DIY décor and live demonstrations
- Pinterest & Canva – For theme boards and layout planning
- NABH / FSSAI Guidelines – For event hygiene and space regulations

Course Code- SEC-E(6)	**Course Tittle- Project**	**Credits- 2(0-0-2) Total hours: 30**

Course Outcomes:

- To enable students to apply theoretical knowledge of event and décor management in real or simulated settings.
- To develop practical skills in planning, designing, and executing themed events with appropriate décor elements.
- To enhance creative expression and aesthetic judgment through mood boards, layout design, and space styling.
- To build teamwork, leadership, and problem-solving skills during live event execution.
- To encourage professional documentation and evaluation of project outcomes through reports and presentations.

Unit	*Topic*	*No. of Lectures*

Student must engage themselves to the following project:

- Design and Execution of Décor for a Themed College Event / Celebration
- Students will **plan, design, and implement the décor** for a small-scale themed event (such as Freshers' Day, College Day, Cultural Fest, or Awareness Campaign). This will include concept development, layout planning, resource management, execution, and final documentation.
- Students will also submit a report (10–12 pages) along with layout drawing ,Photo documentation,Budget sheet (Excel or table format) and Feedback summary

SEC-F: EXTENSION RELATED SKILL

Course Code- SEC-F(1)	Course Tittle- Life Skills Education	Credits- 2(1-0-1)

Course Outcomes:

- *To increase knowledge and awareness of emotional competency and emotional intelligence at place of study/work.*
- *To develop interpersonal skills and adopt good leadership behaviour for empowerment of self and others.*
- *To set appropriate goals, manage stress and time effectively.*
- *To manage competency- mix at all levels for achieving excellence with ethics.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Introduction to Life Skills and life Skills Education Conceptual Basis of Life Skills: Definition, Need and significance. Evolution and Development of the Concept of Life Skill Education Introduction to Soft Skills, Aspects of Soft Skills	3
Unit 2	Classification of Life Skills - Generic, Problem Specific and Area Specific Skills Empathy: Sympathy, Empathy & Altruism Life Skills for Personal Effectiveness Skill of building Self-confidence and Self-Motivation Skill of goal Setting: Types, Steps, Personal vision and goal Life skills work in combination- thinking skills, social skills, and coping	4
Unit 3	Effective Communication: Assertiveness, Effective Listening, Barriers of Communication, Presentation Skills Negotiation Skills, Organizational Communication, Leadership Skills, Group Discussion Adaptability & Work Ethics	4
Unit4	Advanced Speaking Skills, Oral Presentation, Speeches & Debates, Combating Nervousness, Patterns & Methods of Presentation, Oral Presentation: Planning & Preparation Interviews, Planning & Preparing: Effective Resume Facing Job Interviews, Emotional Intelligence	4

Course Code- SEC-F(1) P	Course Tittle- Life Skills Education (Practical)	*No. of Lectures*
Practical	• Self-awareness and self-assessment (using SWOT analysis / personality tools) • Communication skills: verbal, non-verbal, and listening activities • Time management matrix and weekly planner preparation • Goal setting exercise (SMART goals) • Stress management techniques (deep breathing, journaling, role play) • Conflict resolution and negotiation role plays • Decision-making scenarios using case studies • Leadership & teamwork tasks (group games or simulations) • Financial literacy basics (budgeting, saving habits) • Social responsibility activity (campaign / awareness poster / volunteer work)	30

Suggested Readings:

1. Adolescence and Life Skills (2003) Commonwealth Youth Programme Asia Centre, Tata Mc Graw- Hill
2. Darkar Framework for Action, Education for All: Meeting our Collective Commitments, (April 2000), Dakar, Senegal.
3. Family Health International, NACO, USAID (2007). Life Skills Education tool kit for Orphans and vulnerable children in India

Web Sites:

- UNESCO – http://www.unesco.org/
- UNFPA - http://www.unfpa.org/
- UNICEF - http://www.unicef.org/
- United Nations - http://www.un.org/
- WHO - http://www.who.int/en/
- India Portal - www.indiaportal.gov.in
- http://hhd.org/sites/hhd.org/files/paho_lifeskills.pdf
- http://www.who.int/school_youth_health/media/en/sch_skills4health_03.pdf

Course Code- SEC-F(2)	Course Tittle- Communication and Extension for Sustainable Development	Credits-2(1-0-1)

Course Outcomes:

- *To Understanding Sustainable Development*
- *To gain knowledge of effective Communication Strategies*
- *To understand extension Approaches and Community Engagement*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Extension Education and Creative Communication for Sustainable Development:** Concept and Principles of Extension Community Development and Group Processes Participatory Approaches and Creative Methods: Learning Together Planning and Developing Extension Programme	4
Unit 2	**Community Resources and Sustainable Food Systems: Multi- dimensional Perspectives:** Sustainable Food Systems: Moving Towards Food and Nutrition Security for All Sustainable Livelihood Resources and Indigenous Knowledge Sustainable Livelihood Resources and Indigenous Knowledge Sustainable Consumption: towards Achievement of Health and 2030 agenda Gendered roles, and Women's Agency in Food Systems	4
Unit 3	**Communication for Development :** Development Communication in India Innovative Techniques for Behaviour Change Communication ICTs for Development Communication	4
Unit4	**Strengthening Capacities: Training, Advocacy and Partnerships** Training and Strengthening Capacities of the Stakeholders in Development Advocacy for Sustainable Development Collaborations and Partnerships for Change	3

Course Code- SEC-F(2) P	Course Tittle- Communication and Extension for Sustainable Development (Practical)	*No. of Lectures*
Practical	• Introduction to communication methods: audio, visual, and folk media • Prepare visual aids: posters, charts, flashcards on sustainable practices • Conduct a group discussion or skit on environment/health/women empowerment • Role play or street play on water conservation or waste management • Organize a community awareness activity (demo, rally, or exhibition) • Develop IEC material (Information, Education, Communication) on SDG topics • Interview a community member or NGO worker (record insights on local issues) • Prepare a community profile and identify local sustainability issues • Use participatory tools (e.g., PRA charts, resource mapping) in small group settings • Reflection and reporting	30

Suggested Readings:

- Satwik Bisarya | Anjali Shukla, Communication and Extension for Sustainable Development2023.
  - https://onlinecourses.swayam2.ac.in/nou22_ge55/preview

Course Code- SEC-F(3)	**Course Tittle- Training for Development**	Credits- 2(1-0-1)

Course Outcomes:

- *To equip students with the knowledge and skills to design implement and evaluate effective training programs*
- *Tto understand various training methods and techniques*

Unit	*Topic*	*No. of Lectures*
Unit 1	**Concept of Training** Training and learning Types of training Role of training and capacity building in HRD	5
Unit 2	**Methods and Techniques of Training:** Tools and techniques for training Designing and evaluation of Training Programs for different stakeholders (grassroot functionaries, managers, policy makers)	5
Unit 3	**Training Methods and Techniques:** Develop training modules for specific target groups and learning goals: adolescents, females, youth.	4
Unit4	**Training Agencies:** Agencies involved in training and development- NGOs, GOs and Corporate	2

Course Code- SEC-F(3) P	**Course Tittle- Training for Development (Practical)**	*No. of Lectures*
Practical	• Need Assessment for Training • Preparation of Training Plan • Design of Training Material / Aids • Conducting a Training Session • Evaluation of Training Effectiveness • Report Writing of Training Programme	30

Suggested Readings:

- Lyton R and Pareek U. (1990). Training for Development.New Delhi, Vistaar Publications.
- Subedi, N R, (2008). Advocacy Strategies and Approaches: A Training of Trainers Manual. International

Course Code- SEC-F(4)	**Course Tittle- Public Speaking**	Credits-2(1-0-1)

Course Objectives:

- *To familiarize the students with the various public speaking methods.*

Unit	*Topic*	*No. of Lectures*
Unit 1	Historical significance, definition and functions of public speaking Modes of public speaking and ethical responsibility in public speaking	3
Unit 2	Basic skills in public speaking- -Selecting and analyzing the speech topic. -Organizing and developing the topic. -Message style and delivery.	4
Unit 3	Characteristics of the audience and situation analysis. Public speaking: listening, display, content and appraisal of ideas.	4
Unit4	Presentation of speech: use and clarity of language, appropriate methods of delivery, speaker voice, and use of non-verbal communication Preparation and presentation of different types of speeches (speech to inform, to persuade, for special occasion, in small groups)	4

Course Code- SEC-F(4) P	**Course Tittle- Public Speaking (Practical)**	*No. of Lectures*
Practical	• Introduction to voice modulation and posture • Ice-breaker speech (1–2 minutes on "About Me") • Prepare and deliver an informative speech (nutrition, health, education) • Conduct a short persuasive speech (social or environmental issue) • Impromptu speaking activities (topic given on the spot) • Storytelling or personal narrative sharing • Group discussion and peer feedback session • Practice use of visual aids (charts, PPT, props) in public presentation • Conduct a role-play or simulate a community talk session • Final individual presentation on a chosen topic	30

Suggested Readings:

- Taylor, A. (1984). Speaking in public. 2nd ed. Prentice Hall Inc., New Jersey, U.S.A.
- David M. Jabusck et. al. (1981). Elements of speech Communication: Achieving competency. Houghton Mifflin Company, Boston.
- White, E. E. (1982). Practical Public Speaking. 4th ed. Macmillan Publishing Co. Inc., New York.
- Hunt, G. T. (1981). Public Speaking. Prentice Hall Inc., New Jersey.
- Raymond and Ross, S. (1983). Speech communication. Sixth edition. Prentice Hall Inc., New Jersey.
- Verderber, R. F. (1988). The challenger of effective speaking. 7th ed. Wadsworth Publishing Company, Belmort, California.
- Lucas, S. E. (1986). The art of public speaking. 2nd edition. Random House, New York.

Course Code- SEC-F(5)	Course Tittle- Survey Analysis and Report Writing	Credits-2(1-0-1)

Course Outcomes:

- *To understand basics of survey*
- *To comprehend designing of a questionnaire*
- *To conduct a simple valid survey and data collection*
- *To understand and report writing*

Unit	*Topic*	*No. of Lectures*
Unit 1	Survey: meaning and definition Identifying sample:characteristics of sample Types of survey, survey methods, advantages an disadvantages of survey, Essential steps in survey	4
Unit 2	Preparation of questionnaire, Types and parts of questionnaire, Qualities of good questionnaire, precautions in preparation of questionnaire. Piloting questionnaire	4
Unit 3	Data organization, forms of data presentation: table and graphs	2
Unit4	Report Writing: Forms of reporting, Parts of report, characteristics of good report, Explaining data in report, writing fact based conclusions, making recommendation and annexing required material.	5

Course Code- SEC-F(5) P	Course Tittle- Survey Analysis and Report Writing (Practical)	*No. of Lectures*
Practical	• Planning a Survey by identifying a relevant issue (e.g., dietary habits, child care practices, consumer preferences, sanitation practices etc.) followed by framing objectives, selecting suitable sampling method and consent form/ interview schedule. • Designing a Questionnaire / Interview Schedule by • Creating a structured questionnaire based on the survey topic including both closed-ended and open-ended questions. • Pilot testing the tool on 3–5 respondents and refine it based on feedback • Field Data Collection • Data Entry and Coding • Data Analysis Using Simple Statistics like percentages, frequencies, mean, median • Report writing.	30

Suggested Readings:

- **Kothari, C.R.** (2004). *Research Methodology: Methods and Techniques*. New Age International Publishers.
- **Gupta, S.P.** (2020). *Statistical Methods*. Sultan Chand & Sons.
- **Rao, K.N. & Appanaiah, H.R.** (2001). *Research Methodology for Home Science*. Himalaya Publishing House.
- **Best, J.W. & Kahn, J.V.** (2006). *Research in Education*. Pearson Education.
- **Neuman, W.L.** (2013). *Social Research Methods: Qualitative and Quantitative Approaches*. Pearson.
- **Mishra, R.C.** (2005). *Project Work and Report Writing in Home Science*.

Course Code- SEC-F(6)	Course Tittle- Project	Credits-2(0-0-2) Total hours:30

Course Objectives:

- *To develop skills in designing and conducting surveys relevant to areas of Home Science*
- *To collect, organize, and analyze primary data using appropriate tools and techniques.*
- *To interpret findings in the context of existing literature and draw meaningful conclusion*
- *To enhance the ability to write a structured, academic report based on research methodology.*
- *To apply ethical practices in fieldwork and data collection.*
- *To improve communication and presentation skills through written documentation and oral presentation of findings.*

Unit	*Topic*	*No. of Lectures*

Students will undertake a survey relevant to areas of Home Science and submit a project report along with survey tool, raw data , photographic evidence, consent form at the end semester.

Suggested Readings:

- **Mishra, R.C.** (2005). *Project Work and Report Writing in Home Science.*
- **Kothari, C.R.** (2004). *Research Methodology: Methods and Techniques*. New Age International Publishers.
- **Gupta, S.P.** (2020). *Statistical Methods*. Sultan Chand & Sons.

- **Value Addition Courses (VACs) as per University pool of VACs**
- **Ability Enhancement Courses (AECs) as per University pool of AECs**