

Dr. BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY,  
CHHATRAPATI SAMBHAJINAGAR.



**CIRCULAR NO.SU/ Sci./College/NEP-2020/105/2024**

It is hereby inform to all concerned that, In continuation circular No.SU./Revised B.Sc./NEP/72/2024/25588-96 dated 29.04.2024, the revised syllabi prepared by the Board of Studies/Ad-hoc Boards and recommended by the Dean, Faculty of Science & Technolgy, the Academic Council at its meeting held on 08 April 2024 has accepted **the following Revised B.Sc. Course Structure & Curriculum** as per direction by the State Government dated on 13 March 2024 under the Faculty of Science & Technology (as per National Education Policy – 2020) run at the Affiliated Colleges, Dr.Babasaheb Ambedkar Marathwada University as appended herewith.

Sr.No.	Courses	Semester
1	Non Conventional & Conventional Energy (Single Major)	Ist and IInd semester
2	Home Science (Single Major)	Ist and IInd semester
3	Bachelor of Computer Application (Single Major)	Ist and IInd semester
4	Computer Science (Single Major)	Ist and IInd semester
5	Data Science (Single Major)	Ist and IInd semester
6	Inforamtion Technology (Single Major)	Ist and IInd semester
7	Networking and Multimedia (Single Major)	Ist and IInd semester
8	Automobile Technology (Single Major)	Ist and IInd semester
9	Forensic Science (Single Major)	Ist and IInd semester
10	Forensic Science & Cyber Security (Single Major)	Ist and IInd semester

This is effective from the Academic Year 2024-25 and onwards.

All concerned are requested to note the contents of this circular and bring the notice to the students, teachers and staff for their information and necessary action.

University Campus,  
Chhatrapati Sambhajnagar  
-431 004.  
Ref.No. SU/Sci./2024/27121-28  
Date:-27.05.2024.

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**Deputy Registrar,**  
**Academic Section.**

**Copy forwarded with compliments to :-**

- 1] **The Principal of all concerned Colleges,**  
Dr. Babasaheb Ambedkar Marathwada University,
- 2] **The Director, University Network & Information Centre, UNIC, with a request to upload this Circular on University Website.**

**Copy to :-**

- 1] The Director, Board of Examinations & Evaluation, Dr.Babasaheb Ambedkar Marathwada University,Chhatrapati Sambhajanagar.
- 2] The Section Officer,[B.Sc.Unit] Examination Branch, Dr.Babasaheb Ambedkar Marathwada University,Chhatrapati Sambhajanagar.
- 3] The Programmer [Computer Unit-1] Examinations, Dr.Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajanagar.
- 4] The Programmer [Computer Unit-2] Examinations, Dr.Babasaheb Ambedkar Marathwada University,Chhatrapati Sambhajanagar.
- 5] The In-charge,[E-Suvidha Kendra], Rajarshi Shahu Maharaj Pariksha Bhavan, Dr.Babasaheb Ambedkar Marathwada University,Chhatrapati Sambhajanagar.
- 6] The Public Relation Officer, Dr.Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajanagar.
- 7] The Record Keeper, Dr.Babasaheb Ambedkar Marathwada University, Chhatrapati Sambhajanagar.

**Dr. Babasaheb Ambedkar Marathwada University**  
**Chhatrapati Sambhajinagar- 431001**



**B.Sc. Degree Programme**

**(Three Year / Four Years (Hons) / Four Years (Hons with Research))**

**Course Structure**

**(Revised)**

**( AS PER NEP-2020)**

**Subject (Major): HOME SCIENCE**  
**(Single Major)**

**Effective from 2024-25**

*S.S. Ardhapurkar*

Dr Swati S Ardhapurkar

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## PREFACE

As we stand on the threshold of a new era in education, the dawn of the National Education Policy 2020 illuminates our path toward a holistic, inclusive, and progressive educational landscape. The Bachelor of Science (B. Sc.) curriculum outlined herein reflects the ethos and aspirations of this transformative policy, aiming to equip learners with the knowledge, skills, and values necessary to thrive in the dynamic world of the 21st century.

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~~At its core, the National Education Policy 2020 envisions an educational framework that is~~ learner-centric, multidisciplinary, and geared towards fostering creativity, critical thinking, and innovation. It emphasizes the integration of knowledge across disciplines, breaking down traditional silos to encourage holistic understanding and application of concepts. The Bachelor of Science (B. Sc.) curriculum embodies these principles by offering a diverse array of courses spanning various scientific domains, while also incorporating interdisciplinary studies to nurture well-rounded graduates capable of addressing complex challenges with agility and insight.

Furthermore, the curriculum is designed to promote experiential learning, research, and hands-on exploration, recognizing the importance of practical engagement in deepening understanding and cultivating real-world skills. Through laboratory work, field experiences, internships, and project-based learning opportunities, students will have the chance to apply theoretical knowledge in practical settings, develop problem-solving abilities, and cultivate a spirit of inquiry and discovery.

Integral to the National Education Policy 2020 is the commitment to inclusivity, equity, and access to quality education for all. The Bachelor of Science (B. Sc.) curriculum reflects this commitment by embracing diversity in perspectives, backgrounds, and experiences, and by fostering an inclusive learning environment where every student feels valued, supported, and empowered to succeed.

Moreover, the curriculum emphasizes the cultivation of ethical values, social responsibility, and global citizenship, instilling in students a sense of accountability towards society and the environment. By integrating courses on ethics, sustainability, and social sciences, the Bachelor of Science (B. Sc.) program aims to produce graduates who are not only proficient in their respective fields but also compassionate, ethical leaders committed to making a positive impact on the world.

As we embark on this journey of educational transformation guided by the National Education Policy 2020, the Bachelor of Science (B. Sc.) curriculum stands as a testament to our collective vision of a more equitable, inclusive, and enlightened society. It is our hope that through rigorous academics, innovative pedagogy, and unwavering dedication to excellence, we can inspire the next generation of scientists, scholars, and change-makers to realize their full potential and contribute meaningfully to the advancement of knowledge and the betterment of humanity.

### **Introduction to Undergraduate Degree course in Home science**

As per the recommendations of the NEP-2020, the undergraduate degree course in mathematics is a six/ eight semester course spread over three/ four academic years. The teaching – learning process is student-centric and it involves both theory and practical components. It offers flexibility of programme structure while ensuring that the student gets a strong foundation in the subject and gains in-depth knowledge. Besides the Discipline Specific Core (DSC) courses, a student can opt courses from the syllabus comprising of Discipline Specific Electives (DSEs), Generic Electives (GEs), Skill Enhancement Courses (SECs), Ability Enhancement courses (AECs) and Value Addition Courses (VACs). Thereby, bringing out the multidisciplinary approach and adherence to innovative ways within the curriculum framework. Moreover, it allows a student maximum flexibility in pursuing his/her studies at the undergraduate level to the extent of having the liberty to eventually design the degree with multiple exit options depending upon the needs and aspirations of the student in terms of his/her goals of life, without compromising on the teaching learning, both in qualitative and quantitative terms. This will suit the present day needs of students in terms of securing their paths towards higher studies or employment.

**Courses of Study:** Courses of study indicate pursuance of study in a particular discipline. Every discipline shall offer four categories of courses of study, viz. Discipline Specific Core (DSC) courses, Discipline Specific Electives (DSEs), Skill Enhancement Courses (SECs) and Generic Electives (GEs). Besides these four courses, a student will select Ability Enhancement Courses (AECs) and Value-Added Courses (VACs) from the respective pool of courses offered by the University.

- 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. In Bachelor of Science (Hons.) Home science programme, DSCs are the core credit courses of Home science 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.
- b) **Discipline Specific Elective (DSE):** The Discipline Specific Electives (DSEs) are a pool of credit courses of Home science from which a student will choose to study based on his/ her interest.
- c) **Generic Elective (GE):** Generic Electives is a pool of courses offered by various disciplines of study (excluding the GEs offered by the parent discipline) which is meant to provide multidisciplinary or interdisciplinary education to students. 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.
- d) **Ability Enhancement course (AEC), Skill Enhancement Course (SEC) and Value Addition Course (VAC):** These three courses are a pool of courses offered by all the Departments in groups of odd and even semesters from which a student can choose.
  - i. **AEC:** AEC courses are the courses based upon the content that leads to knowledge enhancement through various areas of study. They are based on Language and Literature, and Environmental Science which are mandatory for all disciplines.

ii. **SEC:** SECs 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.

iii. **VAC:** VACs 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 and physical education and teamwork which will help in all round development of students.

**Structure of B. Sc. (Three / Four Years Honours / Honours with Research Degree) Programme with Multiple Entry and Exit Options**

**Subject (Major): H O M E S C I E N C E**

**BSc First Year: 1<sup>st</sup> Semester**

Course Type	Course Code	Course Name	Teaching Scheme (Hrs / Week)		Credits Assigned		Total Credits
			Theory	Practical	Theory	Practical	
Major ( Core) M1 Mandatory	DSC-1	FUNDAMENTALS OF NUTRITION AND FOOD SCIENCE	2		2		2+2 = 4
	DSC-2	Practical based on DSC-1		4		2	
Major ( Core) M2 Mandatory	DSC-1	PRENATAL DEVELOPMENT AND INFANCY	2		2		2+2 = 4
	DSC-2	Practical based on DSC-1		4		2	
Major ( Core) M3 Mandatory	DSC-1	HOUSE KEEPING	2		2		2+2 = 4
	DSC-2	Practical based on DSC-1		4		2	
Generic / Open Elective ( GE/OE) (Choose any one from pool of courses) <b>It should be chosen compulsorily from the faculty other than that of Major</b>	GE/OE-1	To be chosen from other faculty	2		2		2
<b>SEC</b> ( Skill	SEC-1	1)BASICS OF DESIGN 2) JAM,JELLY	1		1		2

Enhancement Courses) (Choose any one from pool of courses)		AND SQUASH PREPARTION					
	SEC-2	Practicals based on SEC-A Practicals based on SEC-B		2		1	
AEC, VEC, IKS	AEC-1	English ( Common for all the faculty)	2		2		2+2 =4
	IKS-1	Choose any one from pool of Courses	2		2		
OJT/ FP/CEP/CC/RP	CC-1	Health and Wellness ( Common for all the faculty)		4		2	2
			<b>13</b>	<b>18</b>	<b>13</b>	<b>09</b>	<b>22</b>

GE/OE-1 : PRINCIPLES OF FOOD PROCESSING  
(this course will be available for the students from other faculty)

**BSc First Year: 2<sup>nd</sup> Semester**

Course Type	Course Code	Course Name	Teaching Scheme ( Hrs / Week)		Credits Assigned		Total Credits
			Theory	Practical	Theory	Practical	
Major ( Core) M1 Mandatory	DSC-3	FUNDAMENTALS OF TEXTILE	2		2		2+2 = 4
	DSC-4	AND EMBROIDARY Practical based on DSC-3		4		2	
Major ( Core) M2 Mandatory	DSC-3	INTRODUCTION TO FRM	2		2		2+2 = 4
	DSC-4	Practical based on DSC-3		4		2	
Major ( Core) M3 Mandatory	DSC-3	EXTENSION EDUCATION AND COMMUNICATION	2		2		2+2 = 4
	DSC-4	Practical based on DSC-3		4		2	
Generic / Open Elective ( GE/OE) (Choose any one from pool of courses) <b>It should be chosen compulsorily from the faculty other than that of Major</b>	GE/OE-2	To be chosen from other faculty	2		2		2
VSC ( Vocational Skill Courses) (Choose any one from pool of courses)	VSC-1	1)HAND EMBROIDARY 2) INDIAN CULINARY	1		1		2
	VSC-2	Practicals based on VSC-A Practicals based on VSC-B		2		1	

AEC, VEC, IKS	AEC-1	English ( Common for all the faculty)	2		2		
	VEC-1	Constitution of India ( Common for all the faculty)	2		2		2+2 =4
OJT/ FP/CEP/CC/RP	CC-2	Yoga Education / Sports and Fitness ( Common for all the faculty)		4		2	2
			<b>13</b>	<b>18</b>	<b>13</b>	<b>09</b>	<b>22</b>
<b>Exit Option : Award of UG Certificate in 3 Majors with 44 credits and an additional 4 credits of core NSQF course / Internship OR continue with Major and Minor</b>							

#### GE/OE-2: HOME BASED CATERING

(this course will be available for the students from other faculty)

Students will have to choose any three subjects as a **Major 1, Major 2, Major 3**, from Basket 1 under the Faculty of Science and Technology.

Students will be having three subject options of equal credits (instead of Major and / or minor verticals) in the first year. Students will have to select / declare choice of one subject as a **major subject** in the beginning of second year **out of three major options M1, M2 and M3 (which were opted in the first year)**.

#### Detailed Illustration of Courses included in 1<sup>st</sup> and 2<sup>nd</sup> semester:

1) **Major (Core)** subject are mandatory.

DSC-1 : This is a 2 credit theory course corresponding to Major ( core) subject

DSC-2 : This is a 2 credit practical course based on DSC-1

DSC-3 : This is a 2 credit theory course corresponding to Major ( core) subject

DSC-4 : This is a 2 credit practical course based on DSC-3

2) **Generic / Open Elective (GE/OE):** (Needs to be chosen (any one) from pool of courses available at respective college). **These courses should be chosen compulsorily from faculty other than that of Major.**

GE/OE -1 : This is a 2 credit theory course should be chosen compulsorily from faculty other than that of Major.

GE/OE -2 : This is a 2 credit theory course should be chosen compulsorily from faculty other than that of Major.

- 3) **SEC (Skill Enhancement Courses)** : Choose any one from pool of courses. These courses needs to be designed to enhance the technical skills of the students in specific area.

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**SEC-1** : This is a 1 credit theory course to enhance the technical skills of the students in specific area.

**SEC-2** : This is a 1 credit practical course based on SEC-1.

- 4) **VSC (Vocational Skill Courses)** : Choose any one from pool of courses. These courses should be based on Hands on Training corresponding to Major (core) subject.

**VSC-1** : This is a 1 credit theory course based Hands on Training corresponding to Major ( core) subject.

**VSC-2** : This is a 1 credit practical course based on VSC-1

- 5) **AEC (Ability Enhancement courses)**: The focus of these courses should be based on linguistic and communication skills.

**AEC-1 : English**

This is a 2 credit theory course based on linguistic proficiency. It will be common for all the faculty.

**AEC-2 : English**

This is a 2 credit theory course based on linguistic proficiency. It will be common for all the faculty.

- 6) **IKS (Indian Knowledge System)** : The courses related to traditional and ancient culture of India will be included in this section. The respective college will have to choose one of the courses from the pool of courses designed by the University.

**IKS-1 : To be chosen from the pool of courses designed by the University**

This is a 2 credit theory course based on Indian Knowledge System. It will be common for all the faculty

- 7) **VEC (Value Education Courses)**: The courses such as understanding India, Environmental Science / Education, Digital and Technological solutions etc will be part of Value Education Courses.

**VEC-1 : Constitution of India**

This is a 2 credit theory course based on value education. It will be common for all the faculty

- 8) **CC (Curricular Courses):** The courses such as Health and wellness, Yoga education, Sports and Fitness, Cultural activities, NSS/NCC, Performing Arts.

**CC-1 : Health and Wellness**

This is a 2 credit practical course based on Co-curricular activities. It will be common for all the faculty

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**CC-2 : Yoga education / Sports and Fitness**

This is a 2 credit practical course based on Co-curricular activities. It will be common for all the faculty

**General Guidelines for Course Selection**

- 1) The Major subject is the discipline or course of main focus, bachelors degree shall be awarded in that discipline / subject.
- 2) Students will have to choose any three subjects as a Major 1, Major 2, Major 3, from **Basket 1** under the Faculty of Science and Technology (based on the available options in the respective college).
- 3) Students will be having three subject options of equal credits (instead of Major and / or minor verticals) in the first year.
- 4) In the beginning of second year, students will have to select / declare choice of **one major subject and one minor subject** from three major options **M1, M2 and M3 (which were opted in the first year)**
- 5) Once the students finalize their **Major Subject** and **Minor Subject** in the beginning of the second year of the programme, they shall pursue their further education in that particular subject as their **Major and Minor** subjects. Therefore, from second year onwards curriculum of the Major and Minor subjects shall be different.
- 6) Students are required to select **Minor subject** from **other discipline of the same faculty**
- 7) Students are required to select **Generic /Open Elective** (vertical 3 in the credit framework) **compulsorily from the faculty different than that of their Major / Minor subjects.**
- 8) Vocational Skill Courses and Skill Enhancement Courses (VSC and SEC) shall be related to the Major subject
- 9) Curriculum of Ability Enhancement Courses (AEC), Value Education Courses (VEC), Indian Knowledge System (IKS), and Co-curricular Courses (CC) will be provided by the University separately.

**Programme Educational Objectives (PEOs) :**

Programme Educational Objectives (PEOs) for the Bachelor of Science Curriculum under the National Education Policy 2020:

1. **Mastery of Discipline-Specific Knowledge:** Graduates of the Bachelor of Science program will demonstrate a deep understanding of fundamental principles, theories, and methodologies in their chosen scientific discipline, enabling them to analyze complex problems, propose innovative solutions, and contribute to advancements in their field.
2. **Interdisciplinary Proficiency:** Graduates will possess the ability to integrate knowledge and skills from multiple scientific disciplines, fostering a holistic approach to problem-solving and innovation. They will be equipped to address multifaceted challenges by drawing upon diverse perspectives and methodologies.
3. **Critical Thinking and Analytical Skills:** Graduates will develop strong critical thinking abilities, enabling them to evaluate information rigorously, analyze data effectively, and make informed decisions based on evidence. They will demonstrate proficiency in applying logical reasoning and scientific methods to solve problems and generate new knowledge.
4. **Leadership and Innovation:** Graduates will demonstrate leadership qualities and entrepreneurial mindset, capable of initiating and driving positive change in their organizations and communities. They will exhibit creativity, resilience, and adaptability, harnessing innovation to address complex challenges and seize opportunities for growth and advancement.
5. **Global Citizenship and Cultural Sensitivity:** Graduates will possess a global perspective and cultural sensitivity, recognizing the interconnectedness of diverse communities and the importance of collaboration across borders. They will engage in cross-cultural dialogue, embrace diversity, and contribute to the advancement of knowledge and understanding on a global scale.

These Programme Educational Objectives serve as guiding principles for the Bachelor of Science curriculum, reflecting our commitment to nurturing well-rounded graduates who are prepared to excel in their careers, contribute to society, and lead meaningful lives in a rapidly changing world.

**Programme Outcomes (POs) :**

The National Education Policy (NEP) 2020 for India emphasizes several key aspects for Bachelor of Science (B.Sc.) programs, aiming to produce graduates who are not only well-versed in their respective disciplines but also equipped with skills necessary for holistic development and employability. While specific program outcomes may vary between institutions and disciplines within B.Sc. programs, here are some common outcomes aligned with NEP 2020:

- **PO1. The citizenship and society:** Apply broad understanding of ethical and professional skill in science subjects in the context of global, economic, environmental and societal realities while encompassing relevant contemporary issues.
  - **PO2. Environment and sustainability:** Apply broad understanding of impact of science subjects in a global, economic, environmental and societal context and demonstrate the knowledge of, and need for sustainable development.
  - **PO3. Ethics:** Apply ability to develop sustainable practical solutions for science subject related problems within positive professional and ethical boundaries.
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- **PO4. Individual and team work:** Function effectively as a leader and as well as team member in diverse/ multidisciplinary environments.
  - **PO5. Communication:** Communicate effectively on complex science subject related activities with the scientific community in particular and with the society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
  - **PO6. Project management and finance:** Demonstrate knowledge and understanding of the first principles of science and apply these to one's own work as a member and leader in a team, to complete project in any environment.
  - **PO7. Life-long learning:** Recognize the need for lifelong learning and have the ability to engage in independent and life-long learning in the broadest context of technological change.

These program outcomes align with the broader goals of NEP 2020 to transform higher education in India and prepare students for the challenges and opportunities of the 21st century. Board of Studies designing B.Sc. curricula are encouraged to incorporate these outcomes into their program objectives and learning outcomes.

**Programme Specific Outcomes (PSOs):**

**Programme specific outcome.**

**On completion of three/four year degree course in B.Sc. Home science students will be able to**

1. **PSO 1 : Disciplinary knowledge and skills :** students are capable in demonstrating basic theoretical and practical knowledge and understanding in subjects like Food Science and nutrition, Textiles and clothing ,human development and family studies, Resource Management and Extension and communication.

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2. **PSO 2 : Effective Communicator** :Students will be able to communicate precisely, confidently and with clarity among the rural and urban communities using attention seeking media on various educational topics for creating awareness and making better lives.
  3. **PSO 3 : Critical thinking, Analytical reasoning and Problem solving** : Students are able to employ critical thinking in identifying the problem developing analytical skills and capabilities to resolve the problem efficiently related to all the five specific areas on a tailor-made basis for a client, customer, an individual, family and Society either independently or with the support of concern authorities

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  4. **PSO 4 : Research and Scientific reasoning** : Students acquire skills in undertaking small researches by way of term paper ,case studies, market survey, field visits, laboratory experiments etc. on the related topics/ problems of the discipline and arrive at the results based on the scientific reasoning wherever applicable
  5. **PSO 5 : Cooperation / Team work** : Students acquiring capability of working enthusiastically and united with the working teams in organizing events in the department/ faculty/ University /community /and accomplishing group work /assignments/ tasks by willing cooperation of all and well-coordinated group living through during educational visits.
  6. **PSO 6 : Reflective thinking** : Students acquire ability to practice empathy and objectivity in dealing with personal and community interactions and problems.
  7. **PSO 7 : Digital Literacy** : Students get competency in accessing relevant and authentic information and data from electronic media with a motif to learn and synthesize it on the given topic in home science discipline for Academy and extension work presentation and to prepare Computer aided designs by using the needed software
  8. **PSO 8 : Self - directive learning** : Students get potential to complete the assigned projects successfully either at residential / commercial level or community level by managing resources independently and widely .

## FIRST SEMESTER

**DSC-1 : Title of Paper FUNDAMENTALS OF NUTRITION AND FOOD SCIENCE**

~~Total Credits : 02~~

~~Total Contact Hours : 30 Hrs~~

~~Maximum Marks : 50~~

**Learning Objectives of the Course: the course will make students understand.**

- 1. Various concepts used in food science and nutrition**
- 2. Various types of foods and their significance**
- 3. Functions of various macro and micronutrients**
- 4. Various food processing methods their effect on nutritional quality of foods**

**Course Outcomes ( COs) :**

After completion of the course, students will be able to learn -

- 1. Various functions of food and nutritional significance of food groups**
- 2. Importance of nutritional quality of foods by using different food processing methods**
- 3 Use of various processed foods in daily life**

ModuleNo.	Topics / actual contents of the syllabus	Contact Hours
<b>I</b>	Chapter-1 Concepts of Foods and Nutrition  a) - Details of Food, Nutrition, Balanced diet, RDA b) Functions of Foods c) Food Groups-Their nutritional significance  Chapter- 2 Types of foods	<b>10 Hrs</b>

	<p>a) Functional Food</p> <p>b) Novel Food,</p> <p>Nutraceutical foods and speciality foods etc</p>	
<b>II</b>	<p>Chapter-3 Food processing</p> <p>Food processing: Traditional-Boiling, Parboiling, Roasting, Frying</p> <p>Advanced Pressure Cooking, grilling, baking, microwave cooking, solar cooking.</p> <p>Chapter-4 Improvement of nutritional quality</p> <p>Germination and malting</p> <p>Fermentation and pickling</p> <p>c) Supplementation, Fortification and Enrichment</p>	<b>10 Hrs</b>
<b>III</b>	<p>Chapter-5 Nutrition and health</p> <p>a) Relation of nutrition to Health</p> <p>Macro Nutrients-Carbohydrates, Proteins and Fats</p> <p>Micronutrients- Vitamins, Minerals and</p> <p>c)Water-their functions</p> <p>Chapter-6 Processed foods</p> <p>a) Baked food.</p> <p>b) Fermented foods</p> <p>Cooked, steamed, and fried foods.</p>	<b>10 Hrs</b>
<p><b>Text Books:</b></p> <ol style="list-style-type: none"> <li>1. Dr M.S.Swaminahan "Advanced text book on foods and nutrition" vol.1 the Bangalore publishing co. ltd 1991.</li> <li>2. Sue Rodwell Williams "essentials of nutrition and diet therapy" Mosby yearbook, Inc 1994.</li> </ol>		

3. Prof Shobha Waghmare “poshan ani Aahar” Vidhya books publisher Aurangabad.2014.

**Reference Books:**

1. Mangala Kango “Norman nutrition” RBSA PUBLISHERS, Jaipur 2003
2. Sumati Kukade et al “food science” Seth publications Mumbai.2003.
3. M.Swaminathan “Handbook of food science and experimental foods” BAPPCO publications Bangalore 1988.
4. Dr Manjusha Molawane “Annache Vidnyan” Atmabhan publication. Hingoli,2016.

**DSC-2 : Title of Paper practicals based on DSC 1**

Total Credits : 02

Total Contact Hours : 60 Hrs Maximum Marks : 50

**Learning Objectives of the Course: the course will make students understand.**

1. **Weights and measures of raw and cooked foods**
2. **How to prepare nutritious recipes for each income groups**

**Course Outcomes ( COs ) :**

After completion of the course, students will be able to learn –

1. Students can experiment with various measurements and various methods of cooking.
2. Knowledge of different food groups and its nutritional importance.

ModuleNo.	Topics / actual contents of the syllabus	Contact Hours
I	<b>Chapter-1 Weights &amp; Measures of Five Food Groups</b> (raw Minimum 10 and Maximum 20) <b>Chapter-2 Weights &amp; Measures of cooked food (any</b>	<b>20 Hrs</b>

	06) Chapati, Phulka, Paratha, Bhakri, Tandoor, Rice, Dal, Vegetable, Chuttney, Soup, Egg Omelet, One Serving Meat, Chicken, Fish, fried food & any sweet.	
II	Chapter- 3 Plan & prepare food group rich recipes for one serving each, for High, Medium and low-income groups. a) Cereals, Pulses and Legumes b) Vegetables, Roots & Fruits c) Milk & Milk Products d) Egg, Meat & Fish Sugar, Jaggery & Honey / Oils & Fats	20 Hrs
III	Chaper 4, plan and prepare nutrient rich recipe for one serving each for high medium and low-income group. Protein, energy, vitamin A , Vitamin B Complex vitamin calcium and iron	20 Hrs

**Text Books:**

1. Dr M. Swaminathan "Advanced Text book on food and nutrition" vol.1 BAPPCO publication, Bangalore 1991.
2. M. Swaminathan Handbook of food science and experimental foods" BAPPCO publications Bangalore 1988.

**Reference Books:**

1. Thangan E. Philip "modern cookery for teaching and trade" vol.1 Orient Longman Ltd .Bombay 1994.
2. Kamalabai Ogale "Ruchira" vol.1 Mehata publishing house, Pune 2012'

**DSC-1 : Title of Paper PRENATAL DEVELOPMENT AND IFANCYCY**

Total Credits : 02

Total Contact Hours : 30 Hrs Maximum Marks : 50

**Learning Objectives of the Course: the course will make students understand.**

- i) Reproductive system of human beings**
- ii) Developmental process during pregnancy**
- iii) Developmental tasks in pregnancy period.**

**Course Outcomes ( COs) :**

After completion of the course, students will be able to learn -

- 1. Students will know the health hazards of prenatal development and pregnancy.**
- 2. students will learn about the reproductive system and birth process.**

ModuleNo.	Topics / actual contents of the syllabus	Contact Hours
<b>I</b>	<b>Introduction to human Development</b> <ul style="list-style-type: none"><li>- Meaning, Definition, Importance, and scope of Human development</li><li>- Stages of Human Development</li></ul> Growth and Development – Definition, Principles difference. Reproduction of male and female, conception, sex determination	<b>10 Hrs</b>
<b>II</b>	<b>Beginning of new life</b> <ul style="list-style-type: none"><li>a. Preparation of parenthood,</li><li>- Finding right time, Emotional and psychological health care, physical health, reproductive health,</li></ul>	<b>10 Hrs</b>

	<p>preconception care, preserving fertility, Economic security etc.</p> <p>b. Prenatal development – Signs and symptoms, stages, of prenatal development, prenatal care.</p> <p>c. Factors affecting prenatal development pre connectional factors, maternal nutrition, maternal</p>	
	<p>health, maternal employment stages, maternal chronic illness, days infections exposure to toxins, cigarettes and tobacco, maternal emotions, RH factors, pollution</p> <p>d. Stages of birth process, types of birth.</p> <p>Postnatal care of mother and baby</p>	
<b>III</b>	<p><b>Infancy</b></p> <p>a) Definitions, characteristics and reflexes, stages</p> <p>b) Development tasks of Infancy</p> <p>c) Adjustment in infancy</p> <p>Factors affecting development in infancy.</p> <p>Physical growth and development, mother development, cognitive development, language development, social development, development of different senses, sensory and perpetual development</p>	<b>10 Hrs</b>

**Text Books:**

1. Prof. Priyanvada Lathakar “Matrukala ,Balvikas v Balshikshan” Vidya book publishers Aurangabad.2014.
2. Dr Mullik Pramila “ A text book of home science” Kalyani publishers, New Delhi. 1992.
3. Elizabeth and Hurlock “ child development” Mc grow hill Kogausha Ltd. 1988.

**Reference Books:**

1. Cole M.and Hole S. “ Development of child” New York Scientific American books 1998.
2. Dr Gaikwad Jyoti “Balwikas shastra” Shri Mangal Publisher Aurangabad,2018
3. Date and Akhani” child Development” Kitab Mahal 2003.

**DSC-2 : Title of Paper practicals BASED ON DSC 1**

Total Credits : 02

Total Contact Hours : 60

Hrs Maximum Marks : 50

**Learning Objectives of the Course: the course will make students understand.**

1 student will be able to understand reproductive system and birth process by visiting hospital

**Course Outcomes ( COs) :**

After completion of the course, students will be able to learn -

1. Student can enrich the knowledge about Human Development through different communication skills.

ModuleNo.	Topics / actual contents of the syllabus	Contact Hours
I	<b>Prepare Chart / Poster / Album / Folder/ Scrap Book on (Any Four)</b> a) Stages of Development a) Male & Female Reproductive System b) Phases of Menstruation (Follicular phase, Ovulation and Luteal Phase) b) Fertilization a) Hereditary endowment b) Process of Conception a) Accepting Parenthood Healthy parenting tips	<b>20 Hrs</b>

<b>II</b>	<b>Organize Group Discussion / Student Seminar on Factors Affecting Growth and Development (any 2)</b> a) Heredity and Environment b) Maturity and Learning c) Nutrition and Exercise d) Endocrine Glands	<b>20 Hrs</b>
	e) Physical and Mental Well-being f) Gender & Education Family Culture and Social Status	
<b>III</b>	<b>Visit to Hospital of Gynecology and prepare a report on In Vitro Fertilization (IVF)</b> <b>OR</b> Case Study of a girl about Knowledge, Awareness and Experiences regarding Menstruation. <b>Or</b> Case study of pregnant /lactating women Visit to pediatric wards having modern medical facilities	<b>20 Hrs</b>

***Text Books:***

1. Prof. Priyanvada Lathakar "Matrukala ,Balvikas v Balshikshan" Vidya book publishers Aurangabad.2014.
2. Dr Mullik Pramila " A text book of home science" Kalyani publishers, New Delhi. 1992.
3. Elizabeth and Hurlock " child development" Mc grow hill Kogausha Ltd. 1988.

***Reference Books:***

1. Cole M.and Hole S. " Development of child" New York Scientific American books 1998.
2. Dr Gaikwad Jyoti "Balwikas shastra" Shri Mangal Publisher Aurangabad,2018.
3. Date and Akhani" child Development" Kitab Mahal 2003.

**DSC-1 : HOUSE KEEPING**

Total Credits : 02

Total Contact Hours : 30 Hrs Maximum Marks : 50

**Learning Objectives of the Course: the course will make students understand.**

- 1. Concept of house keeping**
- 2. Role or responsibilities of personal in housekeeping.**
- 3. Pest control**

**Laundry procedure**

**Course Outcomes ( COs ) :**

After completion of the course, students will be able to learn –

1. Learn importance of house keeping
- 2 Learn the role and responsibilities of staff
- 3 Understand laundrying and its procedures

ModuleNo.	Topics / actual contents of the syllabus	Contact Hours
<b>I</b>	Chapter-1 Role of housekeeping in hospitality industry <b>Housekeeping</b> Department Chapter- 2 Planning, organization & communication of Housekeeping activities	<b>10 Hrs</b>
<b>II</b>	<b>Cleaning Activity and Pest Control</b> Chapter-3 Cleaning agents, cleaning equipment- selection, care and maintenance, cleaning techniques- Daily, weekly, yearly-procedure for cleaning, Types of common pests and effective methods to control	<b>10 Hrs</b>
<b>III</b>	Chapter- 4 Laundry – Types, Laundry procedure: Collection, sorting & stain removal & Prepare washing, extractions & drying, ironing & folding, inspection, packaging, storage delivery, laundry supplies and materials: Water, Soaps, Detergents, Bleaches, Laundry blues,• Stiffening agents & Iron	<b>10 Hrs</b>

**Reference Books:**

- 1 Asler," Management of Hospitality Operations," Bobbs Merrill, London.1970.
- 2 Andrew Sudhir "Hotel Housekeeping- training manual." Tata McGraw-Hill Publishing Co. Ltd., New Delhi. 1985
- 3 Charavarti, B.K.: "A technical guide to Hotel Operation," Metropolitan Book Co. Pvt. Ltd. New Delhi.
- 4 David, M.Allen: "Accommodation and cleaning service," Vol. 1• & 2. Hutchinson Publishing Group 17-21 Conway Street, London.

<b>DSC-2 : Title of Paper practicals based on DSC 1</b>		
Total Credits : 02	Total Contact Hours : 60 Hrs	Maximum Marks : 50
<b>Learning Objectives of the Course: the course will make students understand.</b>  1 various cleaning agents available in the market 2 common household pest control methods 3 various stain removal techniques of cloths		
<b>Course Outcomes ( COs ) :</b> After completion of the course, students will be able to learn –  1 Most common cleaning agents used in house. 2 Household pest control techniques 3 Stain removal techniques.		
ModuleNo.	Topics / actual contents of the syllabus	Contact Hours
I	Survey of cleaning agents available in the market and study the contents and effectiveness	20 Hrs

<b>II</b>	Survey of household common pest control methods used in house and compare with commercial pest control methods	<b>20 Hrs</b>
<b>III</b>	Stain removal of clothing by various techniques (all types of stains)	<b>20 Hrs</b>

***Reference Books:***

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- 1 Asler, "Management of Hospitality Operations," Bobbs Merrill, London. 1970.
  - 2 Andrew Sudhir "Hotel Housekeeping- training manual." Tata McGraw-Hill Publishing Co. Ltd., New Delhi. 1985
  - 3 Charavarti, B.K.: "A technical guide to Hotel Operation," Metropolitan Book Co. Pvt. Ltd. New Delhi.
  - 4 David, M.Allen: "Accommodation and cleaning service," Vol. 1• & 2. Hutchinson Publishing Group 17-21 Conway Street, London.

### SEC-1 A : BASICS OF DESIGN

Total Credits : 01  
: 50

Total Contact Hours :15 Hrs Maximum Marks

#### Learning Objectives of the Course: the course will make students understand.

- ~~1 Students get knowledge about principles of design.~~
- 2 Dimensions and classification of color and color theory

#### Course Outcomes ( COs ) :

After completion of the course, students will be able to learn ples of design

- 1 Elements and principles of design
- 2 Principles of color theory
- 1 Understand design organization for optimum comfort functionalism.

ModuleNo.	Topics / actual contents of the syllabus	Contact Hours
<b>I</b>	Chapter-1 Elements of design: 1.Line, 2.Shape 3. Form 4. Color 5. Texture	<b>5 Hrs</b>
<b>II</b>	Chapter 2 Principles of design: 1.Balance 2.Harmony 3.Contrast 4.Rhythm	<b>5 Hrs</b>

	5.Proportion	
<b>III</b>	Chapter-3 Color Theory 1.Dimension of color- Hue, value, Intensity 2. Classification of color-Primary, Secondary, Tertiary 3.Colour Wheel- Warm and Cool colors	<b>5 Hrs</b>

**Reference Books:**

1. Varghese MA, NN. Ogale and K. Srinivasan, “ Home Management for standard XI,” Wiley Eastern 1989
2. Soundararaj, S.” Household Arts”1975
3. Bhatt P. and S. Goenka “Foundation of Art and Design.” The Lakhani Book Depot, Sunder Bhavan, Mumbai.1999.
4. Goldstein H. And V.Goldstein: “Art in everyday life” 4 edition The Mac Millan co. Joshi C. and S Phadke Art of Table Setting Dept of FRM S.V.T. College of Home Science, Mumbai1958.

## SEC1B : JAM ,JELLY AND SQUASH PREPARATION

Total Credits : 01  
: 50

Total Contact Hours : 15 Hrs Maximum Marks

**Learning Objectives of the Course: the course will make students understand.**

- 1 The characteristics and material required for jam, jelly and squash preparation.
- 2 Quality testing of jam, jelly and squash preparation

**Course Outcomes ( COs ) :**

After completion of the course, students will be able to learn –

- 1 About the methods preparation of jam jelly and squash from various fruits

ModuleNo.	Topics / actual contents of the syllabus	Contact Hours
<b>I</b>	Chapter-1 Preparation of Jam a) Definition, characteristics, and standards of jam b) Raw material and its quality c) Procedure of jam making quality testing and preservation Interrelationship of Foods; nutrition, diet and health	<b>5 Hrs</b>
<b>II</b>	Chapter- 2 Preparation of Jelly a) Definition, characteristics, and standards of jelly b) Raw material and its quality Procedure of jelly making quality testing and preservation	<b>5 Hrs</b>
<b>III</b>	Chapter-3 Preparation of Squashes a) Definition, characteristics, and standards of squash b) Raw material and its quality. Procedure of squash making and its preservation	<b>5 Hrs</b>

***Reference Books:***

- 1) Preservation of fruits & Vegetables by Giridharilal, Sidhappa and Tondon, ICAR, Publication, New Delhi.
  - 2) Food Processing and Preservation- Subbulaksmi G., and Udipi S.
  - 3) Hand book of Analysis of Fruits & Vegetable products- Ranganna, S., Tata McGraw Hills Pub. Co., New Delhi.
  - 4) Food Processing and Preservation- Subbulaksmi G., and Udipi S.
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SEC-2 : Title of Paper practicals based on SEC 1A

Total Credits : 01  
Maximum Marks : 50

Total Contact Hours : 30 Hrs

**Learning Objectives of the Course: the course will make students understand.**

- 1 Students will get knowledge about developing design by use of principle.
- 2 Knowledge about classification of color schemes

**Course Outcomes ( COs ) :**

After completion of the course, students will be able to learn –

- 1 Students can apply the elements of design to create new designs.
- 2 Implement the concept of design for interior design.
- 3 Able to evaluate design for aesthetic and ergonomic feasibility

ModuleNo.	Topics / actual contents of the syllabus	Contact Hours
I	Chapter-1 Study of elements of Art	10 Hrs
II	Chapter- 2 Developing designs through use of each principle of design.	10 Hrs
III	Chapter-3 Colour Schemes 1. Classification of colour and colour wheel 2. Different Types of Colour Schemes	10 Hrs

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**Reference Books:**

1. Varghese MA, NN. Ogale and K. Srinivasan, " Home Management for standard XI," Wiley Eastern 1989
2. Soundararaj, S." Household Arts"1975
3. Bhatt P. and S. Goenka "Foundation of Art and Design." The Lakhani Book Depot, Sunder Bhavan, Mumbai.1999.
4. Goldstein H. And V.Goldstein: "Art in everyday life" 4 edition The Mac Millan co. Joshi C. and S Phadke Art of Table Setting Dept of FRM S.V.T. College of Home Science, Mumbai1958.

**SEC 2 : Title of Paper practicals based on SEC 1 B**

Total Credits : 01

Total Contact Hours : 30 Hrs

Maximum Marks : 50

**Learning Objectives of the Course: the course will make students understand.**

- 1 Knowledge about preparation of jam jelly and squash from various fruits

**Course Outcomes ( COs) :**

After completion of the course, students will be able to learn –

- 1 Skills of preparation of jam jelly and squash from various fruits
- 2 Students can start small scale unit of fruit processing as entrepreneurship.

ModuleNo.	Topics / actual contents of the syllabus	Contact Hours
I	Preparation of guava, apple, straw berry, and mixed fruit jam	10 Hrs
II	Preparation of jelly from guava, apple, pineapple, and mixed fruits	10 Hrs
III	Preparation of pineapple mango, Orange, lime strawberry and mixed fruit squash	10 Hrs

**Reference Books:**

Preservation of fruits & Vegetables by Giridharilal, Sidhappa and Tondon, ICAR, Publication, New Delhi.

1. Food Processing and Preservation- Subbulaksmi G., and Udipi S.
2. Hand book of Analysis of Fruits & Vegetable products- Ranganna, S., Tata McGraw Hills Pub. Co., New Delhi.
3. Food Processing and Preservation- Subbulaksmi G., and Udipi S.

**This course will be available for the students from other faculty**

<b>GE/OE-1 : Title of Paper PRINCIPLES OF FOOD PROCESSING</b>		
Total Credits : 02 : 50		Total Contact Hours : 30 Hrs Maximum Marks
<b>Learning Objectives of the Course: the course will make students understand.</b>		
<ol style="list-style-type: none"> <li>1. Concepts of food preservation</li> <li>2. Principles of food preservation</li> <li>3. Various food preservation techniques</li> </ol> <p><b>Course Outcomes ( COs) :</b></p> <p>After completion of the course, students will be able to learn –</p> <ol style="list-style-type: none"> <li>1 , Processing methods</li> <li>2 Methods of food preservation</li> <li>3 Food preservatives and additives.</li> </ol>		
ModuleNo.	Topics / actual contents of the syllabus	Contact Hours
<b>I</b>	<p>Chapter-1 Concept of food spoilage and processing.</p> <ol style="list-style-type: none"> <li>a) Introduction to food micro-organisms, their classification, growth curve, contamination</li> <li>b) Spoilage of food, causes and factors affecting food spoilage.</li> <li>c) Food processing: objectives Interrelationship of Foods; nutrition, diet, and health</li> </ol> <p>Chapter- 2 Concept of food preservation.</p> <ol style="list-style-type: none"> <li>a) Importance and scope of food preservation</li> <li>Basic principles of various methods of food preservation</li> </ol>	<b>10 Hrs</b>

<p style="text-align: center;"><b>II</b></p>	<p>Chapter-3 Concept of different food processes.</p> <p>a) Food preservation by salt and sugar</p> <p>b) Food preservation by use of low temperature</p> <p>c) Principle, equipment and effect on quality (Chilling, cold storage, freezing etc.)</p> <p>Chapter-4 Concept of high temperature processing.</p>	<p style="text-align: center;"><b>10 Hrs</b></p>
	<p>a) Food preservation by use of high temperature (thermal processing) Principle and equipment: Canning, Blanching, Pasteurization, Sterilization, Evaporation etc., Food preservation by drying, Dehydration and Concentration</p>	
<p style="text-align: center;"><b>III</b></p>	<p>Chapter-5</p> <p>a) Preservation by Radiation</p> <p>b) Chemicals and Preservatives: Definition, Methods, Effect on Microorganisms, Effects on Quality of Foods.</p> <p>Preservation of food by fermentation- Definition, Advantages, Disadvantages, Types, Equipment.</p> <p>Chapter-6 Recent methods in food preservation</p> <p>a) Pulsed electric field processing, Microwave heating, High pressure processing.</p> <p>Processing using ultrasound, Dielectric and Infrared heating</p>	<p style="text-align: center;"><b>10 Hrs</b></p>
<p><b>Text Books:</b></p> <ol style="list-style-type: none"> <li>Giridharilal, Sidhappa and Tondon ,ICAR publications New Delhi 2002.</li> <li>Swami R Mudambi and M.V.Rajgopal “fundamentals of foods and nutrition” New age international (p)Ltd publishers New Delhi.2001.</li> </ol> <p><b>Reference Books:</b></p> <ol style="list-style-type: none"> <li>Desvoir N.W. “Technology of food preservation” AVI publishing house co. Inc London 1998.</li> <li>Rajanna .s “ Handbook of analysis of fruits and vegetable products” Tata Mc growthill publications co. New Delhi.2002</li> </ol>		

## SEMESTER II

### DSC-3: FUNDAMENTALS OF TEXTILE AND EMBROIDORY

Total Credits : 02

Total Contact Hours :30 Hrs

Maximum Marks : 50

#### Learning Objectives of the Course: the course will make students understand.

- 1 The knowledge of textiles fibers and yarns in terms of their production, properties and applications
- 2 In-depth information regarding various fabric construction
- 3 Traditional embroidery of various Indian traditions.

#### Course Outcomes ( Cos) :

After completion of the course, students will be able to learn –

- 1 To describe textile fibers in terms of their properties
- 2 Knowledge about various properties of yarns
- 3 Knowledge about various aspects of clothing and construction.
- 4 Knowledge about traditional Indian embroidery.

ModuleNo.	Topics / actual contents of the syllabus	Contact Hours
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I	<p>Chapter-1 <b>Review of Textile fiber.</b></p> <p>a) Classification of fiber</p> <p>b) Primary &amp; Secondary properties of fiber</p> <p>Chapter- 2 <b>Yarn</b></p> <p>a) Process of spinning</p> <p>b) Classification of yarn</p> <p>c) Twist- 'S' &amp; 'Z'</p>	<b>10 Hrs</b>
II	<p>Chapter-3 <b>Fabric construction</b></p> <p>(a) <del>Methods of fabric construction</del> Weaving, knitting, felting &amp; braiding.</p> <p>(b) Types of looms-Handlooms &amp; Machine loom</p> <p>(c) Types of Weaves-plain, twill, satin &amp; sateen, pile, honeycomb &amp; dooby weave</p>	<b>10 Hrs</b>
III	<p>Chapter 4 traditional embroidery</p> <p>Introduction to embroidery</p> <p>History, cultural and significance of embroidery</p> <p>Traditional embroidery of India: Kashmiri, Manipuri, Kasuri, Chkankari, Fulkari, Kantha, Applique work, Chamba Rumal, Kutch and Kathe wadi</p> <p>Creating embroidery pattern</p>	<b>10 Hrs</b>

**Text Books:**

1. Dr. Ujwala wairagade and Anwita Agrawal “ **vastra Shastra ki sankalpana vah Fashion Designing**” Vidya book publishers Aurangabad 2009
2. Shailaja D. Naik **traditional embroideries of India** South Asia Book publisher 1996
3. Name Authors (as appear on the book), “Title of text Book”, Vol..., Edition, Name of Publisher, Year of Publications

**..Reference Books:**

- 1 Sharon Boggen **creative stitches for contemporary embroidery** C&T publishing 2020
- 2 .J.W. Parchure **fundamentals of Designing for textiles and other end uses** wood head publishing of India private Limited 2009
- 3 .Susheela Dantyagi **fundamentals of textile and their care** Orient Black Swan Private Limited 1996
- 4 .Md.Ibrahim H Mandal **fundamentals of natural fibres and textile** wood head publishing 2021
- 5 .Bernard P. Corbman **Textiles fibre to fabric** MG hill education 1985.

**DSC-4: Title of Paper practical based on DSC 3**

Total Credits : 02  
: 50

Total Contact Hours : 60 Hrs Maximum Marks

**Learning Objectives of the Course: the course will make students understand**

- 1 Physical and chemical properties of fiber**
- 2 Various types of yarns.**
- 3 Traditional stiches of embroidery**

**Course Outcomes ( COs) :**

After completion of the course, students will be able to learn –

- 1 Physical and chemical properties of fiber
- 2 Identify the different types of yarn.
- 3 Traditional stiches of embroidery

ModuleNo.	Topics / actual contents of the syllabus	Contact Hours
<b>I</b>	Chapter-1 Fiber Identification tests –Visual, burning, microscopic and chemical . 1. Cotton 2. Jute 3. Silk 4. Wool 5. Nylon Polyester	<b>20 Hrs</b>
<b>II</b>	Chapter- 2 Yarn Identification – Single, ply, cord, textured, elastic, mono filament, multifilament, and spun yarn. Chapter-3. Thread count and balance ( 5 Fabric)	<b>20 Hrs</b>

<b>III</b>	Chapter 4. creating traditional embroidery pattern Kashmiri, Manipuri, Kasuri, Chkankari, Fulkari, Kantha, Applique work, Chamba Rumal, Kutch and Kathe wadi	<b>20 Hrs</b>
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**Text Books:**

1. Zarakar Zarakar's **stitching and cutting part 1 and 2** Navneet publications Mumbai 1996
2. Shailaja D Naik **traditional embroideries of India** South Asia book publishers 1996

**Reference Books:**

1. Sharon Baggan **creative stitches for contemporary embroidery** C&T publishing 2020
2. J.W. Parchure **fundamentals of Designing for Textiles and other and uses** wood head publishing India Private Limited 2009

<b>DSC-3 : INTRODUCTION TO FRM</b>		
Total Credits : 02		Total Contact Hours : 30 Hrs Maximum Marks : 50
<b>Learning Objectives of the Course: the course will make students understand.</b>		
<ol style="list-style-type: none"> <li>1 Management of family as well as in other sphere of life</li> <li>2 Aware about optimum utilization of their resources to meet the goals</li> <li>3 Aware about family income, savings and investment</li> </ol>		
<b>Course Outcomes ( COs) :</b>		
After completion of the course, students will be able to learn –		
<ol style="list-style-type: none"> <li>1 Improve their work within less time and fatigue.</li> <li>2 Understand how to make house hold budget to each income group.</li> <li>3 Acquire knowledge about the Family Resource Management</li> </ol>		
ModuleNo.	Topics / actual contents of the syllabus	Contact Hours
<b>I</b>	<b>Chapter – 1 Home Management and Family Resource Management.</b> - Home Management – Introduction, Definition, concept and significance of home management	<b>10 Hrs</b>

	<ul style="list-style-type: none"> <li>- Process of Home management – Planning controlling and Evaluation.</li> <li>- Obstacles in improvement of Home Management – Lack of Knowledge, aware about resources, habits of family members.</li> <li>- Scope and classification of family resources – Human and Non Human</li> <li>- Characteristics of family Resources Management – Limited, useful, interrelated, interchangeable, useful in achieving goals</li> </ul> <p>Factors affecting family resources management- standard of living , family income , Socio economic level , family values, occupation, family lifecycle, family size, residence</p>	
<b>II</b>	<p>Chapter – II</p> <p><b>A Family Income &amp; saving &amp; Investment.</b></p> <ul style="list-style-type: none"> <li>e. Family income as concept of Family Income, Definition of Family Income.</li> <li>f. Types of Income <ul style="list-style-type: none"> <li>- Money Income – Regular &amp; Irregular Income</li> <li>- Non money Income – Real Income (Direct &amp; Indirect)</li> </ul> </li> <li>g. Sources of family Income <ul style="list-style-type: none"> <li>Salary, Wages, Pension, Rent, Interest.</li> </ul> </li> <li>h. Family Budget :- Definition, Importance, steps in brief <ul style="list-style-type: none"> <li>Factors affecting – Family size, stage, gods, socio economic status, age, type of income etc.</li> </ul> </li> </ul> <p><b>B Saving and investment.</b></p> <ul style="list-style-type: none"> <li>a) Saving – concept, definition, Types, Importance</li> <li>Investment – concept, Definition, Types</li> </ul>	<b>10 Hrs</b>
<b>III</b>	<p><b>Chapter III – Work Simplification</b></p> <ul style="list-style-type: none"> <li>a) Meaning, Definition &amp; Importance</li> <li>b) Mundel's classes of changes,</li> <li>c) Fatigue and avoidance of fatigue.</li> </ul> <p><b>Chapter IV) Factors Motivating management</b></p> <ul style="list-style-type: none"> <li>d) Values – Meaning, Definition, sources, Importance, types &amp; characteristics.</li> <li>e) Goods – Meaning, Definition &amp; types, factors affecting.</li> <li>f) Standards – Meaning, Definition, classification</li> <li>g) Decision Making <ul style="list-style-type: none"> <li>- Meaning – Definitions of decision making</li> <li>- Importance – Types personal, Group, habitual, Intellectual</li> </ul> </li> </ul>	<b>10 Hrs</b>

	- Steps – defining problem, option seeking, compassion of option. Factors affecting education, age, goods, economic factors, faction, habits, social responsibility etc.	
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**Text Books:**

1. Meera Goyal **introduction to clothing and textile, family Resource Management** sbpd Publication 2020
2. Sushma Gupta, Neenu Garg, Amita Aggarwal and Jaspreet Kaur **text book of family Research Management hygiene and Physiology** Kalyani Publishers 2018

**Reference Books:**

1. Premavathy Seetaraman, Soniya Batra, Preeti Mehra **and introduction to family Resource Management** CBS publisher 2019
2. Mann M.K. **home management in Indian families** Kalyani publisher Ludhiana 2003
3. Varghise M.A. and Octe N.M. **home management** New Age International P Limited New Delhi 1993

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<b>DSC-4 : Title of Paper practicals based on DSC 3</b>	
Total Credits : 02 : 50	Total Contact Hours : 60 Hrs Maximum Marks
<b>Learning Objectives of the Course: the course will make students understand.</b>	
<ol style="list-style-type: none"> <li>1 Acquire knowledge of preparing budget</li> <li>2 Knowledge of work simplification process</li> </ol>	
<b>Course Outcomes ( COs) :</b>	
After completion of the course, students will be able to learn –	
<ol style="list-style-type: none"> <li>1 Develop the ability to improve work within less time and fatigue.</li> <li>2 Able to plan family budget.</li> </ol>	

ModuleNo.	Topics / actual contents of the syllabus	Contact Hours
I	Preparation of time plans for college going students working & non-working women Time plan for alternating light and heavy jobs.	20 Hrs
II	preparation of family budget for low-, middle- and high-income groups	20 Hrs
III	Work-Simplification Techniques applied to different activities - Process chart, operation chart, pathway chart.	20 Hrs

**Text Books:**

- 1 Meera Goyal **introduction to clothing and textile, family Resource Management** sbpd Publication 2020
- 2 Sushma Gupta, Neeru Garg, Amita Aggarwal and Jaspreet Kaur **text book of family Research Management hygiene and Physiology** Kalyani Publishers 2018

**Reference Books:**

- 1 Premavathy Seetaraman , Soniya Batra, Preeti Mehra **and introduction to family Resource Management** CBS publisher 2019
- 2 Mann M.K. **home management in Indian families** Kalyani publisher Ludhiana 2003
- 3 Varghise M.A. and Octe N.M. **home management** New Age International P Limited New Delhi 1993

**DSC-3 : Title of paper EXTENSION EDUCATION AND COMMUNICATION**

Credits : 02 Total Contact Hours

: 30 Hrs Maximum Marks : 50

**Learning Objectives of the Course: the course will make students understand.**

- 1 Concept and history of extension
- 2 Concept function and types of communication
- 3 Elements and their characteristics of communication

**Course Outcomes ( COs ) :**

After completion of the course, students will be able to learn –

- 1 Apply the principles of communication.
- 2 Comprehend the concept of communication.
- 3 Design & evaluate small group communication.

ModuleNo.	Topics / actual contents of the syllabus	Contact Hours
I	Chapter-1 Extension: Concept, goals, philosophy, and history Principles of extension, Methods and Approaches of Extension Stakeholders in development People's participation and social mobilization in development	10 Hrs
II	Chapter- 2 Communication: Concepts, Functions of Communication, Types of Communication - communication transactions; Formal and informal communication; Verbal and Non-verbal Communication, Scope of Communication- Education, training and learning industry, Motivation and Management, Corporate Communication, Management of Organizations	10 Hrs

<b>III</b>	Chapter-3 Elements of Communication and their characteristics Models of Communication • Barriers to Communication Communication for Extension, Concept, nature, and philosophy of Extension • Principles of Extension• Relationship between, Communication, Extension and Development	<b>10 Hrs</b>
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**Text Books:**

- 1 P Dahama ,O P Bhatnagar **education and communication for development** Oxford and IBH publishing co Pvt Limited New Delhi 1985
- 2 S V Tupe **an introduction to extension education** Oxford and lbh publishing Pvt Limited 1999
- 3 Name Authors (as appear on the book), "Title of text Book", Vol..., Edition, Name of Publisher, Year of Publications

**Reference Books:**

- 1 Nikhila Bhagwat , Alka Pant , **Extension and communication** Shanti Prakashan 2014
- 2 .V.K. Dubey ,Dr. Indira Bishnoi , **extension education and communication** New Age International P Ltd Publishers 2018
- 3 .Satwik Sahay Bisarya , **text book of extension education** notion press 2022
- 4 .Dr. Sarthak Chaudhary, Dr. Prabuddha Ray **fundamentals of extension education** Rama publishing house 2020

**DSC-4 : Title of Paper practicals based on DSC 3**

Total Credits : 02

Total Contact Hours : 60 Hrs

Maximum Marks : 50

**Learning Objectives of the Course: the course will make students understand.**

- 1 Formal and informal education**
- 2 Concepts functions of communication**
- 3 Use of educational aids**

**Course Outcomes ( COs) :**

After completion of the course, students will be able to learn –

- 1 Apply the principles of communication.
- 2 Comprehend the concept of communication.
- 3 Design & evaluate small group communication.

ModuleNo.	Topics / actual contents of the syllabus	Contact Hours
<b>I</b>	Preparation of charts, posters, folders, news clippings, scrap books for extension education	<b>20 Hrs</b>
<b>II</b>	Developing skills in planning and conducting small group communication Analysis of development programmes	<b>20 Hrs</b>
<b>III</b>	Evaluate strategies used by development agencies for implementation of development programmes	<b>20 Hrs</b>

**Text Books:**

- 1 P Dahama ,O P Bhatnagar **education and communication for development** Oxford and IBH publishing co Pvt Limited New Delhi 1985
- 2 S V Tupe **an introduction to extension education** Oxford and lbh publishing Pvt Limited 1999

**Reference Books:**

- 1 Nikhila Bhagwat , Alka Pant , **Extension and communication** Shanti Prakashan 2014
- 2 .V.K. Dubey ,Dr. Indira Bishnoi , **extension education and communication** New Age International P Ltd Publishers 2018
- 3 .Satwik Sahay Bisarya , **text book of extension education** notion press 2022
- 4 .Dr. Sarthak Chaudhary, Dr. Prabuddha Ray **fundamentals of extension education** Rama publishing house 2020

**VSC-1A : Title of Paper HAND EMBROIDARY**

Total Credits : 01  
: 50

Total Contact Hours : 15 Hrs Maximum Marks

**Learning Objectives of the Course: the course will make students understand.**

- 1 Knowledge of accessories equipment and rules**
- 2 Selection of proper design**
- 3 Color combination and types of tracing design in hand embroidery.**

**Course Outcomes ( COs ) :**

After completion of the course, students will be able to learn -

- 1 Students will be able to know accessories and equipment used embroidery.
- 2 Rules of embroidery
- 3 They will be able to select the design and color combination for embroidery.

ModuleNo.	Topics / actual contents of the syllabus	Contact Hours
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I	Embroidery, History and introduction and Rules of Embroidery	5 Hrs
II	Equipment used in embroidery –Threads, scissors, needle, tracing wheel, carbon paper.	5 Hrs
III	Selection of Design, color combination. Types of tracing design.	5 Hrs

**Text Books:**

- 1 Patricia Bage **hand embroidery** search press 2021
- 2 .Dhara Shah **the embroidery handbook** page Street publishing 2021

**Reference Books: .**

- 1 **A to Z of embroidery stitches** search press 2014
- 2 .Janice Vaine **hand embroidery stitches at a glance** landauar publishing 2014
- 3 .Charlotle Gerlings **embroidery beginners step by step guide to stitches and techniques** design original 2013
- 4 .Atelier fil **the essential book of embroidery stitches** Tuva publishing 2021

**VSC-1B : Title of Paper INDIAN CULINARY**

Total Credits : 01  
: 50

Total Contact Hours : 15 Hrs Maximum Marks

**Learning Objectives of the Course: the course will make students understand.**

- 1 Knowledge about various culinary methods**
- 2 Definition and history of Indian culinary**
- 3 Gombi culinary**

**Course Outcomes ( COs ) :**

After completion of the course, students will be able to learn –

- 1 The various concepts of Indian culinary, cooking methods
- 2 Awareness about Indian food culture

ModuleNo.	Topics / actual contents of the syllabus	Contact Hours
<b>I</b>	<b>Chapter-1 Cooking Method</b> a) Cooking food by moist heat. - Steaming Boiling, Simmering, Pressure cooking, Poaching, Blanching. b) Cooking food by dry heat. - Grilling, Roasting, Toasting, Baking, Sautéing c) Cooking food using fatty substances. – Shallow Frying & Deep Frying Cooking food using microwaves and Solar cooking	<b>5 Hrs</b>
<b>II</b>	<b>Chapter- 2 Indian cuisine</b> a) Cuisine- Definition and History b) North Indian Cuisines c) West Indian Cuisines	<b>5 Hrs</b>

	d) East Indian Cuisine e) South Indian Cuisine	
<b>III</b>	<b>Chapter-3 Quantity Cookery</b> a) Large scale preparation b) delivery & service of food	<b>5 Hrs</b>
	c) Cost Control Accounting	

***Text Books:***

- 1 Thangam E Philip **modern cookery for teaching and trade** volume 1 Orient longman Ltd Hyderabad 1994
- 2 .Kamalabai Ogale **ruchira part 1** Mehta publishing house Pune 2012.

***Reference books***

- 1 Rocky Mohan **art of Indian cuisine** Lotus Publication 2015
- 2 .Priya Wickramsinghe and Jason Lowe **the food of India** Om books publisher 2002
- 3 .Kumudini Munshi **Bharatiy Vyanjan** vs Publishers Hyderabad 2011
- 4 .Dr.Anshumali Pandey **history of Indian foods** notion press publisher 2021

**VSC-2 : Title of Paper practicals on VSC 1A**

Total Credits : 01  
: 50

Total Contact Hours : 30 Hrs Maximum Marks

**Learning Objectives of the Course: the course will make students understand.**

- 1 To gain knowledge about various embroidery stiches.**

**Course Outcomes ( COs ) :**

After completion of the course, students will be able to learn –

- 1 To develop skills in embroidery
- 2 Entrepreneurship in embroidery

ModuleNo.	Topics / actual contents of the syllabus	Contact Hours
<b>I</b>	To prepare Essential Embroidery Stiches Kashmiri, Sindhi, Satin stiches	<b>10 Hrs</b>
<b>II</b>	To prepare Knot, Feather, Stem Stiches,	<b>10 Hrs</b>
<b>III</b>	Blanket Stitch, Twisted Chain Stitch, Buttonhole Stitch, and other regional and modern stiches.	<b>10 Hrs</b>

**Text Books:**

- 1 Patricia Bage **hand embroidery** search press 2021
- 2 Dhara Shah **the embroidery handbook** page Street publishing 2021

**Reference Books: .**

- 1 **A to Z of embroidery stiches** search press 2014

- 2 .Janice Vaine **hand embroidery stitches at a glance** landauar publishing 2014
- 3 Charlote Gerlings **embroidery beginners step by step guide to stitches and techniques** design original 2013
- 4 Atelier fil **the essential book of embroidery stitches** Tuva publishing 2021

**VSC-2 : Title of Paper practicals on VSC 1B**

Total Credits : 01                      Total Contact Hours : 30 Hrs                      Maximum Marks : 50

**Learning Objectives of the Course: the course will make students understand.**

- 1 **Knowledge of various recipes according to region**
- 2 **Knowledge about variety of foods cooked by using different cooking methods**

**Course Outcomes ( COs) :**

After completion of the course, students will be able to learn –

- 1 Skills of preparation of various regional Indian foods
- 2 Professional knowledge of cookery.

ModuleNo.	Topics / actual contents of the syllabus	Contact Hours
<b>I</b>	<p><b>Chapter- 1 Prepare a recipe according to the region ( any one of each zone )</b></p> <p><b>a) East Indian Cuisine:</b> - Gobi Manchurian (Kolkata) / Pitha (Odisa) / RasMalai , Rasgulla (West Bengal) /Khir (Odisa)</p> <p><b>b) West Indian Cuisine:</b> - Karanji , RagadaPattis , Thalipith , Vada Paw , BatataVada (Maharashtra) .Sabudana khichadi / Shankarpali /Dhokala / Khandvi / Kacchi Dabeli / Khakara / chikki (Gujrat) .</p>	<b>10 Hrs</b>

<b>II</b>	<p><b>Chapter-2 Prepare a recipe according to the region ( any one of each zone )</b></p> <p>a) <b>South Indian Cuisine:</b> - Dosas: paper-thin crepes / Idlis: steamed rice cakes. /Vadas: savoury doughnuts. / Uttapams: pizza-pancake hybrids. / Banana chips: crisps with a twist. / Tamarind Rice / Tomato Rice / Lemon Rice/bisi belle rice</p> <p>b) <b>North Indian Cuisine:</b> - Churma ./ Dal Baati/</p>	<b>10 Hrs</b>
	(Rajasthan), Allu Paratha / Paneer Tikka Chole Bhature (Punjab)./Rajamma rice/Rajamma masala/laccha paratha/ gobi paratha/paneer paratha	
<b>III</b>	<b>Chapter- 3 Preparation of Food According To Any Five Cooking Methods</b>	<b>10 Hrs</b>

**Text Books:**

- 1 Thangam E Philip **modern cookery for teaching and trade** volume 1 Orient longman Ltd Hyderabad 1994
- 2 .Kamalabai Ogale **ruchira part 1** Mehta publishing house Pune 2012.

**Reference books**

- 1 Rocky Mohan **art of Indian cuisine** Lotus Publication 2015
- 2 .Priya Wickramsinghe and Jason Lowe **the food of India** Om books publisher 2002
- 3 .Kumudini Munshi **Bharatiy Vyanjan** vs Publishers Hyderabad 2011
- 4 .Dr.Anshumali Pandey **history of Indian foods** notion press publisher 2021

THIS COURSE WILL BE AVAILABLE FOR THE STUDENTS FROM OTHER FACULTY

**GE/OE-2 : Title of Paper HOME BASED CATERING**

Total Credits : 02  
: 50

Total Contact Hours : 30 Hrs Maximum Marks

**Learning Objectives of the Course: the course will make students understand.**

- 1 About food service and quality food production**
- 2 Hygiene and sanitation**
- 3 Planning of food service unit**

**Course Outcomes ( COs ) :**

After completion of the course, students will be able to learn –

- 1 Students able to get knowledge about food service and its management.
- 2 Students able to prepare and quantity food production
- 3 : Students can set up small home catering unit.

ModuleNo.	Topics / actual contents of the syllabus	Contact Hours
<b>I</b>	<p>CHAPTER 1 Introduction to Food Service</p> <ul style="list-style-type: none"> <li>• Factors contributing to the growth of food service industry</li> <li>• Kinds of food service establishments</li> </ul> <p>CHAPTER 2 Food Production</p> <ul style="list-style-type: none"> <li>• Menu planning: Importance of menu, Factors affecting menu planning, Menu planning for different kinds of food service units.</li> <li>• Food Purchase and Storage</li> <li>• Quantity Food production: Standardization</li> </ul>	<b>10 Hrs</b>

	of recipes, quantity food preparation techniques, recipe adjustments and portion control <ul style="list-style-type: none"> <li>• Hygiene and Sanitation</li> </ul>	
<b>II</b>	CHAPTER 3 Resources <ul style="list-style-type: none"> <li>• Money</li> <li>• Manpower</li> <li>• Time</li> <li>• Facilities and equipment Utilities</li> </ul>	<b>10 Hrs</b>
	CHAPTER 4 Planning of A Food Service Unit	
<b>III</b>	<ul style="list-style-type: none"> <li>• <b>Preliminary Planning</b> Survey of types of units, identifying clientele, menu, operations, and delivery.</li> <li>• <b>Planning the set up:</b> Identifying resources, Developing Project plan Determining investments Project Proposal</li> </ul>	<b>10 Hrs</b>

***Text Books:***

- 1 West B Bessie & Wood Levelle “ Food Service in Institutions” 6<sup>th</sup> Edition Revised By Hargar FV, Shuggart SG, & Palgne Palacio June, Macmillian Publishing Company New York 1988.
- 2 Sethi Mohini “ Institution Food Management” New Age International Publishers 2005

***Reference Books:***

- 1 Knight J B & Kotschevar LH “Quantity Food Production Planning & Management” 3<sup>rd</sup> edition John Wiley & Sons 2000.
- 2 Philip E Thangam “Modern Cookery for teaching and Trade Part I & II” OrientLongmam 2008
- 3 Taneja S and Gupta SL2008 “Entrepreneurship development,” Galgotia Publishing 2001

**Basket 1: List of Major subjects in Science (DSC)**

Students willing to pursue their bachelors in the **Faculty of Science and Technology** shall choose any three subjects (from the following options) as Major 1, Major 2 and Major 3 ( Based on the available options in the respective college)

Semester	Sr No	BOS / Ad hoc Board proposing the course	Title of the Corse
<b>1<sup>st</sup> and 2<sup>nd</sup> Semester</b> <i>(Students shall choose any three subjects (from these options) as Major 1, Major 2 and Major 3 ( Based on the available options in the respective college)</i>	1	BOS in Botany	Botany
	2	BOS in Chemistry	Chemistry
			Analytical Chemistry
			Polymer Chemistry
	3	BOS in Mathematics	Mathematics
	4	BOS in Physics	Physics
			Non-Conventional and Conventional Energy
			Instrumentation Practice
	5	BOS in Zoology	Zoology
	6	BOS in Electronics	Electronics
	7	BOS in Fishery Science	Fishery Science
	8	BOS in Microbiology	Microbiology
	9	Ad Hoc Board in Statistics	Statistics
	10	Ad hoc Board in Industrial Chemistry	Industrial Chemistry
	11	Ad hoc Board in Dairy Science & Technology	Dairy Science & Technology
	12	Ad hoc Board in Biotechnology and Bioinformatics	Biotechnology
			Bioinformatics
	13	Ad hoc Board in Biochemistry	Biochemistry
	14	Ad hoc Board in Home Science	Home Science
15	Ad Hoc Board in Agrochemical Fertilizers, Horticulture, Dry land Agriculture	Agrochemical Fertilizers	
		Horticulture	
16	Ad hoc Board in Forensic Science	Forensic Science	
		Forensic Science & Cyber Security	
17	Ad Hoc Board in Computer Science	Computer Science	
		Computer Application	
		Information Technology	
		Data Science	
18	Ad Hoc Board in Networking and Multimedia	Networking and Multimedia	
19	Ad Hoc Board in Environmental Science	Environmental Science	

	20	BOS in Fishery Science	Fishery Science
	21	Ad hoc Board in Automobile Technology / Workshop Technology / Refrigerator and Air Conditioning	Automobile Technology
			Workshop Technology
			Refrigerator and Air
			Conditioning
	22	Ad hoc Board in Geology	Geology

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