PONDICHERRY UNIVERSITY

SCHOOL OF LIFE SCIENCES

NEP CURRICULUM & SYLLABUS

FOR

B.Sc. (HONORS) HOME SCIENCE
[1 TO 6 SEMESTERS]

AFFILIATED COLLEGES

FROM THE ACADEMIC YEAR
(2023-24 onwards)

PONDICHERRY UNIVERSITY

UG Degree (B.Sc. Honors) with Research in Home Science

NATIONAL EDUCATION POLICY (NEP 2020)

REGULATIONS-2023

INTRODUCTION:

The NEP curriculum is implemented from the Academic Year 2023-24.

1. Major Highlights

Many Departments in Pondicherry University and its affiliated colleges launch Integrated UG (Honors) with lateral entry– exit facility in all the years study.

Age Limit:
As per UGC Norms.

2. SHORT-TITLES AND DEFINITIONS

a) "Credit" One credit is equivalent to 15 hours of teaching (lecture or tutorial) or 30 hours of practical and/or field work or community engagement and service per semester.

b) "**Academic Year**" from June- May (2 semester).

c) "**Semester**" means 15-16 weeks of teaching-learning session of which two weeks shall be set apart for examination and evaluation;

d) "Summer term" is for 8 weeks during summer vacation. Internship/apprenticeship/work based vocational education and training can be carried out during the summer term, especially by students who wish to exit after two semesters or four semesters of study.

e) "**Grade**" means a letter grade assigned to a student in a Course for her/his performance at academic sessions as denoted in symbols of : O(outstanding), A+(Excellent), A(Very good), B+(Good), B(Above average), C(Average), P(Pass) F(Fail)and Ab(Absent) with a numeric value of O=10, A+=9, A=8, B+=7, B=6, C=5 P=4, and F=0, Ab=0

f) "**Semester Grade Point Average (SGPA)**" is computed from the grades as a measure of the students' performance in a given semester.

g) "Cumulative GPA (CGPA)" is the weighted average of all courses the student has taken in a given Programme.

3. Duration of the Programme

Students who exit with a UG certificate or UG diploma are permitted to re-enter within three years and complete the degree programme. Students may be permittedto take a break from the study, they are allowed to re- enter the degree programme within 3 years and complete the programme within the stipulated maximum period of seven years.

4. Eligibility for the UG Programmes

Pass in Higher Secondary Examination or equivalent (10+2) with Biology / Chemistry /Home Science / Home Science (vocational) as one of the subjects of study with a minimum of 50% of marks or equivalent stage of education to Level-4 (Levels in NHEQF).

5. AWARDING OF UG CERTIFICATE, UG DIPLOMA, AND DEGREES

UG Certificate: Students who opt to exit after completion of the first year and have earned a minimum of 42 credits will be awarded a UG certificate if, in addition, they complete work based vocational course/internship of 4 credits during the summer vacation of the first year.

UG Diploma: Students who opt to exit after completion of the second year and have earned a minimum of 84 credits will be awarded the UG diploma if, in addition, they complete wok based vocational course/internship of 4 credits during the summer vacation of the second year.

Three year UG Degree: Students who wish to discontinue after the 3- year UG will be awarded a UG Degree in the Major discipline after successful completion of three years, earning a minimum of 124 credits and satisfying the minimum credit requirements as mentioned in the table below.

Four year UG Degree (Honors): A four-year UG Honors degree in the major discipline will be awarded to those who complete a four-year degree, earning a minimum of 164 credits and have satisfied the credit requirements as mentioned in table below.

Four year UG Degree (Honors with Research): Students who secure a minimum of 7.5 CGPA in the first six semesters and wish to undertake research at the undergraduate level can choose a research stream in the fourth year. They should do a research project or dissertation under the guidance of a faculty member of the University. The research project/dissertation will be in the major discipline. The students who secure a minimum of 164 credits, including 12 credits from a research project, will be awarded UG Degree (Honors with Research).

6. STRUCTURE OF THE UNDERGRADUATE PROGRAMME

Table 1: Breakup of Credits and Courses- Minimum requirement (Integrated Programme)

S. No	Component	3 Year UG	4 Year UG (Honors/research)
1	Major Disciplinary/Interdisciplinary Courses	60 Credits (15 Courses of 4 credits)	80 Credits (20 Courses of 4 credits)
2	Minor Disciplinary/interdisciplinary Courses (Vocational programme included)	24 Credits (6 Courses of 4 Credits)	32 Credits (8 Courses of 4 credits)
3	Multi-Disciplinary Courses	9 Credits (3 courses of 3 credits)	9 Credits (3 courses of 3credits)
4	Ability Enhancement Courses	12 Credits (4 courses of 3 credits)	12 Credits (4 courses of 3credits)
5	Skill Enhancement Course	9 Credits (3 courses of 3 credits)	9 Credits (3courses of 3credits)
6	Value-added courses	8 Credits (4 courses of 2 credits)	8 Credits (4 courses of 2credits)
7	Summer internship	(4credits- Included in Major courses of 60 credits)	(4 credits-Included in Major courses of 80 credits)
7	Community engagement and service	2 Credits (1 course)	2 Credits (1 course)
8	Research Dissertation Project	-	12 Credits
9	Total	124	164

Note: Honors students not undertaking research will do 3 courses for 12credits in lieu of a project.

6.1 STRUCTURE OF THE UNDERGRADUATE PROGRAMME in Home Science UNDER NEP

Sem	Levels of Course in Major/Minor	Focus of Course Structure	Major Discipline	Minor Discipline	Multi-disciplinary Courses (MD)*	Ability Enhancement courses (AEC)*	Skill Enhancement Courses (SEC) *	Value-added courses (VAC)*	Total
I	100-199 *Foundation/ Introductory courses.*	*should equip students to take up advanced courses/ specialized coursework,-to choose disciplinary/ Interdisciplinary course of their interest prospective professional field*	Major 1 (4Cr) (100 level)	Minor 1 (from Stream I / II) (4 Cr) (Vocational) (100 level)	MD-1 (3 Cr) *(Can be chosen from bouquet)* *1.Natural/Physical Sciences* *2.Math/Stati/Comp.Applicatio* *3. Lib.Information and Media.Sciences.* *4.Commerce& Management* *5.Humanities&Social sci*	Eng -1 (2 Cr) *Linguistic /communication Skills/critical reading/ academic writing/cultural intellectual heritage of language /abilities to discuss/ debate*	SEC-1 (3 Cr) *(Practical skills, Hands on, soft skills and so on for employability in the disciplinary/interdisciplinary areas chosen)*	VAC-1 (2cr) Understanding India VAC-2 (2cr) Environmental Science/Edn) - (2cr)	20
II			Major-2 (4Cr) (100 level)	Minor 2 (from Stream I / II) (4 Cr) (Vocational) (100 level)	MD-2 (3cr) *(Can be chosen from above)*	MIL -1 (2cr) *(Can be chosen from above)*	SEC-2 (3cr) *(Practical skills, Hands on, soft skills and so on for employability)*	VAC-3 *(2cr) Health & Well Being / Yoga /sports/fitness* *VAC-4 (2cr) Digital Technologies*	20
Students exiting the programme after securing 40 credits will be awarded UG Certificate in Home Science provided they secure 4 credits in work based vocational courses offered during summerterm or internship / Apprenticeship in addition to 6 credits from skill enhancement courses earned during I & II semester. Summer Internship could be initiated during holidays and continued to the III semester									
III	200-299 *Intermediate levelcourses*	*Prerequisite for advanced level majorcourses*	Major 3 - 4 (8 cr) 200level	Minor 3 (from Stream I / II) (4 Cr) 200 level (Vocational)	MD-3 *(3cr) (Can be chosen from above)*	Eng -2 (2cr) *(Can bechosen from above)/ abilities to discuss/ debate*	SEC- 3 (3cr) *(Can be chosen from above)*		20
IV			Major 5-6 (8 cr) (200 level) Major 7 – 8 (lab) (4 cr)	Minor 4 (from Stream III) (4 Cr) (200&above)		*MIL -2 (2 Cr)* (as above)		*Community Engagement and Service(2cr)*	20

* Students exiting the programme after securing 80 credits will be awarded UG Diploma in Home Science, provided they secure additional 4 credits in work based vocational courses offered during summer term or internship / Apprenticeship *in addition to 9 credits from skill enhancement courses earned during I, II & III semester.* Summer Internship could be initiated during holidays and continued to the V semester.

*Courses Under MD, AEC, & VAC will be finalized by the respective institution. For SEC, courses offered by MOOCs/SWAYAM courses/Any other approved list of 3rd party certificate courses sponsored by Industry, GOI at special apprenticeship courses designed by any polytechnic college, Govt. MSME Training centres,

V	300-399: Higher Level courses	*Disciplinary/ interdisciplinary course study for the award of degree*	Major 9-11 (8 cr) (300 level) Major 12-13 (lab) (4cr)	Minor 5 (from Stream III) (4 Cr) (200&above)			Internship (4cr) (Major 11) of 45 days		20
VI			Major 14-16 (12 cr) 300 Level Major 17-18 (lab) (4 cr)	Minor 6 (from Stream III) (4 Cr) (200&above))					20
❖ Students who want to undertake 3-year UG programme will be awarded UG Degree in Home Science upon securing 120 credits. ❖ A minimum of 12 credits will be allotted to the minor stream relating to vocational education and training spreading through II, III, IV & V semesters. Internship for a period of 45 days is included as the Major 11 which has to undergo in between IV and V semester ❖									
VII	400-499: Advanced Courses	*Lectures with seminars/term papers/ /labs/hands on, internships, Research/projects and so on.(Research methodology/Statistic scourse for UG with Research)*	Major 19 Major 20 Major 21 (12 cr) (400 level)	Minor 7(from Stream I / II) Minor 8 (from Stream III) (8 Cr) (300 & above					20
VIII			Major 22 Major 23 (8 cr) (400level)			Research Project/Dissertation (12 Cr)			20
❖ Students will be awarded UG Degree (Honours) with Research in Home Science provided they secure 160 credits ❖ Honours students not undertaking research will do 3 courses for 12 credits in lieu of a research project / Dissertation. Students of UG honours with research will choose a research component in the IV year and complete research methodology courses and advanced courses in major/minor.									

6.2. Description of courses

(i) Major Discipline (60 to 80 Credits)

Major discipline is the discipline or subject of main focus and the degree will be awarded in that discipline. Students should secure the prescribed number of credits (not less than 50% of the total credits) through core courses in the major discipline. The major discipline would provide the opportunity for a student to pursue in-depth study of discipline. A student may choose to change the major discipline within the broad discipline at the end of the second semester provided all the prerequisites of the respective degree programme are fulfilled.

(ii) Minor Discipline (24 to 32 credits)

Minor discipline helps a student to gain a broader understanding beyond the major discipline.For example, if a student pursuing Food Technology as major, then minor courses may be from Food Technology/ Food Nutrition/ other department of life sciences for which a pool of courses will be offered by the parent department/ other departments of life sciences.

24 credits of minor courses in the 3-year programme can be Disciplinary or Interdisciplinary courses or a mix of both. 50%of the total credits from minors must be secured in the relevant subject/discipline and another 50% of the total credits can be from any disciplineof students' choice.

12 credits (50%) of the Minor (Disciplinary / Interdisciplinary) in the 3-year programme should be related to vocational education/training courses.

Type of Minor	**Credits**
Disciplinary/Interdisciplinary	12 cr
Disciplinary/Interdisciplinary- vocational	12 cr

(iii) Multidisciplinary courses (MD): 9 credits

All UG students are required to undergo 3 introductory-level courses relating to any of the broaddisciplines given below. These courses are designed and developed by every department for the benefit of other discipline students and are pooled by SAMS under 5 baskets for students to choose any 3 courses from 3 broader areas (one each from any three broad areas from below) from the basket. Students are not allowed to choose or repeat courses already undergone at the higher secondary level (12^{th} class) under this category.

a) ***Natural and Physical Sciences:*** Students can choose basic courses from disciplines such as Natural Science, for example, Biology, Botany, Zoology, Biotechnology, Biochemistry,Chemistry, Physics, Biophysics, Astronomy and Astrophysics, Earth and Environmental Sciences, and other related subjects.

b) ***Mathematics, Statistics, and Computer Applications:*** Courses under this category will facilitate the students to use and apply tools and techniques in their major and minor disciplines. The course may include training in programming software like Python among others and applications software like STATA, SPSS, Tally and similar others. Basic courses under this category will be helpful for science and social science in data analysis and the application of quantitative tools.

c) ***Library, Information, and Media Sciences*****:** Courses from this category will help the students to understand the recent developments in information and media science (journalism, mass media, and communication)

d) ***Commerce and Management:*** Courses include business management, accountancy, finance, financial institutions, fintech and other related subjects.

e) ***Humanities and Social Sciences:*** The courses relating to Social Sciences, for example, Anthropology, Communication and Media, Economics, History, Linguistics, Political Science, Psychology, Social Work, Sociology and other related subjects will enable students to understandthe individuals and their social behavior, society, and nation. Students be introduced to survey methodology and available large-scale databases for India. The list of Courses that can include interdisciplinary subjects such as Cognitive Science, Environmental Science, Gender Studies, Global Environment & Health, International Relations, Political Economy and Development, Sustainable Development, Women's and Gender Studies and similar subjects. will be useful to understand society.

(iv) Ability Enhancement Courses (AEC): 12 credits

Modern Indian Language (MIL) & English language focused on language and communication skills:

Students are required to achieve competency in a Modern Indian Language (MIL) and in theEnglish language with special emphasis on language and communication skills. The courses aim at enabling the students to acquire and demonstrate the core linguistic skills, including criticalreading and expository and academic writing skills, that help students articulate theirarguments and present their thinking clearly and coherently and acquaint with the cultural and intellectual heritage of languages.

(v) **Skill Enhancement Courses (SEC): 9 credits**

These courses are aimed at imparting practical skills, hands-on training, soft skills, and other skills to enhance the employability of students. The institution may design courses as per the students' needs and available institutional resources. Skill based courses could be related to disciplinary/interdisciplinary minors and vocational education programmes chosen/offered.

(vi) ***Value-Added Courses (VAC) Common to All UG Students: 8 credits***

a) ***Understanding India:*** This course aims at enabling the students to acquire and demonstrate the knowledge and understanding of contemporary India with its historical perspective, the basic framework of the goals and policies of national development, and the constitutional obligations with special emphasis on constitutional values and fundamental rights and duties. The course would also focus on developing an understanding among student- teachers of the Indian knowledge systems, the Indian education system, and the roles and obligations of teachers to the nation in general and to the school/community/society. The course will attempt to deepen knowledge about and understanding of India's freedom struggle and of the values and ideals that it represented to develop an appreciation of the contributions made by people of all sections and regions of thecountry, and help learners understand and cherish the values enshrined in the Indian Constitution and to prepare them for their roles and responsibilities as effective citizens of a democratic society.

b) ***Environmental Studies:*** This course seeks to equip students with the ability to apply the acquired knowledge, skills, attitudes, and values required to take appropriate actions for mitigating the effects of environmental degradation, climate change, and pollution, effective waste management, conservation of biological diversity, management of biological resources, forest and wildlife

conservation, and sustainable development and living. The course will also deepen the knowledge and understanding of India's environment in its totality, its interactive processes, and its effects on the future quality of people's lives.

c) ***Digital Technologies***: Courses in cutting- edge areas that are fast gaining prominences, such as Artificial Intelligence (AI), 3-D machining, big data analysis, machine learning, drone technologies, and Deep learning with important applications to health, environment, and sustainable living that will be woven into undergraduate educationfor enhancing the employability of the youth.

d) ***Health & Wellness, Yoga Education, Sports, and Fitness:*** Course components relating to health and wellness seek to promote an optimal state of physical, emotional,intellectual, social, spiritual, and environmental well-being of a person. Sports and fitness activities will be organized outside the regular institutional working hours. Yoga education would focus on preparing the students physically and mentally for the integration of their physical, mental, and spiritual faculties, and equipping them with basic knowledge about one's personality, maintaining self-discipline and self-control, to learn to handle oneself well in all life situations.

vii. Vocational Training/Education: 12 Credits

These courses are meant to provide the students with adequate knowledge and skills for employment and entrepreneurship. Departments are expected to incorporate the requirements of related industries while designing these courses to groom the students to take up gainful employment or becoming entrepreneurs. Vocational education courses designed by each department should relate the skills provided with the content of general education in order to ready the students for work at each exit point of the programme. A minimum of 12 credits will be allotted to the minor stream relating to vocational education and training.

Viii Summer Internship: 4Credits

- The Home Science Department has network with R & D Labs/PSUs/Govt. Departments/Academic Institutions for facilitating student internships.
- The transformed education should improve employability of students by providing internships/skill development.
- Opportunities for Internships with local industry, businesses, artists and craft persons to improve the employability of students.
- All students will undergo internships / Apprenticeships in a firm, industry, or

organization or Training in labs with faculty and researchers in their own or other HEIs/research institutions during the summer term. Students will be provided with opportunities for internships to actively engage with the practical side of their learning and, as a by-product, further improve their employability.

ix. Community Engagement and Service: 2 Credits

The curricular component of 'community engagement and service' seeks to expose students to the socio-economic issues in society so that the theoretical learnings can be supplemented by actual life experiences to generate solutions to real-life problems. This can be part of summer term activity or part of a major or minor course depending upon the major discipline. Community Engagement shall be conducted for a minimum of 2 weeks.

x. Research Project / Dissertation: 12 Credits

Students choosing a 4-Year Bachelor's degree (Honors with Research) are required to take up research projects under the guidance of a faculty member. The students are expected to complete the Research Project in the eighth semester.

xi. Audit courses: 0 credits

Audit courses offered do not carry any credits. Evaluation will be based on continuous assessment. Students may be given a pass or fail(P/F) based on the assessment that may consist of class tests, homework assignments, and/or any other innovative assessment methodology suitable to the expected learning outcome, as determined by the faculty in charge of the course of study.

6.3. Levels of the Courses

Courses can be coded based on the academic rigor. The first four letters of the course code indicate the department/Centre, followed by the academic rigor level code in digits (For e.g., Engl 201). The coding structure follows:

0-99: Pre-requisite courses required to undertake an introductory course which will be a pass or fail course with no credits. It will replace the existing informal way of offering bridge courses that are conducted in some of the colleges/ universities.

100-199: Foundation or introductory courses that are intended for students to gain an understanding and basic knowledge about the subjects and help decide the subject or discipline of interest. These courses generally would focus on foundational theories, concepts, perspectives, principles, methods, and procedures of critical thinking in order to provide a broad basis for taking up more advanced courses.

200-299: Intermediate-level courses including subject-specific courses intended to meet the credit requirements for minor or major areas of learning. These courses can be part of a major and can be pre-requisite courses for advanced-level major courses.

300-399: Higher-level Courses which are required for majoring in a disciplinary/interdisciplinary area of study for the award of a degree.

400-499: Advanced Courses which would include lecture courses with practicum, seminar-based course, term papers, research methodology, advanced laboratory experiments/software training, research projects, hands-on-training, internship/apprenticeship projects at the undergraduate level or First year post-graduate theoretical and practical courses.

6.4 Credit-hours for different types of courses

A three-credit lecture course in a semester means three one-hour lectures per week with each one-hour lecture counted as one credit. One credit for tutorial work means one hour of engagement per week.

A one-credit course in practicum or lab work, community engagement and services, and fieldwork in a semester mean two- hour engagement per week. In a semester of 15 weeks duration, a one-credit practicum in a course is equivalent to 30 hours of engagement. A one- credit of Seminar or Internship or Studio activities or Field practice/projects or Community

engagement and service means two-hour engagements per week. Accordingly, in a semester of 15 weeks duration, one credit in these courses is equivalent to 30 hours of engagement.

Lecture courses: Courses involving lectures relating to a field or discipline by an expert or qualified personnel in a field of learning, work/vocation or professional practice

Tutorial: Courses involving problem solving and discussions relating to a field or discipline.

Seminar: A course requiring students to participate in structured discussion/conversation or debate focused on assigned tasks/readings, current or historical events, or shared experiences guided or led by an expert or qualified personnel in a field of learning, work/vocation or professional practice.

Internship: A course requiring students to participate in professional employment• related activity or work experience, or cooperative education activity with an entity external to the education institution, normally under the supervision of an employee

of the given external entity.

Laboratory work/activity: A course requiring students to discover/practice application of a scientific or technical principles/theories. The course may require scientific, or research focused experiential work where students observe, test, conduct experiment(s) or practice application of principles/theories relating to field of learning, work/vocation or professional practice.

Studio activities: Studio activities involve engagement of students in creative or artistic activities. Studio-based activities involve visual- or aesthetic-focused experiential work.

Workshop-based activities: Courses involving workshop- based activities requiring engagement of students in hands- on activities related to work/vocation or professional practice.

Field practice/projects: Courses requiring students to participate in field-based learning/project generally under the supervision of an employee of the given external entity.

7. Continuous Assessment and End Semester Examination marks and evaluation of skill based/vocational courses/ Internships and other hands on/field-based courses

- All theory courses in a UG programme shall carry a continuous assessment component of 25 marks and end semester assessment component of 75 marks.
- In case of skill-based courses, vocational education courses, internships, practical, lab/field/project works, community service and related skill-based activities, the evaluation pattern may be decided by the Programme Committee. The evaluation methods will be based on the learning outcomes planned for such courses following the NEP guidelines of Pondicherry University.

Continuous Assessment Component (Sessional)

- Evaluation will be based on continuous assessment carried out through activities spread over a complete semester based on the learning outcomes listed. Sessional work consists of class tests, at least one mid-semester examination, homework assignments, and any other innovative assessment methodology as determined by the faculty in charge of the course of study. Progress towards achievement of learning outcomes shall be assessed using the following: time-constrained examinations; closed-book and open-book tests; problem-based

assignments; practical assignments; laboratory reports; observation of practical skills; individual project reports (case-study reports); team project reports; oral presentations, including seminar presentation; viva voce interviews; computerized adaptive assessments, examination on demand, modular certifications and other suitable assessments methods.

 All Credit courses are evaluated for 100 marks. Internal Assessment component is for 25 marks and the End Semester University exam is for 75 marks. In case of Practicals, Project work etc., it is 50:50 marks for Internal and End-Semester Exams. Total Marks from continuous assessments may be up to 40% of the total.

Break up of Internal Assessment marks:

Total Internal Assessment mark for a theory subject is 25 marks. The breakup is:

a)	Mid Semester Exam (one) - 20 Marks
b)	Percentage of Attendance - 5 Marks
Total - 25 Marks	

Marks for Attendance is as follows:

Below 70%	0
70% - 80%	1
80% - 85%	2
85% - 90%	3
90% - 95%	4
95% - 100%	5

Internal Test Scheme:

Principal of the College schedules the Mid-Semester Exam for all courses during 8/9th week of start of classes. All faculty members are expected to conduct this Mid-Semester exam for 1.30 hr duration and evaluate, upload the marks to Controller of Examinations of University. Colleges are also requested to preserve the answer books of Mid-Semester exams until declaration of results by the University.

Internal Assessment marks for Practicals/Project work/ Internships subjects:

Faculty member in-charge of Lab practical shall evaluate the practical subjects for 50 marks. The break up is as follows:

a) Observation note/Demo note/ Work dairy	20
b) Practical Record/Internship Report	30
Total	**50**

8. End- Semester Examination and Evaluation

8.1. End semester examinations shall be conducted for all courses offered in the department after ensuring that the required number of classes and related activities are completed. The duration of the end semester examination may be 3 hours.

8.2. A schedule of End semester examinations will be announced by the department about 15 days ahead of the conduct of examinations.

8.3. The responsibility of question paper setting, invigilation and valuation of answer papers lie with the course teachers. However, all assessments shall be conducted under the uniform practices of the department approved in the programme committee.

8.4. However, the departments/faculty members are free to decide the components of continuous assessment and the method of assessment based on the nature of the course and are expected to communicate these to students and respective HODs at the beginning of the semester.

8.5. Mid semester /end semester examinations schedule notified by the University in the academic calendar shall be uniformly followed.

9. Minimum Marks for Pass

A student shall be declared to have passed the course only if she/he gets,

9.1. A minimum of 40% marks in end semester exam and

9.2. A minimum of 50% marks in aggregate when continuous assessment and end semester examination marks are put together.

10. Supplementary examination

10.1. A student who gets F grade in a course shall be permitted to register for the supplementary examination in the following semester or in the subsequent semesters.

10.2. A student who gets F grade in a course shall be given an option either to retain the previously awarded continuous assessment mark or to improve it, and the higher mark out of these two options will be considered for the supplementary examination.

10.3. A student who gets Ab grade in a course/practicum/vocational course/internship/practicumor any other hands-on skill related course is mandated to repeat the course and undergo all the stages of assessment in subsequent semesters.

11. Attendance Requirement

No student who has less than 70% attendance in any course shall be permitted to participate in end semester examination and she/he shall be given 'Ab' grade, - failure due to lack of attendance. she/he shall be required to repeat that course as and when it is offered.

12.LETTER GRADES AND GRADE POINTS

Performance of students in each paper will be expressed as marks as well as Letter Grades.

Letter Grade	**Grade Point**
O (outstanding)	10
A+ (Excellent)	9
A (Very good)	8
B+ (Good)	7
B (Above average)	6
C (Average)	5
P (Pass)	4
F (Fail)	0
Ab (Absent)	0

As per NEP Regulations, the passing minimum is 50% marks (IA + End semester put together) However, Pondicherry University considers 40% marks as pass during first 3 years of study and students who secured less than 50 will be awarded 'P' (Pass Grade).

In case of fractions the marks shall be rounded off to nearest integer. The class interval K willbe the formula given below: K = (X-50)/6, where X is the highest mark secured.

According to K value, one of the following grading scheme will be followed.

If K ≥ 5, then the grades shall be awarded as given in Table II.

Table II		
Range of Marks in %	**GradePoints for**	**Letter Grade Points for**
X to (X-K)+1	O	10
(X-K) to (X-2K)+1	A+	9
(X-2K) to (X-3K)+1	A	8
(X-3K) to (X-4K)+1	B+	7
(X-4K) to (X-5K)+1	B	6
(X-5K) to 50	C	5
40 – 49	P	4
Below 40	F	0
Absent (Lack of Attendance)	Ab	0

If K<5, then the grades shall be awarded as given in Table III.

Table III		
Range of Marks in %	**Grade Points for**	**Letter Grade Points for**
80-100	O	10
71-79	A+	9
66-70	A	8
61-65	B+	7
56-60	B	6
50-55	C	5
40-49	P	4
Below 40	F	0
Absent (lack of attendance)	Ab	0

The Semester Grade Point Average (SGPA) is computed from the grades as a measure of the student's performance in a given semester. The SGPA is based on the grades of the current term, while the Cumulative GPA (CGPA) is based on the grades in all courses taken after joining the programme of study.

Computation of SGPA and CGPA

The following procedure shall be followed to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA):

The SGPA is the ratio of the sum of the product of the number of credits with the grade points scored by a student in all the courses taken by a student and the sum of the number of credits of all the courses undergone by a student, i.e. **SGPA** (Si) = Σ(Ci x Gi) / ΣCi

Where Ci is the number of credits of the i^{th} course and Gi is the grade point scored by the student in the i^{th} course.

(i) Example for Computation of SGPA where candidate has not failed in any course.

Semester	**Course**	**Credit**	**Letter Gr**	**Gradepoint**	**Credit Point** (Credit x Grade)
I	Course 1	3	A	8	3 X 8 = 24
I	Course 2	4	B+	7	4 X 7 = 28
I	Course 3	3	B	6	3 X 6 = 18
I	Course 4	3	O	10	3 X 10 = 30
I	Course 5	3	C	5	3 X 5 = 15
I	Course 6	4	B	6	4 X 6 = 24
		20			139
	SGPA				139/20=6.95

(ii) Example for Computation of SGPA where candidate has failed in one course.

Semester	**Course**	**Credit**	**Letter Grade**	**Grade point**	**Credit Point** (Credit x Grade)
I	Course 1	3	A	8	3 X 8 = 24
I	Course 2	4	B+	7	4 X 7 = 28
I	Course 3	3	B	6	3 X 6 = 18
I	Course 4	3	O	10	3 X 10 = 30
I	Course 5	3	C	5	3 X 5 = 15
I	Course 6	4	F	0	4 X 0 = 00
		20			115
	SGPA				115/20=5.75

(iii) Example for Computation of SGPA where candidate has failed in two courses.

Semester	**Course**	**Credit**	**Letter Grade**	**Grade point**	**Credit Point** (Credit x Grade)
I	Course 1	3	A	8	3 X 8 = 24
I	Course 2	4	B+	7	4 X 7 = 28
I	Course 3	3	F	0	3 X 0 = 00
I	Course 4	3	B	6	3 X 6 = 18
I	Course 5	3	C	5	3 X 5 = 15
I	Course 6	4	F	0	4 X 0 = 00
		20			85
	SGPA				85/20=4.25

The CGPA shall also be calculated in similar way as shown in examples (i), (ii) and (iii) of SGPA for all subjects taken by the students in all the semesters. However, if any student fails more than once in the same subject, then while calculating CGPA, the credit and grade point related to the subject in which the student fails in multiple attempts will be restricted to one time only. The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts. In case of audit courses offered, the students may be given (P) or (F) grade without any credits. This may be indicated in the mark sheet. Audit courses will not be considered towards the calculation of CGPA.

PONDICHERRY UNIVERSITY

Implementation of NEP in Affiliated Colleges NEP courses structure from the Academic Year 2023-24

Titles of the Degree Programme: Bachelor of Sciences in Home Science (B.Sc., Home Science)

Titles of Diplomas embodied : UG Diploma in Home Science (Dip. Home Science)

Titles of Certificates embodied : UG Certificate in Home Science

I LIST OF MAJOR COURSES (Home Science as Single Major)

Sl No	Nature of Course	Course code	Title of the Course	Credit	No. Hrs of Teacher
1.	Major 1	BHSC 101	Food Ingredients	4	5
2.	Major 2	BHSC 102	Basics of Home Science	4	5
3.	Major 3	BHSC 201	Applied Human Physiology and Nutrition	4	5
4.	Major 4	BHSC 202	Fundamentals of Textiles	4	5
5.	Major 5	BHSC 203	Housing Interior Decoration	4	5
6.	Major 6	BHSC 204	Food Science	4	5
7.	Major 7	BHSC 205	Interior Decoration (Practical)	2	3
8.	Major 8	BHSC 206	Food Science (Practical)	2	3
9.	Major 9	BHSC 301	Dietetics for Normal Conditions	4	5
10.	Major10	BHSC 302	Introduction to Human Development	4	5
11.	Major11	BHSC 303	For UG, Summer internship of 45 days duration has to be considered.	4	45 days
12.	Major12	BHSC 304	Dietetics for Normal Conditions (Practical)	2	3
13.	Major13	BHSC 305	Clothing care and Construction (Practical)	2	3
14.	Major14	BHSC 306	Residential Space planning	4	5
15.	Major15	BHSC 307	Dietetics for Therapeutic conditions	4	5
16.	Major16	BHSC 308	Principles of Resource Management	4	5
17.	Major17	BHSC 309	Dietetics for Therapeutic conditions (Practical)	2	3
18.	Major18	BHSC 310	Residential space Planning (Practical)	2	3

II LIST OF MINOR COURSES (ELECTIVES/ALLIED/SPECIALISATION

Eight Credits from each stream have to be taken. 12 credits (50%) of the Minor (Disciplinary / Interdisciplinary) (Stream II and III) in the 3-year programme should be related to vocational education/training courses. These courses will be floated depending on the number of students registering and the availability on the faculty. The number students may be restricted depending on the available classroom facility and first-cum-first serve basis.

a. Minor Stream I (Within the Major – 8 credit to be taken)

Course code	Title of the Minor Course	Credits	No. Hrs of Teacher
Minor1/ BHSC 103	Food Preservation	4	5
Minor2 / BHSC 104	Household Cleaning and Pest Control	4	5
Minor3 / BHSC 105	Children with special needs	4	5
Minor4 / BHSC 106	Advanced Nutrition	4	5
Minor5 / BHSC 107	Design and Décor of Surface	4	5
Minor6 / BHSC 108	Food Laws and Regulations	4	5

b. Minor Stream II (From other discipline of the department– 8 credit to be taken) *

Course code	Title of the Minor Course	Credit	No. Hrs of Teacher
Minor1/ BHSC 207	Family Dynamics	4	5
Minor2 / BHSC 208	Applied Art on Textiles	4	5
Minor3 / BHSC 209	Functional Foods	4	5
Minor4 / BHSC 210	Tourism and Hospitality Management	4	5
Minor5 / BHSC 211	Communication for Development	4	5
Minor6 / BHSC 212	Non Governmental Organizations	4	5

*** Other department student of life sciences may also take from these minor courses**

c. Minor Stream III (From other department of life sciences – 8 credit to be taken) *

Course code	Title of the Minor Course	Credits	No. Hrs of Teacher
	Student of home science will take from the list of minor subjects of other departments		

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III MULTI DISCIPLINARY COURSES *

Sl No	Title	Credits	No. Hrs of Teacher
1.	Herbal Nutrition (Basics of Natural Science)	3	4
2.	Fundamentals of Adolescent Health (Basics of Humanities & Social Sciences)	3	4
3.	Sustainable Development and Food Security (Basics of Physical Sciences)	3	4

***** Common syllabus for all UG courses for other departments. Student of home science will take course from other department

iv)Ability Enhancement (AEC) courses: (8 Credits)

All Undergraduate (UG) students are mandated to complete atleast 8 Credits worth of Courses which focus on Communication and Linguistic skills, Critical reading, writing skills. These courses are expected to enhance the ability in articulation and presentation of their thoughts at workplace. Colleges may design these ability enhancement courses tuned to the requirements of given major discipline. Eg. A course in Business Communication is more appropriate in place of literature/prose/poetry.

a) English Language

Ability Enhancement Course	
I. English Language a) English Language & Literature – 1 and 2 b) Functional English – 1 and 2 c) Communicative English – 1 and 2	II. Indian Language (two courses) a) Indian language & Literature – 1 and 2 b) Functional language – 2 c) Communicative language - 1 and 2

V SKILL ENHANCEMENT COURSES (ONLINE COURSES FROM SKILL INDIA)

Sl No	Title of the Skill/Vocational courses	Credits	No. Hrs of Teacher
Skill 1	Food Safety and Quality Control	3	4
Skill 2	Early Childhood Care and Education	3	4
Skill 3	Apparel Designing	3	4

BOS identifies courses suitable to the students from Skill India courses offered by MOOCs/SWAYAM courses/Any other approved list of 3rd party certificate courses sponsored by Industry, GOI at special apprenticeship courses designed by any polytechnic college, Govt. MSME Training centres, BOS may also consider any other skill programmes that other Departments of the given institution. These may include skill training on computer programming, other emerging technologies.

vi) Value Added Common courses(VAC): (8 credits)

Under NEP, the UGC has proposed for 6 to 8 credits worth of common courses which are likely to add value to overall knowledge base of the students. These courses include:

a) Understanding India
a) Environmental Studies
b) Digital Technologies
c) Health, Wellness, Yoga Education, Sports & Fitness

The course structure and coverage of topics are suggested by UGC in its draft documents, colleges/UG Boards of Studies may design the methodology for conducting these value added courses.

* Students exiting the programme after securing 42 credits will be awarded UG Certificate in Home Science provided they secure 4 credits in work based vocational courses offered during summer term or internship / Apprenticeship in addition to 6 credits from skill-based courses earned during I & II semester. Summer Internship could be initiated during holidays and continued to the III semester.

*Students exiting the programme after securing 84 credits will be awarded UG Diploma in Home Science, provided they secure additional 4 credits in work based vocational courses offered during summer term or internship / Apprenticeship in addition to 9 credits from skill-based courses earned during I, II & III semester. Summer Internship could be initiated during holidays and continued to the V semester. For SEC, courses offered by MOOCs/SWAYAM courses/Any other approved list of 3rd party certificate courses sponsored by Industry, GOI at special apprenticeship courses designed by any polytechnic college, Govt. MSME Training centres.

* Students who want to undertake 3-year UG programme will be awarded UG Degree in Home Science upon securing 124 credits. A minimum of 12 credits will be allotted to the minor stream relating to vocational education and training spreading through II, III, IV & V semesters. Internship for a period of 45 days is included as the Major 11 which has to undergo after VI semester.

PONDICHERRY UNIVERSITY

NEP CURRICULUM & SYLLABUS

B.Sc. (HONORS) HOME SCIENCE

OFFERED IN AFFILIATED COLLEGES

FROM THE ACADEMIC YEAR
(2023-24 onwards)

FIRST YEAR-SEMESTER I

Course Code	Type of Course	Credits	Hours	Title of the Course
MJD-1	Major Course 1	4	5	Food Ingredients
MID-I	MinorCourse1 (from Steam I)	4	5	Food Preservation
MLDC-I	Multi–Disciplinary Course 1	3	4	Common syllabus for all UG courses, Institute will design the syllabus
AEC-I	Ability Enhancement Courses 1	2	3	Common syllabus for all UG courses, English/MIL
SEC-I	Skill Enhancement Courses 1	3	4	Food Safety and Quality Control Or will be taken from the MOOCs/SWAYAM
VAC-I	Value-addedCourses 1 & 2	2	4	Environmental Studies
VAC-II		2	4	Understanding India
Total Courses/ Credits/ Hours	7 Courses	20	29	

SEMESTER II

Course Code	Type of Course	Credits	Hours	Title of the Course
MJD-2	Major Course 2	4	5	Basics of Home Science
MID-II	MinorCourse2 (from Steam I)	4	5	Household Cleaning and Pest Control
MLDC-II	Multi–DisciplinaryCourses2	3	4	Common syllabus for all UG courses, Institute will design the syllabus
AEC-II	Ability Enhancement Courses 2	2	4	**Common syllabus for all UG courses.** English/MIL
SEC-II	Skill Enhancement Courses 2	3	4	Early Childhood Care and Education Or will be taken from the MOOCs/SWAYAM
VAC-III	Value-added Courses3 & 4	2	4	Digital Technologies
VAC-IV		2	4	Health, Wellness, Yoga Education, Sports & Fitness
Total Courses/ Credits/	7 Courses	20	29	

SECOND YEAR-SEMESTER III

Course Code	Type of Course	Credits	Hours	Title of the Course
MJD-3	Major Course 3	4	5	Applied Human Physiology and Nutrition
MJD-4	Major Course 4	4	5	Fundamentals of Textiles
MID-III	MinorCourse3 (from Steam II)	4	5	Family Dynamics
MLDC-III	Multi–Disciplinary Course 3	3	4	Common syllabus for all UG courses, Institute will design the syllabus
AEC-III	Ability Enhancement Courses 3	2	3	Common syllabus for all UG courses. English/MIL
SEC-III	Skill Enhancement Courses 3	3	4	Apparel Designing
Total Courses/ Credits/ Hours	6 Courses	20	26	

SEMESTER IV

Course Code	Type of Course	Credits	Hours	Title of the Course
MJD-5	MajorCourse5	4	5	Housing Interior Decoration
MJD-6	Major Course 6	4	5	Food Science
MJD-7	Major Course 7	2	5	Lab - Interior Decoration (Practical)
MJD-8	Major Course 8	2	5	Lab - Food Science (Practical)
MID-IV	MinorCourse4 (from Steam II)	4	5	Applied Art on Textiles
AEC-IV	Ability Enhancement Courses7&8	2	4	Common syllabus for all UG courses. English or Tamil / Hindi / French
VAC-V	Community Engagement andService	2	6	Community engagement NSS and other services
Total Courses/ Credits/ Hours	6 Courses	20	29	

THIRD YEAR-SEMESTER V

Course Code	Type of Course	Credits	Hours	Title of the Course
MJD-9	Major Course 9	4	5	Dietetics for Normal Conditions
MJD-10	Major Course 10	4	5	Introduction to Human Development
MJD-11	Major Course 11	4	5	For UG, Summer internship of 45 days duration has to be considered.
MJD-12	Major Course 12	2	5	Lab - Dietetics for Normal Conditions (Practical)
MJD-13	Major Course 13	2	5	Lab - Clothing care and Construction (Practical)
MID-V	MinorCourse5 (from Steam III)	4	5	**Select form the bunch of minor courses offered by the other department of life sciences**
Total Courses/ Credits/ Hours	5 Courses	20	25	

SEMESTER VI

Course Code	Type of Course	Credits	Hours	Title of the Course
MJD-14	MajorCourse14	4	5	Residential Space planning
MJD-15	Major Course 15	4	5	Dietetics for Therapeutic conditions
MJD-16	Major Course 16	4	5	Principles of Resource Management
MJD-17	Major Course 17	4	5	Lab - Dietetics for Therapeutic conditions
MJD-18	Major Course 18	4	5	Lab - Residential space Planning
MID-VI	MinorCourse6 (from Steam III)	4	5	**Select form the bunch of minor courses offered by the other department of life sciences**
Total Courses/ Credits/ Hours	5 Courses	20	25	

I LIST OF MAJOR COURSES (Home Science as Single Major)

Sl No	Nature of Course	Course code	Title of the Course	Credit	No. Hrs of Teacher
1.	Major 1	BHSC 101	Food Science – Non Perishables	4	5
2.	Major 2	BHSC 102	Basics of Home Science	4	5
3.	Major 3	BHSC 201	Applied Human Physiology and Nutrition	4	5
4.	Major 4	BHSC 202	Fundamentals of Textiles	4	5
5.	Major 5	BHSC 203	Housing Interior Decoration	4	5
6.	Major 6	BHSC 204	Food Science – Perishables	4	5
7.	Major 7	BHSC 205	Interior Decoration (Practical)	2	3
8.	Major 8	BHSC 206	Food Science (Practical)	2	3
9.	Major 9	BHSC 301	Dietetics for Normal Conditions	4	5
10.	Major10	BHSC 302	Introduction to Human Development	4	5
11.	Major11	BHSC 303	For UG, Summer internship of 45 days duration has to be considered.	4	45 days
12.	Major12	BHSC 304	Dietetics for Normal Conditions (Practical)	2	3
13.	Major13	BHSC 305	Clothing care and Construction (Practical)	2	3
14.	Major14	BHSC 306	Residential Space planning	4	5
15.	Major15	BHSC 307	Dietetics for Therapeutic conditions	4	5
16.	Major16	BHSC 308	Principles of Resource Management	4	5
17.	Major17	BHSC 309	Dietetics for Therapeutic conditions (Practical)	2	3
18.	Major18	BHSC 310	Residential space Planning (Practical)	2	3

II LIST OF MINOR COURSES (ELECTIVES/ALLIED/SPECIALISATION)

Eight Credits from each stream have to be taken. 12 credits (50%) of the Minor (Disciplinary / Interdisciplinary) (Stream II and III) in the 3-year programme should be related to vocational education/training courses. These courses will be floated depending on the number of students registering and the availability on the faculty. The number students may be restricted depending on the available classroom facility and first-cum-first serve basis.

a. With Minor Stream I (Within the Major – 8 credit)

S No / Course code	Title of the Minor Course	Credits	No. Hrs of Teacher
Minor1/ BHSC 103	Food Preservation	4	5
Minor2 / BHSC 104	Household Cleaning and Pest Control	4	5
Minor3 / BHSC 105	Children with special needs	4	5
Minor4 / BHSC 106	Advanced Nutrition	4	5
Minor5 / BHSC 107	Design and Décor of Surface	4	5
Minor6 / BHSC 108	Food Laws and Regulations	4	5

b. Minor Stream II (Within the other discipline of the department– 8 credit)

S. No / Course code	Title of the Minor Course	Credits	No. Hrs of Teacher
Minor1/ BHSC 207	Family Dynamics	4	5
Minor2 / BHSC 208	Applied Art on Textiles	4	5
Minor3 / BHSC 209	Functional Foods	4	5
Minor4 / BHSC 210	Tourism and Hospitality Management	4	5
Minor5 / BHSC 211	Communication for Development	4	5
Minor6 / BHSC 212	Non Governmental Organizations	4	5

*** Other department student of life sciences may also take from these minor courses**

c. Minor Stream III (From other department of life sciences – 8 credit to be taken) *

Course code	Title of the Minor Course	Credits	No. Hrs of Teacher
	Student of home science will take from the list of minor subjects of other departments		

III MULTI DISCIPLINARY COURSES *

Sl No	Title	Credits	No. Hrs of Teacher
1.	Herbal Nutrition (Basics of Natural Science)	3	4
2.	Fundamentals of Adolescent Health (Basics of Humanities & Social Sciences)	3	4
3.	Sustainable Development and Food Security (Basics of Physical Sciences)	3	4

***** Common syllabus for all UG courses for other departments. Student of home science will take course from other department

iv)Ability Enhancement (AEC) courses: (8 Credits)

All Undergraduate (UG) students are mandated to complete atleast 8 Credits worth of Courses which focus on Communication and Linguistic skills, Critical reading, writing skills. These courses are expected to enhance the ability in articulation and presentation of their thoughts at workplace. Colleges may design these ability enhancement courses tuned to the requirements of given major discipline. Eg. A course in Business Communication is more appropriate in place of literature/prose/poetry.

b) English Language

Ability Enhancement Course	
I. English Language d) English Language & Literature – 1 and 2 e) Functional English – 1 and 2 f) Communicative English – 1 and 2	II. Indian Language (two courses) d) Indian language & Literature – 1 and 2 e) Functional language – 2 f) Communicative language - 1 and 2

V SKILL ENHANCEMENT COURSES (ONLINE COURSES FROM SKILL INDIA)

Sl No	Title of the Skill/Vocational courses	Credits	No. Hrs of Teacher
Skill 1	Food Safety and Quality Control	3	4
Skill 2	Early Childhood Care and Education	3	4
Skill 3	Apparel Designing	3	4

BOS identifies courses suitable to the students from Skill India courses offered by MOOCs/SWAYAM courses/Any other approved list of 3rd party certificate courses sponsored by Industry, GOI at special apprenticeship courses designed by any polytechnic college, Govt. MSME Training centres, BOS may also consider any other skill programmes that other Departments of the given institution. These may include skill training on computer programming, other emerging technologies.

vi) Value Added Common courses(VAC): (8 credits)

Under NEP, the UGC has proposed for 6 to 8 credits worth of common courses which are likely to add value to overall knowledge base of the students. These courses include:

b) Understanding India
d) Environmental Studies
e) Digital Technologies
f) Health, Wellness, Yoga Education, Sports & Fitness

The course structure and coverage of topics are suggested by UGC in its draft documents, colleges/UG Boards of Studies may design the methodology for conducting these value added courses.

* Students exiting the programme after securing 40 credits will be awarded UG Certificate in Home Science provided they secure 4 credits in work based vocational courses offered during summer term or internship / Apprenticeship in addition to 6 credits from skill-based courses earned during I & II semester. Summer Internship could be initiated during holidays after II semester and continued to the III semester.

*Students exiting the programme after securing 80 credits will be awarded UG Diploma in Home Science, provided they secure additional 4 credits in work based vocational courses offered during summer term or internship / Apprenticeship in addition to 9 credits from skill-based courses earned during I, II & III semester. Summer Internship could be initiated during holidays and continued to the V semester. Courses Under MD, AEC, & VAC will be finalized by the respective institution. For SEC, courses offered by MOOCs/SWAYAM courses/Any other approved list of 3rd party certificate courses sponsored by Industry, GOI at special apprenticeship courses designed by any polytechnic college, Govt. MSME Training centres.

- Students who want to undertake 3-year UG programme will be awarded UG Degree in Home Science upon securing 124 credits. A minimum of 12 credits will be allotted to the minor stream relating to vocational education and training spreading through II, III, IV & V semesters. Internship for a period of 45 days is included as the Major 11 which has to undergo after VI semester

Question Paper Pattern for End Semester Theory Examination

Duration : 3 hour **Max. Mark: 75**

SECTION – A: (10 x 2 = 20 Marks)

- It is of short answer type. Each question carries 2 marks.
- 10 questions to be given by selecting 2 questions from each unit.
- Candidate should Answer all the questions.

SECTION – B: (5 x 5 = 25 Marks)

- It is of short answer type. Each question carries 5 marks.
- 5 questions to be given with either or choice, 1 question from each unit.
- Candidate should answer all 5 questions.

SECTION – C: (3 x 10 = 30 Marks)

- It is of essay answer type. Each question carries 10 Marks.
- 5 questions to be given. One question from each unit.
- Candidate should answer 3 out of 5 questions.

LIST OF MAJOR COURSES (SINGLE MAJOR)

B. Sc. HOME SCIENCE

MJD 1 – BHSC101 FOOD INGREDIENTS

Credits: 4

Hours : 5

Learning Objectives:

- To enable the students to obtain knowledge of different food groups, their composition and nutrients present.
- To acquire knowledge on appropriate cooking methods for nutrient conservation and their role in diet with respect to ingredients with longer shelf life and are non perishables.

Course Outcome:

Students will be,

a) able to analyse food ingredients with their composition, processing and nutritional values

b) critically analyse and evaluate food ingredients scientifically and hence can be able to implement in food processing and technology

UNIT I

Meaning, definition & functions of food. Food groups – Basic Five, classification of foods. Asian food pyramid. Objectives of cooking, preliminary preparations, advantages and disadvantages of cooking, cooking methods--moist and dry heat method, combination method, their advantages and disadvantages. Microwave & solar cooking.

UNIT II

Cereals: Structure, composition, nutritive value, processing and effects of processing of rice, wheat & ragi. Gluten formation, gelatinization, dextrinisation and factors affecting it. Cereal cookery- fermented and unfermented products of cereals, millets, breakfast cereals.

UNIT III

Pulses: Nutritive value, processing and effects of processing, toxic constituents of pulses. Highlighting soyabeans. Nutritional implication of germination. Nuts and oilseeds – nutritive value of commonly used nuts (Groundnut, cashew nut, almond) processing of oilseeds (groundnut, sesame).

UNIT IV

Fats and oils: Types and nutritive value, processing, changes during storage. Meaning of hydrogenation, rancidity, smoking point, emulsification. Role of fat/oil in cookery.

UNIT V

Spices and Condiments: Types, uses in Indian cookery.

Sugar: Properties, types, sugar related products, artificial sweeteners. Sugar cookery.

TEXTBOOKS

1. Manay N.S., and Shadaksharaswamy, M (2001): Foods, facts and principles, New Age International Pvt. Ltd., publishers, New Delhi.

2. Mudambi S.R and Rajagopal V.M: Fundamentals of Foods and Nutrition, Wiley Eastern Ltd., New Delhi.

3. Srilakshmi B, (2005): Food Science, New Age International Publishers, New Delhi.

4. Usha Chandrasekhar, Food Science and Application in Indian Cookery, Phoenix Publishing House P. Ltd., New Delhi, 2002.

REFERENCES

1. Belitz H.D (2005): Food Chemistry, Springer Veriag.

2. Potter, N. and Hotchikiss, J.H. (1996): Food Science, Fifth edition, CBS.

3. Van Garde. J &Woodbush M. (1999): Food Preservation-Safety, Principles and Practice, Surabhi Publications, Jaipur.

4.Sood S and Khetar Paul N. (2002), Food Preservation, Agrotech Pub. Co., Udaipur

WEBLINK

1. https://mitsmegafoodpark.com/mobile/documents/project_report/pulse.pdf
2. http://www.jnkvv.org/PDF/05042020135315spices.pdf

MJD 2 - BHSC 102 Basics of Home Science

Credits: 4 **Hours : 5**

Learning Objectives:

To enable the students to

- Understand the concept, scope, and philosophy of Home Science.
- Create awareness regarding various applied and core specializations of Home Science.
- Appreciate the role of Home science and its multidisciplinary approach in career building.
- Appreciate the role of Home Science in Nation building.

Course Outcome:

- Develop professional skills in food, nutrition, textiles, housing and human development.
- Understand and appreciate the role of interdisciplinary sciences, the development and well being of individuals, the families and communities.
- Acquire professional and entrepreneurial skills for economic empowerment of self in particular and community.
- Understand the science and technology that enhance the quality of life of people.
- Bringing science from laboratory to the people

Unit-I: Basics of Home Science

Definition, meaning, branches and scope of Home Science. - Philosophy of Home Science. - Development of Home-Science as a discipline. Scientific and multidisciplinary nature of Home Science.

Unit-II: Fields and job opportunities in Home Science

Home Science Education at various levels-School/College/ University/ Research. - Job oriented courses: Nutrition, Dietetics, Food Preservation, Housing, Textiles and Clothing, Interior Design, Pre-School education and extension (i) - Vocations within and outside Home Science Institutions. - Qualities of a good Home Science student.

Unit-III: Home Science in Action Programme

Applied Nutrition programme, Integrated Child Development services - Integrated Rural Development programme - National Rural employment Programme - Training of Gram sewikas, MukhyaSawikas, National Adult Education Programme - Role of Home Science in Women's empowerment. - Role of Home Science in the Service of community and in rural Development.

UNIT-IV: Home Science and Family Studies

Average size, marriage patterns, distinct social roles and nature of relationship between members of the family. - Internal distinction is authority based on Age and sex roles. - Gender differences with reference to atrocities and access to resources (female headed households) - Role of Home Science education in the empowerment of Individual, Family and Society.

Unit-V: Computers in Home Science

Relevance of computers to Home Science-Basics of Computer: A. Model of computer, Characteristics of computer, problem solving using computers. - Input/output units Description of computer input/output units, other input method, Computer output units. - Introduction to operating system-MS Windows, exploring desktop, Windows, exploring desktop, accessories, control panel, managing documents and folders.

TEXTBOOKS

1· Chouhan, A. (2015) "Comprehensive Home Science X",

2· Mullick, P. " Textbook of Home Science", Kalyani Publisher

3. Devdas, Rajmal, P. (1968) Textbook of Home-Science, Farm information Unit, Directorate of Extension, Ministry of Agriculture, New Delhi.

4. Devdas Rajmal, P. The Meaning of Home Science Sri Avinashi lingam Home Science, Coimbatore (1968)

REFERENCES

1. Chandra A. Shah, AJishi U." Fundamental of teaching Home Science", Sterling Publishers, Private Limited, 1989.

2. NEW AND RESTRUCTURED POST-GRADUATE CURRICULA & SYLLABI, Education Division, Indian Council of Agricultural Research, New Delhi, April 2009

WEBLINKS

1. https://www.distanceeducationju.in/pdf/HS-101%20Home%20Science.pdf

2.https://sos.cg.nic.in/E-Books/12th/English/engbook%20321%20Home%20Science/321_Home%20Science%20-%201%20(Final%20Book).pdf

MJD 3 – BHSC201 APPLIED HUMN PHYSIOLOGY AND NUTRITION

Credits: 4 **Hours : 5**

Learning Objectives:

To enable the students to:

- Understand the structure and functions of various organs of the body
- Obtain a better understanding of the principles of nutrition through the study of physiology
- Highlight the influence of improper functioning of the organ system and disease

Course Outcome:

- Apply concepts and knowledge of the general terminology, cell structure and function, histology, gross anatomy, and physiology related to the endocrine, cardiovascular, lymphatic, digestive, respiratory, urinary and reproductive systems to novel technical and/or clinical scenarios.

UNIT 1:

Digestive system a) Teeth and mastication b) Structure and functions of salivary glands, pharynx, esophagus, stomach, small and large intestine. c) Duodenum, liver and gall bladder, pancreas. d) Process of digestion and absorption. e) Role of digestive enzymes and gastrointestinal hormones

Excretory system a) Structure of kidney and its functions b) Structure of nephron and its functions (formation of urine) c) Composition of urine

UNIT II

Blood and circulatory System (a)Composition of blood- WBC, RBC, Platelets –Structure, formation and function, coagulation, of blood ,blood groups and Rh factor (b)Heart – Structure, and functions, blood pressure, types of circulation, principle blood vessels- structure and function

Respiratory system a) Structure of Respiratory system b) Mechanism of respiration c) Exchange of gases.

UNIT III

Introduction to nutrition: Definition of nutrition and nutrients. Adequate. Optimum good nutrition and Malnutrition.

Energy- Definition, units of measurement, direct and indirect calorimetry; Determination of energy value of food, Total Energy requirement, Factors affecting physical activity, Factors affecting Basal Metabolic Rate, factors affecting Thermic effect of food, Recommended Dietary Allowances and Sources

UNIT IV

Macronutrients:

a. Carbohydrates – Composition, classification, foods sources, functions, Maintenance of blood sugar levels, requirement, sources, digestion and absorption; Dietary fiber Definition, classification, physiological effects and sources.

b. Proteins – Composition, sources, functions, nutritional classification of proteins and amino acids, functions, sources, requirements, digestion and absorption. Evaluation of protein quality: PER, BV, NPU and Chemical score.

c. Lipids- Definition, composition, functions, sources, requirements, digestion and absorption. Essential fatty acids – Definition, functions, sources and effects of deficiency

UNIT V :

Micronutrients:

a. Minerals- Function, sources, bioavailability, and deficiency of calcium, iron, iodine, fluoride, magnesium, zinc, sodium and potassium.

b. Vitamins – classification, sources, units of measurements, functions, and deficiency of the fat soluble and water soluble vitamins.

TEXT BOOKS

1. Ross and Wilson(2011), Anatomy and physiology in Health and Illness, 11th Edition, Church Hill Livingstone.

2. West, J.B.(2007), Best and Taylor's Physiological Basis of Medical Practice, 11th Edition.

3. Gyton (1996), Test Book of Medical Physiology, 9th Edition, Prism Books Pvt. Ltd.,W.B. Sanders Company, USA.

4. Chatterjee C.C (2016), Human Physiology Volume I, Medical Allied Agency, Kolkata.

REFERENCES

5. Sumathi R. Mudambi, Rajagopal, M.V., Fundametals of Foods and Nutrition, New Age International (P) Ltd, Publishers, Third edition, 1997.

6. Srilakshmi B.,Nutrition Science, New Age International (P) Ltd, Publishers, Fifth ,multi colour edition,2016.

7. Mangala Kango, Normal Nutrition, Curing diseases through diet, CBS Publications, First edition, 2005. 8. Sue Rodwell Williams, Nutrition and Diet Therapy, C.V. Melskey Co., 6th edition, 2000.

WEB LINKS

1. file:///C:/Users/Admin/Downloads/lec2.pdf

2. https://www.uc.edu/content/dam/uc/ce/docs/OLLI/Page%20Content/OLLI%20-%20The%20Digestive%20System.pdf

MJD 4 - BHSC 202 FUNDAMENTALS OF TEXTILES

Credits: 4 **Hours : 5**

Learning Outcomes:

To enable the students to

- Acquainted with the different textiles and their performances.
- Impart knowledge on different textile finishes.
- To acquaint with proper notion regarding choice of fabric
- Gain the knowledge of equipments used in clothing construction
- To develop skills in clothing construction.

Course Outcomes:

- Understand the classification and properties of textiles fibre.
- Develop professional skills in textiles
- Acquire the knowledge of weaving and its types
- Identify the finishes used in fabric preparation
- Acquire professional skill in drafting and clothing construction

Unit I

Introduction to Textile Fibres,

Meaning and classification of fibres, Production, properties and usage of fibresNatural fibre: cotton, flax, silk and wool Man-made fibers: Rayon(Viscose)

Unit II

Yarn construction and their properties

Yarn formation ,Mechanical spinning (cotton system, wool system, worsted system) chemical spinning (wet, dry, melt) , Types of yarns: Staple and filament, simple yarn, complex yarns

Unit III

Fabric construction

Weaving: Parts and functions of the loom ,Weaves : Classification of weaves (Plain, Basket, Ribbed, Twill, Satin, Sateen)- Structure, Properties, usages . Knitting: Classification, construction, characteristics and usage. Non woven and felts-construction, properties and usage

Unit IV

Dyeing and Printing

Classification of dyes , Natural and chemical dyes.Methods of dyeing, emphasis on stock, yarn, and piece dyeing.Methods of Printing: Block, Roller, Screen, Resist, Discharge printing.

Unit V

Finishing

Mechanical finishes-Beetling, Calendaring, Embossing, Glazing, Napping. Chemical Finishes-Mercerization, Ammoniating. Dyeing - Types of dyes.

Care of textiles. Laundry agents- selection of suitable soaps, detergents, bleaches, whitening agents, stiffening agents, Dry cleaning agents, stain removal agents. Laundering – Principles of laundering, general methods of laundering – dry cleaning process, stain removal.

TEXT BOOKS

1. Textile Fabrics and Their Selection: Wingate.

2. Textiles: Hollwn and Saddler.

3. Textile Fiber and their use: Katharine Paddoek Hess.

REFERENCES

1. Art of Sewing: Anna Jacob.

2. Manual for Children Clothing: Savitri Pandit

WEB LINKS

1. https://nios.ac.in/media/documents/srsec321newE/321-E-Lesson-24.pdf

2. https://www2.cs.arizona.edu/patterns/weaving/books/lds_fof_05.pdf

MJD 5 – BHSC 203 - HOUSING, INTERIOR DECORATION

Credits: 4 **Hours : 5**

Learning Objectives:

- The values and goals in housing.
- The principles of house maintenance that promote health and comfort of the family.
- The fundamental principles of interior design

Course Outcome:

Students will be able to:

1. Remember and explain in a systematic way the difference between interior design and decoration

2. Understand and use the elements and principles to create beautiful designs & interiors

3. Critically explain the nuances of Indian interior design work in prescribed areas under co-curricular activity

4. Application of the principles and elements in creating beautiful landscape

UNIT I

Design: Types, elements of design – line and direction, shape and form, size, colour, texture, space. Principels of design – harmony, proportion, balance, rhythm and emphasis – meaning, types and its application.

UNIT II

Colour: Definition, dimensions of colour, prang colour system. Munselcolour System. Colour harmonies, developing colour schemes for different rooms, principles of design in colour. Colour and emotional effect.

UNIT III

Furniture: Selection and arrangement in various rooms. Furnishing – factors considered in selection of furnishing materials, floor coverings, curtains and draperies, window treatments. Accessories – definition, classification and use.

UNIT IV

Flower arrangement: Importance, Materials used, types, steps in making flower arrangement. Lighting: Importance, measurements, types and lighting requirements for various activities and rooms.

UNIT V

Housing: Importance of housing, functions of a house, site selection and principles of designing living space. Types of house plans for various income groups. Kitchen: Various areas of kitchen, types of kitchen. Table setting – laying the table, general rules for table setting, western styles, buffet style and Indian style.

TEXT BOOKS

1. Faulkner & Faulkner "Inside Today's Home"
2. Goldstein & Goldstein "Art in Everyday Life"
3. Premavathy Seetharaman & Parveen Pannu "Interior Design & Decoration

REFERENCES

1. Interior design and décor, Seetharaman

2. Fundmentals of Lighting. Originally published: October 2007. Author: Susan M. Winchip

WEB LIKS

1.https://gyansanchay.csjmu.ac.in/wp-content/uploads/2022/11/FLOWER-ARRANGEMENT-.pdf

2. https://www.oca.ac.uk/wp-content/uploads/2020/06/Interior-Design-Basics-red.pdf

MJD 6 – BHSC 204 FOOD SCIENCE

Credits: 4 **Hours : 5**

Learning Objectives

- To enable the students to obtain knowledge of different food groups, their composition and nutrients present in it.
- To make the students to learn appropriate pre preparation and cooking methods for nutrient conservation
- To acquire knowledge about the role of different foods in diet with respect to food ingredients with lesser shelf life and are perishable

Course Outcomes

- Student will be
- Student will be able to analyse food ingredients with their composition, processing and nutritional values
- will critically analyse and evaluate food ingredients scientifically and hence can be able to implement in food processing and technology

UNIT I

Milk : Composition, properties, nutritive value and processing of milk. Effect of heat, acid, enzymes and salt on milk. Milk products – fermented and unfermented. Milk cookery.

UNIT II

Meat : Structure, Composition and nutritive value. Post – modern changes, ageing, tenderizing and curing of meat. Meat cookery – changes during cooking.

Poultry : Classification, composition and nutritive value. Eggs – structure, composition, nutritive value. Evaluation of quality. Egg cookery. Fish : Classification, composition, nutritive value, Selection, factors affecting spoilage, Fish cookery.

UNIT III

Vegetables & Fruits : Classification, selection, Composition, Pigments, Enzymes, Flavor compounds, Nutritive value.Effect of cooking on colour, texture, flavor, appearance and nutritive value. storage of vegetables. Role of mushroom, spirulina in diet as alternative source with algae and fungi base.

Fruits : Classification, selection, pigments, enzymes and nutritive value, post harvest changes and storage. Browning reaction – enzymatic and non-enzymatic.

UNIT IV

Different types of food additives and their uses. Food adulteration. Principles and signification of Food Technology, Fortification and Enrichment, HACCP.

UNIT V

Organic foods : Organic farming, its advantages and limitations, certification. Genetically modified foods : Meaning and process of GM foods in brief. Advantages and limitations of GM foods.

TEXTBOOKS

1. Manay N.S., and Shadaksharaswamy, M (2001): Foods, facts and principles, New Age International Pvt. Ltd., publishers, New Delhi.
2. Mudambi S.R and Rajagopal V.M: Fundamentals of Foods and Nutrition, Wiley Eastern Ltd., New Delhi.
3. Srilakshmi B, (2005): Food Science, New Age International Publishers, New Delhi.
4. Usha Chandrasekhar, Food Science and Application in Indian Cookery, Phoenix Publishing House P. Ltd., New Delhi, 2002.

REFERENCES

1. Belitz H.D (2005): Food Chemistry, Springer Veriag.
2. Potter, N. and Hotchikiss, J.H. (1996): Food Science, Fifth edition, CBS.
3. Van Garde. J &Woodbush M. (1999): Food Preservation-Safety, Principles and Practice, Surabhi Publications, Jaipur.
4. Sood S and Khetar Paul N. (2002), Food Preservation, Agrotech Pub. Co., Udaipur.

WEB LINKS

1. file:///C:/Users/Admin/Downloads/MilkandDifferentTypesofMilkProducts.pdf

2. https://ucanr.edu/datastoreFiles/608-781.pdf

Major 7 – BHSC 205 INTERIOR DECORATION – PRACTICAL

CREDIT 2 **Hours : 3**

PRACTICALS

1. Evaluation of design.
2. Preparation of colour chart and various colour schemes.
3. Application of design principles in preparation of greeting card, poster and a wall hanging
4. Application of design principles in Flower arrangement
5. Application of design principles in Window treatment
6. Drawing floor plans for different income groups.
7. Furniture arrangement in different rooms by means of paper cut out.
8. Table Setting – Indian, Western styles.
9. Drawing various types of kitchen plans.
10. Visiting furnishing shops or Hotels or Handicrafts

TEXT BOOKS

1. Faulkner & Faulkner "Inside Today's Home"
2. Goldstein & Goldstein "Art in Everyday Life"
3. Premavathy Seetharaman & Parveen Pannu "Interior Design & Decoration

REFERENCES

1. Interior design and décor, Seetharaman
2. Fundmentals of Lighting. Originally published: October 2007. Author: Susan M. Winchip

WEB LIKS

1. https://gyansanchay.csjmu.ac.in/wp-content/uploads/2022/11/FLOWER-ARRANGEMENT-.pdf
2. https://www.oca.ac.uk/wp-content/uploads/2020/06/Interior-Design-Basics-red.pdf

Major 8 – BHSC 206 FOOD SCIENCE – PRACTICAL

CREDIT 2 **Hours ; 3**

I. NON PERISHABLE INGREDIENTS

1. Familiarization with different kitchen gadgets.

2. Methods of measuring dry ingredients and liquids.

3. Cereal cookery

a. Methods of combining flour with liquid eg. Powdered cereal coarse (eg. Phirnee, broken wheat uppuma) and fine (eg. Ragi porridge, wheat halwa).

b. Cereal Grains: different methods of cooking rice – straining, absorption – cooking over slow heat, pressure cooking, addition of fat, microwave and electric rice cooker.

c. Recipes with rice.

4. Pulse Cookery

a. Different methods of cooking pulses – hard water, soft water, soaking, addition of soda bicarbonate, addition of raw papaya, pressure cooking eg. Any whole gram and dhal.

b. Recipes with pulses.

II. PERISHABLE INGREDIENTS

Milk cookery: Experimental milk cookery. Preparation of selected common recipes.

Egg cookery: Experimental cookery on eggs-boiled eggs, poached eggs,Omelettes and custards. **Preparation of selected common recipes.**

Vegetables Cookery

Different methods of cooking vegetables – effect of shredding, dicing, acid and alkali, pressure cooking, steaming with and without lid. Eg. Potato, beetroot, carrot and greens. Recipes with Vegetables

4. Fruits: Prevention of browning on fruits. Preparation of selected common recipes.

RELATED EXPERIENCE: Visit to any regional food processing industry

TEXTBOOKS

1. Manay N.S., and Shadaksharaswamy, M (2001): Foods, facts and principles, New Age International Pvt. Ltd., publishers, New Delhi.

2. Mudambi S.R and Rajagopal V.M: Fundamentals of Foods and Nutrition,Wiley Eastern Ltd., New Delhi.

3. Srilakshmi B, (2005): Food Science, New Age International Publishers, New Delhi.

4. Usha Chandrasekhar, Food Science and Application in Indian Cookery, Phoenix Publishing House P. Ltd., New Delhi, 2002.

REFERENCES

1. Belitz H.D (2005): Food Chemistry, Springer Veriag.
2. Potter, N. and Hotchikiss, J.H. (1996): Food Science, Fifth edition, CBS.
3. Van Garde. J &Woodbush M. (1999): Food Preservation-Safety, Principles and Practice, Surabhi Publications, Jaipur.
4. Sood S and Khetar Paul N. (2002), Food Preservation, Agrotech Pub. Co., Udaipur.

WEB LINKS

1. file:///C:/Users/Admin/Downloads/MilkandDifferentTypesofMilkProducts.pdf

2. https://ucanr.edu/datastoreFiles/608-781.pdf

MJD 9 – BHSC 301 DIETETICS FOR NORMAL CONDITION

Credits: 4 **Hours : 5**

Learning Objectives:

To enable the students to:

- Understand the Physiological basis for Nutrition
- Get familiarised with the basic concepts and gain experience in Planning and Preparation of meals for various age group at different income level and conditions based on their nutritional needs.
- Get exposed to responsibilities of a dietician

Course Outcome:

- Practically gain knowledge to plan diet for each stage of life according to the guidelines for dietary needs
- Gain knowledge on changes during various stages of growth and development throughout lifecycle

UNIT I

Basic principles of menu and meal planning. Factors to be considered in menu planning. Reference Man and Reference Woman. Recommended Dietary Allowances (2020). Adulthood – Classification of activities, food and nutritional requirements (ICMR), dietary guidelines, diet plan. Nutrition related problems – Anaemia, obesity.

UNIT II

Pregnancy: Physiological stages of pregnancy, food and nutritional requirements (ICMR), dietary guidelines, diet plan, complications of pregnancy (in brief)- gestational diabetes, hyperemesis gravidarum, pregnancy induced Hypertension (PIH), toxemia. Physiological cost of pregnancy.

Lactation: Physiology of lactation, food and nutritional requirements (ICMR), dietary guidelines, significance of Galactogogues, diet plan, problems during lactation.

UNIT III

Infancy: Growth and development, food and nutritional requirements (ICMR). Breast feeding, artificial feeding, infant formula, supplementary foods, weaning. Feeding problems. Nutritional requirements for preterm.

Pre-schoolers – Growth and development, food and nutritional requirements (ICMR), dietary guidelines, diet plan. Nutrition related problems – Protein Energy Malnutrition, Vitamin A deficiency. School children – Growth and development, food and nutritional requirements, dietary guidelines, diet plan, importance of snacks, packed lunch. Nutrition related problems – underweight, overweight, obesity.

UNIT IV

Adolescence: Growth and development, food and nutritional requirements (ICMR), dietary guidelines, diet plan. Food choices – Eating habits and the influencing factors. Eating disorders of adolescents-Anorexia, Bulimia . Geriatric nutrition: Food and nutritional requirements (ICMR), dietary guidelines, diet plan, nutritional related problems-osteoporosis, osteomalacia, constipation. Factors affecting food intake, nutritional supplementation.

UNIT V

Dietician: Classification, responsibilities, code of ethics. Nutritional care process, medical history assessment, assessment of patient needs. Dietary counselling :Different methods, handling the patient and the patient's family during counselling, principles of family counselling, evaluation of the effectiveness of counselling, education of the patient and follow up.

Indian Dietetic Association: Evolution in India, and its functions

TEXTBOOKS

1. Corinne, H. Robinson (2010), "Normal and Therapeutic nutrition", Oxford and IBHpublishing company, Bombay.

2. B. Srilakshmi (2012), "Dietetics",4th edition, New age international Publisher, Chennai.

REFERENCES

1. Gopalan, C., Balasubramanian, (2012) , "Nutritive value of Indian foods", NIN,ICMR, Delhi

2. Nutrition And Dietetics, Shubhangini A Joshi, McGraw Hill Edition : 5th Edition,2023

WEB LINKS

1. https://www.diva-portal.org/smash/get/diva2:902175/FULLTEXT01.pdf

MJD 10 – BHSC 302 INTRODUCTION TO HUMAN DEVELOPMENT

Credits: 4 **Hours : 5**

Learning Objectives:

To enable the students to

- To understand the growth and development process from conception to confinement
- To Understand the physical, cognitive, emotional and social development of the individual from infancy to adulthood
- To recognize the milestones in child rearing.

Course Outcome:

Students will be to able to learn following points

- History and scope of human development
- Principles of growth & development
- Physical, cognitive, motor, social and emotional development from infancy to adulthood
- Play, Learning and habit formation during childhood.
- Personality development and adjustment during adolescence and changes in adulthood and adjustments in old age.

UNIT I

Introduction to Human Development: Definition, History, Scientific and multidisciplinary nature of Human Development in contemporary society. Stages of Human Development. Principles of growth and development.

UNIT II

Prenatal Development: Birth and the Neonate (newborn)- Planning and preparing for parenthood. Conception – Signs and symptoms of pregnancy, prenatal development – stages of development, factors affecting development, birth process – signs and stages of labour, post-natal care, assisted reproductive technology (IVF, GIFT,FET).

UNIT III

Infancy: Development during infancy – Physical, social, emotional, cognitive and language. Infant care and hygiene – Breast-feeding, complementary feeding, immunization. Needs for children – Physiological and psychological. Role of child care centres.

UNIT IV

Early childhood/preschool (1-5 years): Physical, motor, emotional, social and intellectual development. Habit formation. Preschool education – importance, objectives, programmes. Play – definition, types, theories, characteristics and play hazards. Learning – definition, types – trial and error, insight, conditioning – classical and operant, implications and limitations.

Middle childhood years childhood/ school going (6-12 years) – Physical, social, emotional, intellectual, language and moral development. Habit formation. Special children – definition, classification and rehabilitation measures.

UNIT V

Adolescence, adulthood and old age - Physical and psychological changes, emotional, moral and social development. Personality development and Factors influencing personality development. Physical, cognitive, social and emotional changes during adulthood and old age and adjustments in old age.

TEXTBOOKS

1. Suriakanthi A., (1997): Child Development – An introduction, Kavitha Publishers.

2. Rajammal P. Devadas and Jaya N. Muthu (2002): A text book of Child Development, Macmillan, N.Delhi.

3. Swaminathan, M (1998) The first five years : A critical perspective on earlychildhood care and educationin India. New Delhi : Sage.

4. Singh, A. (Ed.) 2015. Foundations of Human Development: A life span approach. New Delhi: Orient Black Swan.

5. Hurlock E.B., (1972): Child development, McGraw Hill Book company.

REFERENCES

1. Nanda V.K., (1998): Principles of Child Development, Anmol Publications Pvt. Ltd., New Delhi.
2. Hurlock, E.B., (1995): Developmental Psychology-A life span approach, 5th McGraw Hill Book Co., New York.
3. Sapra, R. (2007): Integrated Approach to Human Development. Vishwabharathi. New Delhi.
4. Berk L.E. (2004): Child Development, Pearson Longman New Delhi.
5. Santrock, J.W. (2006): Child Development, New York : Mc Graw Hill.

WEB LINKS

https://online.maryville.edu/online-bachelors-degrees/human-development-and-family-studies/resources/stages-of-human-development/

MJD 12 – BHSC 304 DIETETICS FOR NORMAL CONDITIONS – PRACTICAL

CREDIT 2 **Hours : 3**

PRACTICAL

1. Planning and preparation of diet of adult men and women for different activities sedentary, moderate, heavy worker and income groups.
2. Planning and preparation of diet for a pregnant woman for different income groups and different activity levels.
3. Planning and preparation of diet for a nursing mother for different income groups and different activity levels.
4. Planning and preparation of diet for a pre school child, packed lunch for different income groups.
5. Planning and preparation of diet for an adolescent for different income groups.
6. Planning and preparation of diet for the aged from different income groups and different activity levels.

MJD 13 – BHSC 305 CLOTHING CARE AND CONSTRUCTION– PRACTICAL

CREDIT 2 **Hours : 3**

1. Clothing Construction (a) Tools for Clothing construction (b) Introduction to sewing machine, its parts and maintenance of sewing machine and sewing tools.
2. Learning to Stitch- (a) Knowing how to stitchstraight-line stitching, stitching at curves and corners (b) Basic Stitching-Temporary Stitching, Permanent and decorative stitching
3. Principles of clothing construction , Importance of Drafting and making patterns. Taking body measurement for different types of garments. Fabric preparatory steps for stitching a garment-preshrinking, straightening, layout, pinning, marking and cutting. Stitching Petticoat, Sari Blouse, Salwar suit.
4. Methods of Introducing Fullness (a) Seams-Plain seams and its finishing, run and fell seam, French seam (b) Attaching different fasteners
5. Disposal of fullness darts, gathers, tucks and pleats (d) Neckline FinishingFacing & Binding
6. Visit to a handloom unit.

MJD 14 – BHSC 306 RESIDENTIAL SPACE PLANNING

Credits: 4 **Hours : 5**

Learning Objectives:

- To learn the speace concept inside home and utilization of given space effectively
- To know about the functions and security given by house
- To basic ideas about house consutrution

Course Outcome:

- Develop skill in drawing house plan for different income groups.
- Acquire knowledge in recent building Materials.

Unit I

Space for living – Concept of space, factors influencing living space, Location and Orientation, Planning objectives- utility, economy, beauty and character. Need for space, space occupancy. Merits and demerits of owned and rented house.

Unit II

Significance of housing – functions of house, selection of site, Types of house plans- site plan, floor plan, elevation, cross–section, perspective view. Satisfaction in – individual houses, multi –storied flats, row houses, one room apartments.

Unit III

Division of space – private, public, work and traffic – definition, utility, determinants. Utility space – laundry facilities.

Unit IV

Principles of House plan – Aspect, orientation, prospect, privacy, grouping, roominess, flexibility, circulation, furniture requirements, sanitation, practical considerations.

Unit V

Methods of construction - Types of construction – meaning, basic knowledge in types of construction – load bearing and non-load bearing or framed structure. Cast in Site and Prefabrication – advantages and limitations.

TEXT BOOKS

1. Prabhakar, L.V. (1998), Vasthu – The User's Manual, The Avenue Press, Chennai.
2. Despande, R.S. (1974), Build Your Own Home, United Book Corporation, Poona.
3. Riggs, R. (1992), Materials and Components of Interior Design, Prentice Hall of India Pvt.Ltd, New Delhi.

REFERENCE BOOKS

1. Rao, C.H.G. (1995), Plants for Small Houses, Jai Ganesh offset Printers, chennai.

2. Faulkner, R, and Faulkner s. (1987), Inside Today's Home, Rinehart Publishing Company, Newyork.

WEB LINKS

1. https://people.ohio.edu/ziff/ART%202650/Space%20Planning%202020.pdf

2. https://studylib.net/doc/25888001/residential-interior-design.--a-guide-to-planning-spaces-...

MJD 15 – BHSC 307 DIETETICS FOR THERAPEUTIC CONDITIONS

Credits: 4 **Hours : 5**

Learning Objectives:

- To enable the students to
- Acquire knowledge on the clinical, biochemical changes and dietary management of various disease
- Gain knowledge in planning and preparation of Therapeutic diets.

Course Outcome:

- Students will be able to Manage to make appropriate dietary modification for various disease conditions, skills and attributes required to meet entry level competency required for a dietician

UNIT I

Therapeutic adaptation of normal diets, principles and classification of therapeutic diets. Meaning and importance of functional foods and food exchange list

Routine hospital diets: Regular diet, light diet, soft diet, fluid diet. Enteral feeding – naso-gastric, naso-jejunum, parenteral feeding-central and peripheral; elemental diet.

Modification of diet and during surgical conditions – pre-operative and post operative conditions.

UNIT II

Cardiovascular diseases: Athrosclerosis, hypertension, hypercholesterolemia, hypertriglyceridemia– Prevalence, pathology, risk factors. Nutrient requirements, modifications of diet and planning menus – high fiber, low fat, sodium restricted diet.

UNIT III

Gastro-Intestinal tract diseases: Etiology, symptoms and diet treatment for diarrhoea and constipation gastritis, peptic ulcer and ulcerative colitis Malabsorption Syndrome: Meaning, types, symptoms and diet treatment for celiac sprue and steatorrhea Liver and gall bladder disease: Etiology, symptoms and diet treatment for jaundice, cirrhosis and hepatitis, Classification, etiology, symptoms, metabolic changes and diet treatment for diabetes mellitus. Use of Glycemic Index.

UNIT IV

Diseases of the kidney: Etiology, symptoms and diet treatment for acute and chronic glomerulonephritis. Nephrotric Syndrome: Etiology, symptoms and diet treatment for uremia. Nephrolithiasis and urolithiasis.

UNIT V

Etiology, symptoms and diet treatment for febrile condition- typhoid, tuberculosis and covid, Burns - Complications and dietary treatment. Risk factors, nutrient requirements, modifications of diet and planning menus in Cancer and AIDS.

TEXTBOOKS

1. Shubangini A Joshi, (1998): Nutrition and Dietetics, Tata Mc Graw Hill Pub. Co. Ltd., New Delhi.

2. Srilakshmi. B, (2005): Dietetics, V Edition, New Age International (P) Ltd, Publishers, Chennai.

3. National Institute of Nutrition, (2011): Dietary Guidelines for Indians – A Manual, Hyderabad.

4. Antia F.P, Clinical Dietetics and Nutrition, Oxford University Press.

REFERENCES

1. Mahan, L.K. and Escott-Stump, S. (2000) Krause‟s Food, Nutrition and Diet Therapy, 10th Ed. W.B. Saunders Company, London.

2. Williams S.R. (1993): Nutrition and Diet Therapy, 7th Ed. Times Mirror / Mosby College Publishing, St. Louis.

3. Shills, M.E, Oslon, J.A, Shike, M and Ross, A.C. (1999): Modern Nutrition in Health and Diseases, 9th Edition.

WEB LINKS

1. https://www.scribd.com/document/489661242/week-12

MJD 16 – BHSC 308 PRINCIPLES OF RESOURCE MANAGEMENT

Credits: 4 **Hours : 5**

Learning Objectives:

To enable the students to

- To create on awareness among the students about management in the family as well as the other system.
- To recognize the importance of wise use of resources in order to achieve goals.
- To understand the family has needs and factors affecting selection and purchases for the family.

Course Outcome:

Adopt efficient homemaking skills with good managerial potentials Practice values, identify goals and set standards in day-to-day living Handle all situations in the family and apply decision making skills

Unit I

Micro and Macro Environment: Meaning and definition of home management. Management process – Planning, controlling and evaluation, factors influencing home management. Qualities of a good manager.

Unit II

Values, goals, standards in relation to the management process. Decision making: Process of decision making, types of decisions, methods of resolving conflicts,

Unit – III

Family Resources Types – Resources – Definition, meaning, classification of resources. Human and Non Human Resources. Wants- Types, Characteristics and factors affecting wants.

Unit IV

Time – Time plan, steps in making time plans, tools in time management, time norm, work unit/workload, peak load, work curves, rest periods, time schedules. Time management process – planning, controlling and evaluating.

Energy: Energy requirements for household activities, planning, controlling and evaluating energy management

Work simplification:Definition,importance,techniques–processchart,operation chart, Mundel‟s classes of changes. Concept of fatigue, types of fatigue, avoidance of fatigue.

Unit V

Money: Definition of family income, types, family budget – definition, importance, types, steps in making budget, factors affecting the budget, advantages of budgeting. Account keeping: importance, types of account systems, methods of handling money, family financial records.

Related experience

1. Preparation of personal expenditure record for one month
2. Preparation of personal expenditure record for one month using note book method.
3. Visit to a bank and a post office to study the types of saving schemes
4. Getting to know the opening and closing of accounts, crediting money and transaction techniques. Usage of ATM, Credit & Debit Cards.

TEXT BOOKS

1. Management for Modern Families: Gross and Crandall.
2. Management in Family Living: Nickel and Dorsey

REFERENCES

1. Mann, M.K., (2004). Home Management for Indian Families. New Delhi: Kalyani Publication.
2. Seetharaman, P, (2005), Introduction to Family Resource Management. New York: CBS Publishers, London.
3. Goel, S., (2016), Management of Resources for Sustainable Development. New Delhi: Orient Blackswan Publication, India.

WEB LINKS

1. https://ncert.nic.in/textbook/pdf/kehe104.pdf
2.https://www.sscasc.in/wp-content/uploads/downloads/BBM/Human-Resource-Management.pdf

Major 17 – BHSC 309 DIETETICS FOR THERAPEUTIC CONDITIONS - PRACTICAL

Credits: 2 **Hours : 3**

PRACTICAL

1. Planning and preparation diets for cardiovascular diseases – Atherosclerosis and hypertension
2. Planning and preparation diets for Gastro-intestinal diseases – Peptic ulcer and constipation
3. Planning and preparation diets for Liver diseases – jaundice and cirrhosis
4. Planning and preparation diets for Diabetes mellitus.
5. Planning and preparing diets for Kidney diseases – nephritis and nephrosis
6. Planning and preparing diets for Typhoid Fever.

RELATED EXPERIENCE

1. Visit to a dietary department of a secondary or tertiary care hospital.

TEXTBOOKS

1. Shubangini A Joshi, (1998): Nutrition and Dietetics, Tata Mc Graw Hill Pub. Co. Ltd., New Delhi.
2. Srilakshmi. B, (2005): Dietetics, V Edition, New Age International (P) Ltd, Publishers, Chennai.
3. National Institute of Nutrition, (2011): Dietary Guidelines for Indians – A Manual, Hyderabad.
4. Antia F.P, Clinical Dietetics and Nutrition, Oxford University Press.

REFERENCES

1. Mahan, L.K. and Escott-Stump, S. (2000) Krause‟s Food, Nutrition and Diet Therapy, 10th Ed. W.B. Saunders Company, London.
2. Williams S.R. (1993): Nutrition and Diet Therapy, 7th Ed. Times Mirror / Mosby College Publishing, St. Louis.
3. Shills, M.E, Oslon, J.A, Shike, M and Ross, A.C. (1999): Modern Nutrition in Health and Diseases, 9th Edition.

WEB LINKS

1. https://www.scribd.com/document/489661242/week-12

Major 18 – BHSC 310 RESIDENTIAL SPACE PLANNING – PRACTICAL

Credits: 2 **Hours : 3**

UNIT I

1. Use of drawing instruments, Types of Lines used in engineering drawing, Lettering, Dimension and Use of Scales

2. Technical drawing - Isometric view of simple furniture – Table, Chair, Sofa, Dining table
3. Furniture arrangement of living room, bedroom, study room, dining and kitchen.
4. Understanding a building and its interiors in terms of plan, elevation and section
5. Floor plans for low-income, middle-income, and high-income group. Site plan and its features - Entry/Exit, Building layout, Pathways, Driveways, Parking lots and Landscape features. Create House plan according to Vastu elements.

TEXT BOOKS

1. Prabhakar, L.V. (1998), Vasthu – The User's Manual, The Avenue Press, Chennai.
2. Despande, R.S. (1974), Build Your Own Home, United Book Corporation, Poona.
3. Riggs, R. (1992), Materials and Components of Interior Design, Prentice Hall of India Pvt.Ltd, New Delhi.

REFERENCE BOOKS

1. Rao, C.H.G. (1995), Plants for Small Houses, Jai Ganesh offset Printers, chennai.
2. Faulkner, R, and Faulkner s. (1987), Inside Today's Home, Rinehart Publishing Company, Newyork.

WEB LINKS

1. https://people.ohio.edu/ziff/ART%202650/Space%20Planning%202020.pdf
2. https://studylib.net/doc/25888001/residential-interior-design.--a-guide-to-planning-spaces-...

Minor courses

B.Sc HOME SCIENCE

BHSC 103 FOOD PRESERVATION

Credit 4 **Hours 5**

Course Objective:

1) To acquire knowledge of food preservation and preservation technique.

2) To know the importance and basic principles of food preservation.

Course Outcomes:

Students will gain knowledge about food preservation technique

UNIT I

Introduction to food preservation, Concept, importance of food preservation. Principles of preservation, microorganisms associated with foods- bacteria, yeast and mold, Importance of bacteria, yeast and molds in foods . Preservation by Using Sugar: Jams and Jellies, salts : Pickeling, Chemicals: Sauce making and Fermentation : Cheese making.

UNIT–II

Food Preservation by Low temperature:

Freezing and Refrigeration: Introduction to refrigeration, cool storage and freezing, definition, principle of freezing, freezing curve, changes occurring during freezing, types of freezing i.e., slow freezing, quick freezing, introduction to thawing, changes during thawing and its effect on food.

UNIT III

Food Preservation by high temperature

Thermal Processing- Commercial heat preservation methods: Sterilization, commercial sterilization, Pasteurization, and blanching.

UNIT– IV

Food Preservation by Moisture control Drying and Dehydration - Definition, drying as a means of preservation, differences between sun drying and dehydration (i.e. mechanical drying), heat and mass transfer, factors affecting rate of drying, normal drying curve, names of types of driers used in the food industry.

UNIT– V

Food Preservation by Irradiation Introduction, units of radiation, kinds of ionizing radiations used in food irradiation, mechanism of action, uses of radiation processing in food industry, concept of cold sterilization

Text Books:

1) PrakashTriveni: Food Preservation, Aadi Publication, Delhi.

2) M.ShafiurRahman:Hand Book of Food Preservation, Marcel Dekker Inc,Newyork.

3) McWillims and Paine: Modern Food Preservation, Surjeet Publication.

References:

1)Fellows,P.andEillsH.1990FoodProcessingTechnology:PrinciplesandPracticals, NewYork

2) NPCS Board, Modern Technology on Food Preservation

Weblink:

1. https://www.masterclass.com/articles/a-guide-to-home-food-preservation-how-to-pickle-can-ferment-dry-and-preserve-at-home
2. https://byjus.com/biology/food-preservation-methods-food-poisoning/

BHSC 104 HOUSEHOLD CLEAING AND PEST CONTROL

Credits: 4 **Hours 5**

Course Objectives:

- To learn the basics of household cleaning.
- To learn basics of pest control
- To learn garbage disposal methods.

Course Outcome:

- The student will be able to clean house, household equipments.
- The student will be able to clean metals.
- The students will be able better equipped to control household pests and manage garbage.

UNIT I

FUNDAMNETALS OF CLEANING: Meaning and importance of cleaning, methods of cleaning, cleaning equipments and their uses, schedules and procedures of cleaning. Cleaning materials (water, detergent, abrasives, acids, alkalis, bleaches, solvents, polishes)and their uses.

UNIT II

CLEANING HOUSEHOLD AND METALS : General cleaning routine for all the rooms(Living room, kitchen, dining room, bed room, bathroom, lavatory, halls, verandas, stairways). Cleaning of metals in home (Brass, copper, enamel, tin, aluminium, steel, silver, gold, ceramic).

UNIT III

HOUSEHOLD EQUIPMENTS -: Classification and selection of household equipments, correct uses of household equipments, care and maintenance of household equipments.

UNIT IV

HOUSEHOLD PESTS: Common household pests and their life cycles. Effective ways to control household pests: Ants, beetles, weevils, bed bugs, cockroaches, fleas, flies, mosquitoes, lice, termites, white ants, rats, mice.

UNIT V

GARBAGE DISPOSAL: Different Methods, Advantages & Disadvantages, vermin-composting-Importance, methods, steps.

Text books

1.Text book of Home Science, Premlata Mullick.Publisher: Kalyani Pub., 1995.

2.David, M.Allen: Accommodation and cleaning service, Vol. 1 & 2. Hutchinson Publishing Group 17-21 Conway street, London.

REFERENCES

1. Gladwell Derek: Practical Maintenance of equipment for hoteliers, Licenses and caterers, Hutchinson and Co. Pvt. Ltd.

2. Hurst Rosemary: Accommodation Management for Hostel and residential establishment.

WEBLINKS

1.https://www.extermpro.com/household-products-that-can-kill-pests/#:~:text=Many%20household%20cleaners%20are%20very,to%20most%20pests%2C%20especially%20spiders

2.https://www.urbancompany.com/blog/5-reasons-to-get-pest-control-done-after-house-cleaning-tips-tricks/

BHSC 105 CHILDREN WITH SPECIAL NEEDS

Credit 4 **Hours 5**

Course Objectives:

- Understand the need special children
- Get acquainted to the concept of community education
- Understand the techniques of imparting parent education programme.

Course Outcome:

Develop educational materials and apply skills to plan, conduct and organize parent education programmes in community

Unit I

Defining disabilities. Models of disability. Classifying disabilities. Social construction of disability, Demography

Unit II

Identification, Assessment and etiology with reference to Locomotor disability, Visual disability, Auditory and speech disability, Intellectual disability, Autism, Learning Disability

Unit III

Families of children with disability, Prevention and management of different disabilities, Educational practices- Special education and inclusion, Policy and laws.

Unit IV

Role of professional, Contribution of professionals in parent and community education, Training programmes for young parents. Evaluation of parent and community education programmes.

Unit-V

Methods of Parent Education and Counseling- Strategies and Management skills for parents to deal with normal children. Children of developmental delays and disabilities. Counselling parents of Children with Special Needs

TEXT BOOKS

- Chopra,G., (2012). Early Detection of Disabilities and persons with disabilities in the community. New Delhi: Engage publications
- Chopra,G., (2012). Stimulating Development of Young Children with Disabilities at Anganwadi and at Home: A Practical Guide. New Delhi: Engage publications.

- Sharma, N. (Ed)(2010). The Socail Ecology of Disability-Technical Series -3Lady Irwin College. Delhi:Academic Excellence
- Mangal, S. K. (2007).Exceptional children: An introduction to special education. New Delhi: Prentice Hall of India

REFERENCES

- Jangira, N.K.(1997) "Special Educational Needs of Children and Young Adults: An Unfinished Agenda," Education and Children with Special Needs: From Segregation toInclusion,Ed. Seamus Hegarty, Mithu Alur, Thousand Oaks: Sage Publications Inc.
- Karna, G. N. (1999). United Nations and rights of disabled persons: A study in Indian perspective. New Delhi: A.P.H. Publishing Corporation.
- Mani, R. (1988). Physically handicapped in India. Delhi: Ashish Publishing House. Mastropieri, M. A., & Scruggs, T. E. (2004). The inclusive classroom: Strategies for effective instruction. NY: Pearson.

WEBLINKS

- **https://egyankosh.ac.in/bitstream/123456789/46913/1/Unit-15.pdf**
- **https://ncert.nic.in/pdf/publication/otherpublications/SpecialNeeds.pdf**

BHSC 106 Advanced Nutrition

Credit 4 **Hours 5**

Course Objectives:

- To familiarize students with changes occurring in the physiology and metabolism of human body as a result of change in altitude, gravity and exercise.
- To provide in-depth knowledge of nutrients requirement and management of diet during space, sea and air travel

Course Outcomes:

Students will be able to:

a) know the importance of nutrition management in exercise and sport performance

b) analyse the coping mechanism of human body during high altitude and sea travel

c) gain knowledge on food modifications to be done during space travel and see travel

Unit I

Exercise Physiology: Concept of energy, work and power; Effect of exercise on muscular, nervous, cardiovascular and respiratory system; Energy metabolism; energy systems during exercise; Components of energy expenditure such as BMR, thermogenic effect of food and physical activity; Energy cost of exercise; Nutrition management during exercise.

UNIT II

Sports Nutrition: Need and scope of sports nutrition; Preparation for competition such as pregame meal, meal during game and post game meal; Concept of carbohydrate loading and the methods of carbohydrate loading; Nutrition management during sports/game; Ergogenic aids in sports.

UNIT III

High Altitude and Space Nutrition: Physiological changes due to high altitude; Acclimatization process; Altitude sickness and related health problems; Nutrient requirements and dietary management of mountaineers. Space Nutrition: Need and scope for space travel; History of space travel; Physiological changes in astronauts; Nutrient requirement and dietary management during space travel.

UNIT IV

Sea and Air Travel Nutrition: Physiological changes in human body during sea and air travel;Psychological preparedness for sea and air travel; Health and nutritional problems encountered during sea and air travel; Nutrient requirements and dietary management during sea and air travel

Unit – V

Armed forces nutrition: The history of Military nutrition, Nutrient Support in Military person, the role of nutrient in injured person, Estimation of energy and protein metabolism in armed person

Text Books

1. Bamji MS, Rao NP, and Reddy V. Text Book of Human Nutrition; Oxford & IBH Publishing Co. Pvt Ltd, 2009.

2. Lakra P, Singh MD. Textbook of Nutrition and Health,, First Ed, 2008; Academic Press

3. Defiance Food Services Integrated Project Food for thought (DV)

References

1. Mahan, L.K. and Ecott-Stump, S. (2000). Krause's Food, Nutrition and Diet Therapy, 10th Edition, W.B. Saunders Ltd.

2. Ira Wolinsky (Ed) (2003): Nutrition in Exercise and Sports, 3rd Edition, CRC Press

3. Gibney ., "Public Health Nutrition",Blackwell Publishing, 2004.

4. Srilakshmi B. "Dietetics" Seventh Edition, New Age International (P) Ltd, 2016

Weblinks

- **tillmed.olympics.com/media/Document%20Library/OlympicOrg/IOC/Who-We-Are/Commissions/Medical-and-Scientific-Commission/Encyclopaedia/2014_Maughan_002.pdf**
- **https://www.nasa.gov/wp-content/uploads/2009/07/143163main_space.food_.and_.nutrition.pdf**

BHSC 107 DESIGN AND DÉCOR OF SURFACES

Credits: 4 **Hours - 5**

Course Objectives:

To enable the students to

- Learn the fundamentals of surface finishes.
- Understand the meaning of wall finishes.
- Gain knowledge on ceiling finishes and its types.
- Know the hard floor and soft floors.
- Study the cost estimation cost and care and maintenance of finishes.

Course Outcome:

- Apply the Fundamentals of interior and exterior treatments based on climate, cost, style and location.
- Compare the types of structural and applied wall finishes.
- Analyze the different treatments of ceiling finish with innovative materials
- Classify the types of Hard, semi-hard and soft floor finishes.
- Apply the various finishes based on laying, cost estimation, care and maintenance.

Unit I

Fundamentals for interior and exterior treatments. Termite proofing, water proofing, acoustics, thermal comfort, fire protection. Plastering and painting. Factors influencing choice of treatments – climate, cost, style of house and location.

Unit II

Wall finishes – Meaning, Structural wall finishes - Tiles, Wood, Terracotta, Marble wash, Metals and stone finishes. Applied wall finishes – Glass, Paint, Wall papers, Murals, Fabric, Metal sheet and Mirror

Unit III

Ceiling Finishes – Definition, types, Treatment – plastering, embossing, fresco, glass, false ceilings and other innovative materials.

Unit IV

Floor finishes – Definition, Hard floors- Terrazzo, wood, mosaic, tiles, marble and granite. Semi hard Floors – Vinyl, linoleum, Rubber and cork. Soft floors – Carpets and Rugs

Unit V

Selection, laying, cost estimation, care and maintenance of wall, Roof/Ceiling and Floor Finishes. Application of various finishes in interior and exterior.

Text books:

1. Ostrow.J. (2001), Painting rooms, Rockport publishers, USA.

2. Clifton.c.etal, (1995), The Complete Home Decorator, Conran octopus Ltd, London.

3. Spancer, H. and Churchill, (1990), Classic English Interiors, Anaya Publishers Ltd, London.

References:

4. Innes,J. (1990), Exterior Detail, Collins and Brown Ltd, London.

5. Love.G. (2000), Insideout, Conron octopus Ltd, London.

Weblinks

- **https://bharatskills.gov.in/pdf/E_Books/IDD_Volume_I_of_II_Theory.pdf**
- **https://core.ac.uk/download/pdf/80710375.pdf**

BHSC 108 FOOD LAWS AND REGULATIONS

Credits: 4 **Hours - 5**

Course Objectives:

1. Get insight on food safety issues in India.
2. Know the National and international Food safety Laws.
3. Understands the safety Management of Foods in household and Food Industries.
4. Learn about the food security management concepts and Practices.

Course Outcome:

1. Understand the introduction to food safety and issues in India
2. Enumerate function of national and international organizational for food safety.
3. Gain knowledge on safety assessment of food additives and supporting laws.
4. Acquire insight on food and nutrition security and globalisation of food system.
5. Learn about the food and agriculture policies.

Unit I

Food Safety - definition of food safety and food spoilage, factors affecting food safety and food spoilage: GMP, GAP, SSOP, GHP, food adulteration - definition, types adulteration in various foods- intentional, incidental, and metallic contaminants.

Unit II

Food Laws and Regulations National Legislation - Essential Commodities Act, Standard of Weight and Measures Act, ISI, Mark of BIS, Agmark, BIS. GRAS and permissible limits for chemical preservatives and legal aspects for γ -irradiations. International Laws and Agreements - FAO, WHO, Codex Alimentarious, WTO, JECFA, APEDA, ISO 22000 series, Recent concerns in food safety: New and Emerging Pathogens. Genetically modified foods / Transgenics / Organic foods. Newer approaches to food safety. PFA, FPO, Food Safety and Standards Bill 2005.

Unit III

Hazard Analysis Critical Control Point (HACCP): principles of HAACP, applications of HACCP Current Food Safety Standards in India, Current Food Safety regulations 2001, Food Safety and Standards Authority of India, objectives of developing food safety standards, enforcement of structure and procedure, role of food analyst, safety analysis, action by designated officer and report of food analyst.

Unit IV

Food and Nutrition Security – hunger and malnutrition, definition and measurement. Factors contribution to food security, food availability. Foreign aids, food ais and development. Global sustainability, environmental impacts of world food system. Government failure and intervention. Globalization of the food system.

Unit V

National Food, Nutrition and Health Policies- Plan of action and programs, Approaches and Strategies for improving nutritional status and health, Programmatic options- their advantages and demerits. feasibility, political support, available resources (human, financial, infrastructural).

Case studies of selected strategies and programs: their rationale and context. How to select interventions from a range of possible options: Health-based interventions, Food-based interventions including fortification and genetic improvement of foods, supplementary feeding, nutrition education for behavior change.

Textbooks

1. Bamji, M.S., Rao, P.N., Reddy, V. (Eds) (1996): Textbook of Human Nutrition, Oxford and IBH Publishing Co. Pvt. Ltd., NewDelhi.
2. Gopalan, C. and Kaur, S. (Eds) (1989): Women and Nutrition in India, Nutrition Foundation of India.

References

3. Gopalan, C. (Ed) (1987): Combating Undernutrition – Basic Issues and Practical Approaches, Nutrition Foundation ofIndia.
4. Achaya, K.T. (Ed) (1984): Interfaces between agriculture nutrition and food science, The United Nations University.

Weblinks

https://www.egyankosh.ac.in/bitstream/123456789/73129/1/Unit-14.pdf

https://www.fssai.gov.in/upload/uploadfiles/files/Chapter1.pdf

BHSC 207 FAMILY DYNAMICS

Credits: 4 **Hours 5**

Course Objectives:

To enable the students to:

- To develop a scientific attitude towards behavioural patterns in individual, family and community life.
- To familiarize with marriage and family life.

Course outcome:

1. Discuss the concept of family dynamics and Identify the macro level changes and its impact on Indian family.
2. Develop the familiarity with the marriage and its related issues and adjustments. Construct the alternate forms of family and identify the reasons and characteristics for their formation
3. Discuss the status , issues and interventions related to family and old age.

UNIT I

Introduction to family Dynamics : Family Dynamics – Meaning, Scope and Significance of family dynamics in contemporary society.

UNIT II

Marriage: Meaning, preparation, functions and types of marriage. Personality development in relation to marriage. Physical, mental health, emotional maturity in relation to marriage. Factors affecting marriage relationship – religion, socio economic status, careers. Role of counselling- Pre marital & marital. Recent trends in marriage.

UNIT III

Family: Meaning, family as the basic social institution, characteristics of family, significance of family, Types, characteristics of family. Parenthood – duties, styles of parenting, child rearing techniques. Small family norm.

UNIT IV

Family crisis: Meaning, causes, types and consequences – Death, divorce, desertion, suicide, prolonged illness, imprisonment, unemployment, dowry, alcoholism, drug addiction, war separation, economic inflation and deflation.

UNIT V

Old Age – Meaning, physical and physiological changes, needs and adjustment of the aged. Problems of the aged- physical, psychological and social.Institution for the elderly. Place of aged in Indian society. Organisations dealing with issues related to Family Dynamics (in brief): International organizations – UNICEF, UNESCO, WHO. National organizations – NIPPCD, NCERT, National commission for Women.

RELATED EXPERIENCE

1. Visit to voluntary organization home/school for special children. 2. Visit to voluntary organization – old Age home 3. Visit to voluntary organization – Orphanage 4. Study on problems of old age. 5. Interactive sessions relating to family and family crisis. 6. Visit to Social welfare Department

TEXTBOOKS

1. Hurlock,E.B., (1995): Developmental Psychology-A life span approach, 5th Edition, McGraw Hill Book Co., New York.

2. RajammalP.Devadas and Jaya N.Muthu,(1996): A text book of Child Development, Macmillan, N.Delhi.

3. Suriakanthi A., (1997): Child Development – An Introduction, KavithaPubslishers.

4. Madan, T.N. and Majumdas, D.N. (1986). An Introduction to Social Anthropology, National Publishing House.

REFERENCES

1. Nanda V.K., (1998): Priniciples of Child Development, Anmol Publications Pvt. Ltd., New Delhi.

2. Berk L.E., (2004): Child Development, Pearson Longman New Delhi.

3. Kakar, Sudhir, (2012) The Inner world: A Psychoanalytical Study of Childhood and Society in India. Oxford University Press, Oxford.

WEBLINKS

1.https://www.ncbi.nlm.nih.gov/books/NBK560487/#:~:text=Family%20dynamics%20refer%20to%20the,of%20relationship%20security%20or%20stress.

2. https://study.com/learn/lesson/family-dynamics-roles-examples.html

BHSC 208 APPLIED ART ON TEXTILES

Credits: 4 **Hours 5**

COURSE OBJECTIVES

- To study about different traditional textile and crafts of India
- To know the care and storage techniques of different traditional textile.
- To study the socio- economic significance of traditional textile and its popularity in modern India.

COURSE OUTCOME

1. Identify the essentials of surface ornamentation.
2. Understand the design enlargement and reduction.
3. Demonstrate the ornamentation of textile fabrics.
4. Exhibit skills in hand embroidery and machine embroidery

Unit I:

Study of Textile Crafts of India: with reference to history, production centers, techniques, designs, colours and products Woven Textiles -Benaras Brocades, Jamdanis and Baluchars of Bengal, Kani Shawls of Kashmir.

Unit II: Study of Textile Crafts of India: with reference to history, production centers, techniques, designs, colours and products Embroidered Textiles-Kanthas of Bengal, Kasuti of Karnataka, Phulkari of Punjab, Chikankari of Uttar Pradesh, Kashida of Kashmir, Kutch of Gujarat embroideries.

Unit III

Study of Textile Crafts of India: with reference to history, production centers, techniques, designs, colours and products

Unit IV

Painted and Printed textiles –Kalamkaris and Pochampalli of Andhra Pradesh, Dabu printing of Rajasthan ,Ajarakh prints of Gujarat . Dyed textiles –Bandhnis of Rajasthan and Gujarat, Ikats- Patola of Gujarat. Bandhas of Orissa

Unit V

Conservation of Traditional Textile • Evolution and Socio- economic significance of Khadi, Handloom and Handicraft sector • Sustenance of Traditional textile crafts

Text Books

- Agarwal, O.P., 1977, Care and Presentation of Museum projects – II, NRL
- Chattopadhaya, K.D., 1995, Handicrafts of India, Wiley Eastern Limited, N Del
- Das, Shukla, 1992, Fabric Art- Heritage of India, Abhinav Publications, N Delhi

References

- Juracek, A. Judy,2000,Soft Surface, Thames & Hudson Ltd.
- Milne D'Arcy Jean,2006, Fabric Left Overs, Octopus Publishing Group Ltd
- Singer Margo,2007, Textile Surface Decoration-Silk & Velvet, A&C Black Ltd

WEBLINKS

1. https://en.wikipedia.org/wiki/Textile_arts
2. https://study.com/academy/lesson/what-is-textile-art.html

BHSC 209 FUNCTIONAL FOODS

Credits: 4 **Hours 5**

Course Objectives:

- Learn the source functional foods
- Understand the role functional foods and in health and diseases.
- Aware of the national and international regulatory aspects of functional foods.

Course outcome:

Student should be able to:

- define functional foods
- understand the chemistry and physiological effects of FFN
- understand the role of selected FFN in health promotion and disease prevention and
- treatment

Unit I

Functional foods - Definition and history- functional foods, traditional foods, nutraceuticals-teleology, designer foods and pharma foods, history of functional foods, components of functional food, stages involved in development of functional foods.

Unit II

Categorization of nutraceuticals - Classification- based on food source, mechanism of action and chemical nature isoprenoid, phenolic substances, fatty acid and structural lipids- terpenoids, saponin, tocotrienol, and simple terpenes, carbohydrates and amino acid-based derivatives, isoflavones.

Unit III

Functional foods of microbial origin - functional foods of microbial origin- human gastrointestinal tracts and its microbiota, functions, probiotic and functions- lactobacillus and bifidobacterium, concepts of probiotics and prebiotics with examples role of probiotic in health and diseases, spirulina as bioactive component.

Unit IV

Functional foods in health and diseases - Sources of functional foods - role of functional foods in health and management of diseases – diabetes mellitus, hypertension, CVD, cancer. concept of dietary supplements, phytochemicals,

phytosterols, omega 3 and 6 fatty acids, dietary fiber, role of non-essential nutrients as dietary supplements, FOSHU foods.

Unit V

Regulatory aspect of functional foods - Regulatory aspects- international and national regulatory aspects of functional foods in India, ICMR guidelines for probiotics, development of biomarkers to indicate the efficacy of functional ingredients, research frontiers in the functional foods.

Text books

1. Bamji (2013), textbook of human nutrition, 3rd addition, oxford & IBH publication Co Pvt ltd. New Delhi.
2. Srilakshmi B (2015), nutrition Science, 4th edition, new age International Pvt Ltd.

References

1. Web G.P (2016), Dietary Supplements and Functional Foods, Blackwell publishing house Ltd, New York.
2. Tamine. A (2015), probiotics Dairy Products, Blackwell publishing house Ltd, United Kingdom.
3. USFDA regulation on functional foods and nutraceuticals

Weblinks

- **https://foodinsight.org/wp-content/uploads/2011/08/Final-Functional-Foods-Backgrounder.pdf**
- **https://krishi.icar.gov.in/jspui/bitstream/123456789/71744/1/FINAL-231-250.pdf**

BHSC 210 Tourism and Hospitality Management

Credits: 4 **Hours 5**

Learning Objectives:

To enable the students to

- To learn about basics of Tourism industry.
- To understand about different sectors of Tourism industry.
- To learn about Tour operations and Travel agency functions.

Course Outcome:

- Will be able to understand basics of Tourism industry
- To understand different sectors of Tourism industry
- To learn the effective planning of Tour operations and Travel agency functions

INTRODUCTION TO TOURISM

a. Meaning , Significance and History of travel & Tourism

b. The Tourism industry its systems, components, infrastructure

c. Types of Tourism (Ecotourism, Heritage tourism, Medical tourism, Educational tourism etc.)

d. Impact of tourism

e. Itinerary planning: Basic Information planning the itinerary Resources for planning itinerary,

f. Calculation of Tour Cost

g.Tourism marketing: Tourism Market segmentation, Designing a Tour Brochure, Emarketing, h. Guidelines for tourist Places of Tourist Interest:

PRACTICALS

1. Learn to read railway TimeTable, flight‟stimetableetconinternet and how to do booking,ticketing.
2. Preparealistforplacesof interestinIndiaandaboardundereachtypeof tourism.
3. Preparealistoftouroperatorsworkingatlocal,NationalandInternational level.
4. Visitvarioustourorganizersandstudytheirsetup,managementand functioning.
5. PreparebrochureforplacesoftouristinterestatlocalandNationallevel.
6. VisitairportstounderstandthefunctioningoflocalandInternationalair travel. Prepare itinerary for tourorganization.
7. VisitHotelstoseevarioustypesofaccommodationfacilities.

8. PrepareabrochuretoexpressDo‟sandDon‟tsforatourist.
9. Visit places of tourist interest; assess the present status for their maintenance, aesthetics,services, security and expectations from the visitors and other suchfactors.
10. Visit to industries, hotels & other organizations. To know the functioning of working management

TEXT BOOKS

1. JagmohanNegi – Professional Hotel Management-3014.
2. Food & Beverage Service by Lillicrap, ELBS-3015.

REFERENCES

3. Front of Operations by Tiwari,Oxford,3015.
4. Fundamentals of Tourism and Hotel Mgmt by Sudheer Andrews,3014.

WEBLINKS

https://www.amity.edu/jaipur/pdf/aur-naac/tourism%20&%20hospitality%20industry%20in%20india.pdf

BHSC 211 COMMUNICATION FOR DEVELOPMENT

Credits: 4 **Hours 5**

COURSE OBJECTIVES:

- Understand key theories around communication, development, culture, behaviour and social change
- Describe key theories around communication, culture, behaviour and social change
- Define key concepts, principles, approaches, methods and techniques
- Recall the role of research, design, development, implementation and monitoring and evaluation to programming

Course Outcome:

- Understand key theories around communication, development, culture, behaviour and social change.
- Describe key theories around communication, culture, behaviour and social change.
- Define key C4D concepts, principles, approaches, methods and techniques.

UNIT I

Concept of Development Communication

a) Concept of development, characteristics of developing countries
b) Measuring development- Indices of measuring development and classification of countries based on development indices
c) Models of Development- Dominant Paradigm, Basic Needs Model, New Paradigm of development
d) Development Communication- concept and genesis, characteristics, differences between communication and Development Communication

UNIT II

Understanding Paradigms of Development

Press theories: Normative: Authoritarian, Libertarian, Social Responsibility, Democratic Participant theory; Sociological: Uses & Gratification, Agenda setting; Two-Step Flow; Psychological; Bullet Theory

UNI III

Success stories in Development Communication, Innovations and trends in Development Communication, Philosophy role and approaches to Development Communication

UNIT IV

Development Communication and Media

Traditional Media: types, characteristics, role in development communication Development reporting- roles and responsibilities of a development reporter, ethics in reporting, specialized skills required and issues in development reporting, ICTs: scope in development communication.

UNIT V

News reporting: definition of news, ingredients and qualities of news, news value, types of news reports, structure of news reports, Radio news, features and commentaries. Radio and development communication. Television: Programs and genres; role in development communication, Cinema: role in development communication.

PRACTICAL

a) Analysis of development indicators - national and international perspective
b) Critical analysis of selected development communication initiatives
c) Analysis of media for development communication
d) Designing media for development communication

TEXT BOOKS

- Narula, Uma (2014). Handbook of Communication- Models, Perspectives, Strategies, Atlantic, New Delhi.
- Sen, Amartya (2000). Development as Freedom, Oxford University Press, New Delhi.
- Servaes, J. (Ed.) (2008). Communication for Development and Social Change, Sage, New Delhi. Sinha,
- Dipankar. (2013), Development Communication- Contexts for the twentyfirst century, Orient BlackSwan, New Delhi.
- Waisbord S. (2001), Family tree of theories, methodologies and strategies In development communication. Rockefeller Foundation, New York.

RECOMMENDED READINGS

- Narula, Uma (1994) Development Communication, New Delhi, Hariand Publication
- Servaes, Jan (2008). Communication for Development and Social Change, New Delhi,
  Sage Publication
- Paulo Mefalopulos. Development Communication Sourcebook- Broadening the boundaries of communication, The World Bank, 2008

WEBLINKS

https://nou.edu.ng/coursewarecontent/DES218.pdf

https://dspmuranchi.ac.in/pdf/Blog/DSPMU%20BJMC%2029042020-converted.pdf

https://egyankosh.ac.in/bitstream/123456789/78567/1/Unit-16.pdf

BHSC 212 NON GOVERNMENTAL ORGANISATION

Credits: 4 **Hours 5**

COURSE OBJECTIVES:

To enable the students to

Understand the role of governments in promoting sustainability

• Present the role of the U.S. Environmental Protection Agency (EPA).

• Explain Agenda 21 and the role of local governments.

• Discuss the history, growth, and funding of nongovernmental organizations (NGOs).

Course Outcome:

• Expand on the role of NGOs in social development, community development, and sustainable development

• gains knowledge on NGOs and business partnerships.

• familiar with the role of NGOs and sustainable consumption.

• Present the five types of environmental NGOs.

Unit I

Concept of NGO Meaning of NGO and GO. Difference between Government Organizations and NGO. Characteristics of good NGO. Structure of NGO. Functions of NGO.

Unit II

Historical Perspective of NGO. Advantages of NGO. Present status of NGO, Contribution of NGO in the Development. Role of Development Communicator in developing NGO

Unit III

Starting of 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.

Unit IV

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.

Unit V

Problems of NGO Training. Recruitment. Funding. Resource Mobilization. Documentation.

Learning Experiences

1. Visit of Local NGO
2. Studying the Annual report of NGOs
3. Studying the ongoing Activities 4. Studying the problems

TEXT BOOKS

1. S.Chandra, Guidelines for NGO Management in India (2003), Published by Kanishka Distributors, New Delhi
2. D. Lewis, Management of Non Governmental Development Organization (2001), Second Edition, Published by Routledge, Newyork.

REFERENCES

3. Abraham, Formation and Management of NGOs (2003), Third Edition, Published by Universal Law Publishing Co. Pvt Ltd., New Delhi.
4. Sundar, P. 2013, Business and Community: The Story of Corporate Social Responsibility in India , New Delhi, Sage Publication.
5. Aggarwal, S.2008, Corporate Social Responsibility in India, Sage Publication Pvt. Ltd

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https://www.sagepub.com/sites/default/files/upm-binaries/52625_ch_9.pdf

https://www.redalyc.org/pdf/364/36413206.pdf

SKILL ENHANCEMENT COURSES

SEC I - FOOD SAFETY AND QUALITY CONTROL

Credits – 3 **Hours - 4**

Learning Objectives

1. To emphasize on the importance of food safety, food quality and food laws and regulations
2. Enables the students in application of basic aspects of public health and food safety and quality surveillance system

Course Outcomes

1. To familiarize students to apply protocol for safe food handling techniques, water and waste management
2. To understand the role of food packaging and the importance of Nutrition labeling.
3. To analyse consequences of food poisoning and infection on the health of individuals
4. To Understand the basic principles food preservation methods

UNIT I

Food safety concept - Significance of food safety in the food processing industry. Risk classification, National and International food regulatory agencies, General food laws and food safety regulations, Nutritional labeling regulation.

UNIT II

Food Safety Programs: Definitions and importance, Good Manufacturing Practices (GMPs), Facility Maintenance, Personal Hygiene, Supplier control, Sanitary Design of Equipment and Infrastructure, Procedures for Raw Material reception, Storage and Finished Product Loading, Sanitation Program. (Sanitation Standard Operating Procedures (SSOPs).

UNIT III

Hazard Analysis and Risk Assessment: Physical hazards (metals, glass, etc), Chemical hazards (food additive toxicology, natural toxins, pesticides, antibiotics, hormones, heavy metals and packaging components), Biological hazards (epidemiology of biological pathogens: virus, bacteria and fungi), Evaluation of the severity of a hazard Controlling Food Hazards . Hazard Analysis Critical Control Point (HACCP) system.

UNIT IV

Food Hygiene Programs: Personal hygiene, Training programs, Infrastructure, Personal habits, Hygiene verification, Water in the food industry, Water sources, Water uses, Water quality, Treatments, Cleaning and sanitation, Cleaning agents, Sanitizing agents, Equipment and systems, Evaluation of sanitation efficacy.

UNIT V

Food safety regulation in India: An overview of Food Regulation in India; Food Laws and Regulations; Structure, organization and duties of regulatory system. Duties and responsibilities of food business operator; Registration and Licensing process and requirements; Labeling of Food Products; Traceability; Import and Export of Foods.

TEXT BOOKS

1. Food Safety and standards Act 2006, Rules 2011, Regulations, 2011, 10th Edition, ILBCO India, Indian Law Book Company, 2013.

2. Early, R. (1995): Guide to Quality Management Systems for the Food Industry, Blackie, Academic and professional, London.

3. Gould, W.A and Gould, R.W. (1998). Total Quality Assurance for the Food Industries, CTI Publications Inc. Baltimore.

4. Pomeraz, Y. and MeLoari, C.E. (1996): Food Analyasis: Theory and Practice, CBS publishers and Distributor, New Delhi.

REFERENCES

5. Bryan, F.L. (1992): Hazard Analysis Critical Control Point Evaluations A Guide to Identifying Hazards and Assessing Risks Associated with Food Preparation and Storage. World Health Organisation, Geneva.

6. Kirk, R.S and Sawyer, R. (1991): Pearson's Composition and Analysis of Foods, Longman Scientific and Technical. 9th Edition, England.

7. FAO (1980): Manuals of Food Quality Control. 2-Additives Contaminants Techniques, Rome.

8. FSSAI, FSIS, EU and FAO website for updates

WEBLINKS

1. https://ncert.nic.in/textbook/pdf/lehe105.pdf
2. https://www.scribd.com/presentation/252269249/Chapter-1-Food-Quality-Control-Programme

SEC II - EARLY CHILDHOOD CARE & EDUCATION

Credits – 3 **Hours - 4**

Learning Objectives

1. To enable a sound foundation for physical and motor development of each child- as per each child's potential
2. To enhance development of pro-social skills, social competence and emotional well being
3. To enable a smooth transition from home to ECCE centre to formal schooling and to enhance scope for overall personality development

Course Outcome

Students will be able to:

a) Apply their knowledge of child development to create supportive, healthy, respectful and challenging learning environments for each child.

b) Use with multi-factorial approach of effective assessment in planning and documenting children's ongoing growth and development.

c) Plan and design, implement, and critically analyze in-depth curriculum through use of academic disciplinary knowledge, to enhance learning outcomes for all children.

UNIT I

Early Childhood Education - Definition, Need and importance, aims and objectives, Outcome of early childhood education on holistic development .

UNIT II

Contributions of Educators and its implications for programme planning; ECCE curriculum and Intervention models and innovative programme and approaches across countries. Programme content, learning environment, Role of teacher, Role of learner and parents; Contemporary theories, practices and policies in ECCE

UNIT III

Role of Parents and community in ECD Programme – Developing sensitivity to cultures and traditions of community, methods and strategies for parents and community; Reasons for involvement and need assessment; effective use of involvement to monitor and enhance programme quality.

UNIT IV

Understanding importance and value of play, theories of play and its implications for planning ECCE programmes.

UNIT V

Issues and concerns related to ECCE/ECD programme – Coverage of populations, reaching the unreached; gender equality and equity; Quality and sustainability; Training of personnel; Accreditation

TEXT BOOKS

1. Sengupta, M. (2009). Early childhood care and education. New Delhi: PHI Learning Pvt. Ltd.

2. Aggarwal, J.C. and Gupta, S. (2007). Early childhood care and education: Principles and practices. India: Shipra Publications.

3. Mohanty, J. and Mohanty, B. (2007). Early childhood care and education. New Delhi: Deep & Deep Publications Pvt. Ltd.

REFERENCES

4. Mukherji, P. and Dryden, L. (Eds.) Foundations of early childhood: Principles and practice. UK: Sage Publishers.

5. Adler, S.and Farrar, C. (1983). A curriculum for developing communication skills in the preschool child. Illinois : Thomas Publication

6. Anderson,P. and Lapp. D. Language skills in elementary education. NY: Mac Millan.

7. Harlan, J. (1984). Science experiences for the early childhood years. Columbus: Charles Merrill

WEBLINKS

1. https://wcd.nic.in/sites/default/files/national_ecce_curr_framework_final_03022014%20%282%29_1.pdf
2. https://ddceutkal.ac.in/Syllabus/MA_Education/Paper_19.pdf

SEC III - APPAREL DESIGNING

Credits – 3 **Hours - 4**

Learning Outcome

- Acquainted with the different textiles and their performances.
- Impart knowledge on different textile finishes.
- To acquaint with proper notion regarding choice of fabric
- Gain the knowledge of fashion industry, suitable clothing for all age groups.

Course Objectives

1. This skill course will provide opportunity to all the candidates to work with local/ regional and famous designers.
2. Skilled candidate could work from home too or they can establish their own boutique.
3. Many standard companies provides lots of opportunity in this area .

Unit I

Introduction To Indian Fashion Industry, The basics of designing, elements of art and principles of design. The process of designing apparels.

Unit II

The principles of clothing construction-importance of drafting, pattern making using flat pattern techniques and draping

Unit III

Apparel designers of India and their styles and design work

Unit IV

Fabric types, fabric preparatory steps for stitching a garment-preshrinking, straightening, layout, pinning, marking, and cutting. handling different fabrics for clothing construction

UNIT V

Fabric selection for children -infants and toddlers Costumes of men and women of different states of India including accessories, The traditional woven textiles of India The traditional dyed and printed textiles of India.

TEXT BOOKS

1. Marsh JT: Textile Finishes

2. Trotman Er: Dyeing and Chemical Technology of Fibers
3. Joseph M: Introduction to Textiles
4. Corbman P Bernard: Textiles- Fiber to Fabric
5. Hollen & Saddler: Introduction to Textile
6. Naik. D. Shailiaja: Traditional Embroideries of India, New Age International Publishers, 1996

REFERENCES

1. J. Hall: The Standard Handbook Of Textiles, Wood Head Publication, 2004 J.E. Smith: Textile Processing -Printing, Dyeing, Abhishek Publishing, 2003
2. Kate Broughton: Textile Dyeing, Rockport Publishers, 1996
3. W.S. Murphy: Textile Finishing, Abhishek Publication, 2000
5. Naik.D. Shailiaja, Jacquie. A. Willson: Surface Designing of Textile Fabrics, New Age International Publishers, 2006
6. Cutting Tailoring and Dress Making: National open School, B-31-B Kailash Colony, New Delhi -1100048.
7. R Bhatia & C Arora (1999), Introduction to Clothing and Textile, Printed by Macho Printery, Raopura, Baroda.
8. Helen J Armstrong, Pattern Making for Fashion Design, Prentice Hall
9. Gerry Cooklin, Introduction to Clothing Manufacture, Blackwell Science, UK, 1991
10. Metric Pattern cutting & Grading by Winfred Aldrich.

WEBLINKS

1. http://heecontent.ups dc.gov.in/Home.aspx
2. https://onlinecourses.swayam2.ac.in/cec21_hs14/preview
3. https://www.skillshare.com/browse/fashion-design?via=class-details-about-page

MULTI DISCIPLINARY COURSES

MLDC I - HERBAL NUTRITION

Credits: 3 Hours 4

Learning Outcomes

Students will be able to

1. gain knowledge on common herbs used as food, their botanical classification and culinary use
2. acquire knowledge on herbs and their drug interactions, toxicity and herbal product regulations

Course Outcomes

1. Acquire more knowledge about the common herbs, their nutritional properties and their regulations
2. Gains more knowledge about the healing properties of common medicinal plants and their use in traditional healthcare systems
3. Utilize these herbs as food and supplements

Unit I

Definition of herb, herbal Nutrition, Selection, identification and authentication of herbs, Processing of herbal raw material. Introduction to Medicinally important Plant parts: Fruits, Leaves, Stem and its modifications (underground and aerial), Roots. Importance of medicinal plants – role in human health care – health and balanced diet.

Unit II

Study of some medicinally important families with reference to systematic position. Diagnostic features and medicinal uses only: Meliaceae, Myrtaceae, Apiaceae, Asclepiadaceae, Solanaceae, Lamiaceae, Euphorbiaceae, Zingiberaceae, Musaceae and Poaceae. Cultivation methods – Crop protection – Harvesting – Storage and Protection – Marketing and utilization - Export of medicinally important (General aspects).

Unit III

Nutritional content of common Indian herbs, Phenolic content, Carotenoids, minerals and essential oils. Significance of common herbs, culinary herbs, cooking methods of herbs – Basil, Cherril, Chimes, Cilantro, Dill, Mint, Oregano, Parsley, Rosemary, Sage, Tarrangon, Thyme, Lemongrass

Unit IV

Plants in day today life – Ocimum sanctum, Centella asiatica, Solanum trilobatum, Cassia auriculata, Aloe vera. Nutritive and medicinal value of some fruits (Guava, Sapota, Orange, Mango, Banana, Lemon, Pomegranate) and vegetables - Greens (Moringa, Solanum nigrum) Cabbage.

Unit V

Common herbal dietary supplements, possible side effects and drug interactions – Black cohosh, Cranberry, Curcumin, Echinacea, Garlic, Ginkobiloba, Gingeng, Goldenseal, Greentea extract, Kava-kava, Milk thistle, Saw pal,etto, St.John's wort, Valerian, Phrmacokineics of herbal supplements.

Text Books:

1. Gokhale, S.S., C.K.Kokate and A.P. Purohit (1994) Pharmacognosy. Nirali Prakashan. Pune.

3. Faroogi, A.A., and B.S. Sreeramu (2004). Cultivation of Medicinal and Aromatic Crops. University Press (India) Pvt. Ltd., Hyderabad.

References:

1. **Mukherjee, P.W. Quality Control of Herbal Drugs: An Approach to Evaluation of Botanicals. Business Horizons Publishers, New Delhi, India, 2002.**

2. Herb Nutrient and drug interactions: Clinical implications and therapeutic strategies (2008) Mitchell Bebel Stargrove Jonathan Treasure Dwight L. McKee, Published by Elsevier - Health Sciences Division

WEBLINKS

1.Natural Medicines Comprehensive Database. Available at http://www. naturaldatabase.com last accessed on April 2, 2013

2. https://www.aafp.org/pubs/afp/issues/2017/0715/p101.html

MLDC II - FUNDAMENTALS OF ADOLESCENT HEALTH

Credits: 3 Hours: 4

Learning Objectives

This paper will enable the students to get acquainted with the physical, mental and social health aspects of adolescents

Course Outcome

1. To understand sexual and reproductive health.
2. Problems of adolescents including nutrition, injuries and violence (including gender based violence), non-communicable diseases, mental health and substance misuse.
3. To create awareness about sex education.
4. Familiarize with national youth policy

UNIT I

Adolescents: Meaning, characteristics. Theories of risk, vulnerability, resilience and behaviour change (in brief). Methods of adolescent study, Problems of Adolescents: Problems of adjustment in the environment; Early marriage, pregnancy & child birth; Violence, Alcohol & drugs; Tobacco use, Eating disorders; Malnutrition- CED & obesity, Juvenile Delinquency, Stress, injuries & road accidents and the like.

UNIT II

Adolescent Health: Meaning, Ecological model for determining the adolescent health and development. Physical and physiological health: Changes in growth pattern, puberty. Anthropometric measurements related to adolescents- Height, Weight, BMI, WHR, WHtR, CED, interpretation of results. Clinical assessment, Common nutritional and psychological disorders& discomforts; Coping mechanisms of stress. Emotional well being, Mental health Issues.

UNIT III

Social and Emotional behaviour of adolescents, causes of emotional intensity, factors influencing emotional life, peer group interaction, sibling interaction, Morality in adolescents and factors influencing adolescent's personality .

UNIT IV

Sex education: Meaning, importance and types of sex education, transmission of HIV and other sexually transmitted diseases-causes and prevention.

UNIT V

Universal health coverage for adolescents: The WHO interventions. Rights of adolescents (National), Indian National Youth Policy.

TEXTBOOKS

1. Chaube, S.P., (2002). Psychology of Adolescents in India, Concept Publishing Co. Ltd., New Delhi

REFERENCES:

1. Bhuvaneswari, K., Child & Adolescent Psychology (2011), CBS Publishers & Distributors Pvt. Ltd., Chennai.

WEBLINKS

1.http://www.who.int/maternal_child_adolescent/topics/adolescence/second-decade/en/

2.http://apps.who.int/iris/bitstream/10665/112750/1/WHO_FWC_MCA_14.05_eng.pdf?ua=1

MLDC III - SUSTAINABLE DEVELOPMENT & FOOD SECURITY

Credits: 3 **Hours 4**

Learning Objectives

1. To understand the environmental, social and economic dimensions of sustainability
2. To develop an action mindset for sustainable development
3. To equip students with necessary knowledge in identifying, conserving and managing world food resources to increase food security

Course outcome

1. How sustainability considerations can actually be embedded within an individual's and community's day to day activities
2. Analyze strategic goals of food security and nutrition, alongside the 2016 sustainable development agenda and global health
3. Examine issues of food security in the context of complex emergencies, fast urbanization, and dynamic changes in people's lifestyles

UNIT I

Introduction to Sustainable Development: Glimpse into History and Current practices – Introduction to SD - its importance, need, impact and implications; definition coined; evolution of SD perspectives (MDGs AND SDGs) over the years. Brief on 17 Sustainable Developmental Goals of 2016.

UNIT II

Ecosystem & Sustainability: Fundamentals of ecology - types of ecosystems & interrelationships, factors influencing sustainability of ecosystems, Introduction to sustainability & its factors, requirements for sustainability: food security and agriculture, sustainability conflicts, a conceptual framework for linking sustainability and sustainable development.

UNIT III

Dimensions to Sustainable Development - society, environment, culture and economy; current challenges - natural, political, socio-economic imbalance; sustainable development initiatives and policies of various countries : global, regional, national, local; needs of present and future generation - political, economic, environmental.

UNIT IV

Food security concept, types of food insecurity, poverty, hunger and malnutrition. Inter-relationship between environment, climate and agricultural (arable agriculture and livestocks) and non-agricultural (marine; fresh water; forests) food production; impact on food security. Adapting to changing climate and management of environment towards food security and sustainability.

UNIT V

Food distribution - The food supply chain (from producers to consumers) - harvesting, transportation, storage, marketing and equitable distribution; impact of changing environment and climate on equitable distribution of food. Changing dietary habits and its impact on food security, climate and environment. Economics and policy of food security; role of institutions (e.g., FAO, NABARD, FCI, NAFED, RRB, APMC)

Text Books

1. Elliott, Jennifer. 2012. An Introduction to Sustainable Development. 4th Ed. Routledge, London.

2. Kerr, Julie. Introduction to energy and climate: Developing a sustainable environment. CRC Press, 2017.

3.Food Insecurity Atlas of Rural India (2001) MS Swaminathan Research Foundation and World Food Programme.

REFERENCES

1. Our Common Journey: A Transition Toward Sustainability. National Academy Press, Washington D.C. Soubbotina, T. P. 2004.

2. Eddington , sadu aman M , Clar M , ern nde , uillou M., Jahn M., Erda L., Mamo T., Van Bo N., Nobre C.A., Scholes R., Sharma R. andWakhungu J. (2012)Achieving Food Security in the Face of Climate Change: Final Report from the Commission on Sustainable Agriculture and Climate Change. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Copenhagen, Denmark,

3. FAO, WFP and IFAD. 2012. The State of Food Insecurity in the World 2012. Economic growth is necessary but not sufficient to accelerate reduction of hunger and malnutrition, Rome, FAO.

4. National Research Council (2012)ASustainability Challenge: Food Security for All, Report of Two Workshops. Washington, DC: The National Academies Press.

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http://www.nap.edu/catalog.php?record_id=13378#toc

http://home.wfp.org/stellent/groups/public/documents/ena/wfp076968.pdf

www.ccafs.cgiar.org/commission.

http://www.fao.org/docrep/016/i3027e/i3027e.pdf