



**CURRICULUM FRAMEWORK FOR UNDER GRADUATE
PROGRAM OF KARNATAKA STATE
IN
HOME SCIENCE**

**(Composite Home Science/Home Science / Nutrition and Dietetics /Clinical
Nutrition and Dietetics/Care and Welfare/Human Development /Family
Resource Management)**

**Submitted to
Vice Chairman
Karnataka State Higher Education Council**

**KARNATAKA STATE HIGHER EDUCATION COUNCIL
30, Prasanna Kumar Block, Bengaluru Central University Campus, Y Ramachandra
Road, Gandhinagara,
Bengaluru, Karnataka - 560009**

2021

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5	B.Sc. Human Development
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COMPOSITION HOME SCIENCE SUBJECT EXPERT COMMITTEE

**Composition of Curriculum – Committee for Home Science
(Composite Home Science/ Home Science/ Nutrition & Dietetics/ Clinical Nutrition & Dietetics/ Care and Welfare/ Human Development/ Family Resource Management)**

S. No.	Name and Organization	Designation
1.	Dr. M. Anuradha Principal, Padmashree Institute of Management and Sciences, Bengaluru	Chairperson
2.	Dr. Komala M. (Human Development) Professor, University of Mysore, Mysuru	Member
3.	Dr. Vijayalakshmi A.H.M. (Human Dept./ Care & Welfare), Associate Professor, Maharani Cluster University, Bengaluru	Member
4.	Dr. Shantha Maria (Home Science) Associate Professor, Mount Carmel College, Bengaluru	Member
5.	Dr. Sangeetha Pandey (Nutrition & Dietetics), Associate Professor Mount Carmel College, Bengaluru	Member
6.	Dr. Marie Kavitha (Human Dept.), Bishop Cotton Women's Christian College, Bengaluru	Member
7.	Dr. Gana Shruthy M.K. Special Officer, KSHEC, Bengaluru	Member - Convenor

**MODEL CURRICULUM CONTENT
FOR
UNDERGRADUATE PROGRAM
IN
COMPOSITE HOME SCIENCE**

PREPARED BY COMPOSITE HOME SCIENCE SUBJECT EXPERT COMMITTEE

Composition of Curriculum - Committee for Composite Home Science

(Composite Home Science/Home Science / Nutrition and Dietetics /Clinical
Nutrition and Dietetics/Care and Welfare/Human Development /Family Resource
Management)

Sl. No.	Name and Organization	Designation
1.	Dr. M. Anuradha Principal, Padmashree Institute of Management and Sciences, Bengaluru	Chairperson
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6.	Dr. Marie Kavitha (Human Dept.), Bishop Cotton Women's Christian College, Bengaluru	Member
7.	Dr. Gana Shruthy M.K Special Officer, KSHEC, Bangalore	Member- Convenor

Sub-committee members of
Composite Home Science

1	Maj. Dr. Shantha Maria Assoc. Professor, Mount Carmel college, Bengaluru
2	Dr. Sundaravalli. A Assoc. Professor, Mount Carmel college, Bengaluru
3	Dr. Rebecca John Assoc. Professor, Maharani Cluster University, Bengaluru
4	Dr. Indiramma Assoc. Professor, Maharani Cluster University, Bengaluru
5	Dr. Srilakshmi Ramireddy Assoc. Professor, Maharani Cluster University, Bengaluru
6	Dr. Vijaya U. Patil Assoc. Professor, Dharwad, Karnataka
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10	Ms. Michelle Vaz Assis. Professor, Mount Carmel college, Bengaluru
11	Ms. Sapna Dinesh Assis. Professor, Mount Carmel college, Bengaluru
12	Ms. Swathi R Assis. Professor, Mount Carmel college, Bengaluru

Karnataka State Higher Education Council
Listing of Courses in Composite Home Science

Sem. No.	Course Category	Course Code	Course Title	Credits Assigned	Instructional hours per week		Duration of Exam (Hrs)	Exam/ Evaluation Pattern (Marks)		
					Theory	Practical		IA	Exam	Total
V	DSC	HSC C25-T	Dietetics	4	3		2.30	40	60	100
		HSC C26-P	Dietetics	2		3	3	25	25	50
		HSC C27-T	Consumer Behaviour & Marketing Management	4	3		2.30	40	60	100
		HSC C28-P	Consumer Behaviour & Marketing Management	2		3	3	25	25	50
		HSC C29-T	Human Development III- Adulthood & Ageing	4	3		2	40	60	100
	DSE	HSC E1-T (Anyone to be chosen)	A. Public Health Nutrition B. Apparel Production & Management C. NGO Management	3	3		2.30	40	60	100
	Vocational	HSC V1-T (Anyone to be chosen)	A. Fundamentals of Pattern Making and Garment Construction B. Communication for Development C. Early Childhood Education - I	3	2	2	2.30	50	50	100
VI	DSC	HSC C30-T	Extension Management	4	3		2.30	40	60	100
		HSC C31-P	Extension Management	2		3	3	25	25	50
		HSC C32-T	Family Studies	4	3		2.30	40	60	100
		HSC C33-P	Family Studies	2		3	3	25	25	50
			HSC C34-T	Fashion Studies	4	3		2.30	40	60
	DSE	HSC E2-T (Anyone to be chosen)	A. Nutritional Biochemistry B. Sustainable Textiles C. Event Management and Hospital Services	3	3		2.30	40	60	100
	Vocational	HSC V2-T (Anyone to be chosen)	A. Food Microbiology and Food Safety Regulations B. Early Childhood Education – II C. Garden and Landscape Designing	3	2	2	2.30	50	50	100

**B.SC. COMPOSITE HOME SCIENCE
SEMESTER V**

Course Title: CHS DSC – C25 Dietetics (Theory)	
Total Contact Hours: 60 Hrs	Course Credits: 4
Formative Assessment Marks: 40 marks	Duration of ESE / Exam: 2.30 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 60 marks

Course Outcomes (COs):

At the end of the course the student should be able to:

1. Understand the role of dietitian and to maintain good nutritional status, correct deficiencies or disease conditions of the patients.
2. Gain knowledge on the principles of diet therapy and designing or formulating different therapeutic diets for various disease conditions.
3. Develop skill to plan and prepare therapeutic diets for prevention of disease conditions.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Understand the role of dietitian and to maintain good nutritional status, correct deficiencies or disease conditions of the patients.	x		x	x		x		x	x			x
Gain knowledge on the principles of diet therapy and designing or formulating different therapeutic diets for various disease conditions	x	x		x			x		x		x	
Develop skill to plan and prepare therapeutic diets for prevention of disease conditions	x		x		x		x	x		x		x

**B.Sc. Composite Home Science
Semester V**

Course Title: CHS DSC – C25 Dietetics (Theory)	
Number of Theory Credits	Number of lecture hours/semester
4	60

CONTENT	60 Hrs
UNIT – 1 CONCEPTS IN DIET THERAPY	20 Hrs
Chapter No. 1: Introduction to Dietetics Growth and Scope of Dietetics, MNT-evidence based, Purposes and Principles of Therapeutic Diets, Modifications of Normal Diets, Classification of the Therapeutic Diets, Role of Dietitians, Characteristics of Dieticians, Diet Counseling, Team Approach to Nutritional Care, Computer Assisted Instructions (CAI) - Diet Planning using computers, Use of Technology in diet counseling.	6
Chapter No. 2: Medical Nutrition Therapy for Fever, Food Allergy Febrile Conditions: Acute and chronic infectious disease-Typhoid, Tuberculosis and HIV and AIDS, Guidelines for management of tuberculosis and infectious diseases. Food Allergy - Definition, Causes, Science and Symptoms, Types of Allergy, Diagnosis, Dietary Modifications	6
Chapter No. 3: Medical Nutrition Therapy in Obesity, Underweight Etiology, Pathophysiology, Clinical symptoms, metabolic alterations, Assessment/Indicators, Lifestyle & Dietary guidelines for the following conditions: Obesity (Bariatric Surgery: types, Management), Underweight	8
UNIT – 2: MEDICAL NUTRITION THERAPY IN GASTROINTESTINAL DISORDERS AND CARDIOVASCULAR DISORDERS	20 Hrs
Chapter No. 4: Gastrointestinal, Liver and Gall bladder disorders Etiology, Pathophysiology, Clinical Symptoms, Assessment/Indicators, Lifestyle & Dietary guidelines for the following conditions: Diarrhea, Dysentery, Constipation, Peptic Ulcer, Celiac Disease, Lactose Intolerance, Crohn's Disease, Ulcerative Colitis, Diverticular disease, Jaundice, Hepatitis, Fatty Liver, Cirrhosis, Hepatic Coma	10
Chapter No. 5: Cardiovascular disorders: Etiology, Pathophysiology, Clinical Symptoms, Lifestyle & Dietary guidelines for the following conditions: Atherosclerosis, Hyperlipidemia, Ischemic Heart Disease, Congestive Heart Failure	10
UNIT -3: MEDICAL NUTRITION THERAPY IN KIDNEY DISORDERS AND DIABETES MELLITUS	20 Hrs
Chapter No. 6: Kidney disorders: Hypertension (DASH Diets), Nephrotic Syndrome, Nephrolithiasis, Acute and Chronic Renal Failure, Dialysis – Principles and Types, Kidney Stones	10

Chapter No. 8: Diabetes Mellitus: Prevalence, Classification, Risk Factors – Clinical Characteristics, Metabolic changes in Diabetes Diagnosis of Diabetes Mellitus: (1) Blood Glucose Levels- a) Glycosuria, b) Ketonuria (2) Oral Glucose Tolerance Test (3) Glycosylated Hemoglobin, Hb A _{1c} Management - Principles of Nutritional Therapy (Type I & Type II) Acute and Chronic Complications of Diabetes, Diet Modifications, Use of Food Exchange Lists, Insulin-Types and Use, Oral Hypoglycemic Agents, Carbohydrate counting, Glycemic Index, Glycemic Load	10
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Pedagogy

Lecture, demonstration, hands on learning through projects, experiments, hospital dietary visits, case studies, workshops.

Assessment

Formative Assessment + Summative assessment= 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title: CHS DSC – C26 Dietetics Lab	
Total Contact Hours: 60 Hrs	Course Credits: 2
Formative Assessment Marks: 25 marks	Duration of ESA / Exam: 3 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 25 marks

Practical Topics - 2 credits

13 - 15 weeks

1. Preparation of Hospital Diets- Modification of diet with respect to texture, consistency and nutrients
2. Modification of Diets in Obesity
3. Modification of Diets in Underweight
4. Diets for Febrile Conditions – TB, Typhoid\Dengue
5. Modification of Diets in Peptic Ulcer, Constipation and Diarrhoea
6. Modifications of Diets in Liver Diseases – Jaundice, Hepatitis and Cirrhosis

7. Diets for Nephritis, renal Failure and renal Calculi, Protein Restricted Diets
8. Diets for Cardiovascular diseases – Sodium Restricted, Fat Controlled
9. Diets for Diabetes Mellitus
10. An Overview/desk review on DASH diet, Mediterranean diet, Paleo diet, FODMAP diet, Keto diet VLCD etc. (As assignment)

Assessment

Formative + Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Internal Assessment	25
Summative Assessment (ESE)	25
Total	25 marks + 25 marks = 50 marks

References

1. Srilakshmi, B. Dietetics, New Age International P. Ltd., New Delhi, 2018.
2. Dietary Guidelines of Indians – A Manual, National Institute of Nutrition, Hyderabad, 2015.
3. Garg, M. Diet, Nutrition and Health, ABD Publishers, 2006.
4. Krause, M.V. and Mahan, L.K. Food, Nutrition and Diet Therapy, 9th Ed., W.B. Saunders Company, Philadelphia, 2019.
5. Maimun Nisha, Diet Planning for Diseases, Kalpaz Publishers, 2016.
6. Dietary Guidelines of Indians – A Manual, National Institute of Nutrition, Hyderabad, 2011.
7. Brown, J (2014). Nutrition now (7thed). Wadsworth, USA, ISBN- 13:978-1-133-93653-4, ISBN10:1-133-93653-9
8. Nelms M, Sucher K (2015). Nutrition Therapy and Pathophysiology. (3rd edition) Cengage Learning, USA. ISBN-13: 978-1305111967, ISBN-10: 1305111966.

**B.Sc. Composite Home Science
Semester V**

Course Title: CHS DSC- C27 Consumer Behavior and Marketing Management (Theory)	
Total Contact Hours: 60 Hrs	Course Credits: 4
Formative Assessment Marks: 40 marks	Duration of ESA / Exam: 2.30 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 60 marks

Course Outcomes (COs):

At the end of the course the student should be able to:

1. Understand the basic concepts of Consumer Behavior and its linkages to marketing.
2. Respond as a responsible consumer based on consumer protection laws and Acts.
3. Understand current marketing trends and systems in consumerism.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1- 5)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Understand the basic concepts of Consumer Behavior and its linkages to marketing	X	X	X			X			X	X		X
Respond as a responsible consumer based on consumer protection laws and Acts.	X		X				X	X	X		X	X
Understand current marketing trends and systems in consumerism.	X	X	X	X		X	X	X	X		X	X

**B.Sc. Composite Home Science
Semester V**

Course – CHS DSC27 Consumer Behavior and Marketing Management	
Number of Theory Credits	Number of lecture hours/semester
4	60

Content	60 Hrs
Unit-I. Consumer Behavior Fundamentals	20 Hrs
Chapter No. 1 Introduction to Consumer behaviour Consumer and consumer dynamics - Meaning and definition; need and scope, Consumer problems Market, Marketing, Demand & Supply– Recent trends in purchasing and marketing - E – Business Marketing Mix Elements, Types of Brands and Value, Brand Management Consumer aids – Advertisement, Branding, Labelling, Packaging, Pricing, Trademarks, Brand Names, Patents, Warranty, Guarantee, Standardization and Quality Control measures. Psychographics Consumer Profiling	10 Hrs
Chapter No. 2 Consumer Buying Behaviour Buying Behavior - Changing Patterns of Consumer Behavior, Factors influencing Consumer behavior, Types of buying motives, changing nature of consumer behaviour to suit modern market and business trends – concepts of C2C, B2B, B2C, C2B etc; Decision making - Types of Decisions and Decision-Making Influencers, Role of Culture in Decision Making, Motivation and Emotion, Social Judgment Theory. Consumer ethics and misbehavior Consumer Psychology	10 Hrs
Unit-II. Consumerism in India	20 Hrs
Chapter No 3: Consumer protection Consumer protection: concept, need and significance Consumer rights and responsibilities in India Unfair consumer practices: adulteration and faulty weights and measures Green Consumerism-Meaning and importance with respect to consumerism, need, consideration in daily consumption and significance, methods of adopting sustainable/eco-friendly lifestyle as green consumers	10 Hrs
Chapter No. 4: Government Organizations Consumer organizations – origin, functioning, role and types Consumer cooperatives – role, history and growth in India Consumer redress: role of consumer forums and consumer courts in safeguarding consumers Basic legislative framework for consumer protection in India- Consumer Protection Act 1986 (COPRA) Alternative redressal mechanisms, Mediation centres	10 Hrs
Unit-III. Marketing Management	20 Hrs

Chapter No. 5: The Marketing Environment Marketing strategy - product, service and pricing decisions - (Branding, Packaging, Advertising, Public Relations, Pricing concepts and setting price, Personal Selling and Sales Promotion) Marketing strategy for Distribution, Channel levels and Channel design Marketing strategy for promotion and product life cycle Strategic Management - Planning, Implementing, and Controlling Marketing Strategies Social Responsibility and Ethics in Marketing Target Markets: Segmentation, Evaluation and Positioning – Significance and relevance Global Markets	10 Hrs
Chapter No. 6: E-Marketing, Digital Media, and Social Networking Change in consumer purchase practices in the digital market – concept of e-commerce, m-commerce, online shopping etc; extended use of plastic currency and card Product Concepts - Developing and Managing Products Marketing Channels and Supply Chain Management - Retail, Direct Marketing and Wholesaling, Integrated Marketing Communications	5 Hrs
Chapter No. 7: Research Methods in Marketing and Consumer Studies Marketing Research: Overview of Marketing Research – Research Design New Product Development Research – Pricing, Advertising Research.	5 Hrs

Pedagogy

Guest lectures, demonstrations, group discussions, case studies, ICT enabled teaching and learning experiences, Internship, flipped classrooms, blended learning, workshops, field visits, active learning, reflective learning, written exercises, collaborative learning, problem solving.

Assessment

Formative Assessment + Summative Assessment = 40 + 60 marks = 100 Marks	
Formative Assessment Occasion / type	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	End Semester Examination = 60
Total	40 marks + 60 marks = 100 marks

Practical

Course Title: CHS DSC C24 Consumer Behavior and Marketing Management Lab	
Total Contact Hours: 60 Hrs	Course Credits: 2
Formative Assessment Marks: 25 marks	Duration of ESA / Exam: 3 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 25 marks

Practical: 2 Credits**13 to 15 weeks**

1. Market your product - Develop a consumer product, design informative and attractive labels with desirable packaging and market the product.
2. Debates on:
3. Consumer credit – merits and demerits
4. Online shopping – advantages and disadvantages
5. Credit and debit card usage – pros and cons
6. Visit to consumer Forums and consumer courts to understand their operational procedures
7. Visit to ISI regional office and learn their nexus of operation
8. Identify various marks of significance like Hall mark, wool mark, silk mark etc and know the complex modes of identity clauses
9. Online Certification Course on Digital Marketing

Formative Assessment + Summative assessment= 25+25=50 marks	
Formative Assessment	Weightage in Marks
Internal Assessment	25
Summative Assessment	Practical
End Semester Examination	25
Total	25 marks + 25 marks = 50 marks

References:

1. Blackwell, R., DSouza, Miniard, P., Engel, J.F., & Rahman, Z., Consumer Behavior (10e), Cengage India.
2. Gangawane, L. V., and Khilare V. C. (2007). Sustainable Environmental Management: Dr Jayshree Deshpande Festschrift Volume. Delhi: Daya (ISBN 13: 9788170354741)
3. Gupta, C.B., and Nair, R.N. (2004). Marketing Management. New Delhi: Sultan Chand and Sons
4. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E., Multi variate Data Analysis (8e), Cengage India
5. Kathiresan, S., and Radha, V. (2004). Marketing. Chennai: Prasanna Publishers
6. Khanna S.R., Hanspal S., Kapoor S., & Awasthi H.K. (2007). Consumer Affairs. New Delhi: Universities Press India Pvt.Ltd.
7. Malhotra, N., and Dash, S. B., Marketing Research: An Applied Orientation, Pearson Education
8. Nair R., and Nair S, R. (2003). Marketing. New Delhi: Sultan Chand and Sons
9. Nair, S (2002). Consumer Behaviour. New Delhi: Sultan Chand and Sons
10. Pattanchetti, C.C., and Reddy (2002). Principles of Marketing. Coimbatore: Rainbow Publishers
11. Sawhney, H.K., & Mital, M. (2007). Family Finance & Consumer Studies. New Delhi: Elite Publishing House Pvt. Ltd.
12. Schiffman, L. G., Kanuk, L. L., and Kumar, R. S., Consumer Behavior, Pearson Education.
13. Seetharaman, P., and Sethi, M. (2001). Consumerism: Strength and Tactics. New Delhi: CBS Publishers.
14. Verma, B.P. (2003). Civil Engineering Drawing, Drawing and House Planning. New

- Delhi: Khanna Publishers
 15. Wagner, S. (2003). Understanding Green Consumer Behaviour. Routledge (ISBN 9780415316194)

**BSC COMPOSITE HOME SCIENCE
 SEMESTER V**

Course Title: CHS DSC- C29 Human Development III – Adulthood and Ageing (THEORY)	
Total Contact Hours: 60 hrs	Course Credits: 4
Formative Assessment Marks: 40 marks	Duration of ESA / Exam: 2.30 hrs
Model Syllabus Authors:	Summative Assessment Marks: 60 marks

Course Outcomes (COs):

At the end of the course the student should be able to:

1. Discuss factors that affect physical, cognitive and socio-emotional development during adulthood and old age.
2. Identify developmental needs of varied groups of adults and elderly across contexts and plan and execute programs of intervention.
3. Evaluate policy recommendations for adults and elderly across contexts.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-5)

Course Outcomes / Program Outcomes	1	2	3	4	5	6	7	8	9	10	11	12
Discuss factors that affect physical, cognitive and socio-emotional development during adulthood and old age.		x						x	x	x	x	
Identify developmental needs of varied groups of adults and elderly across contexts and plan and execute programs of intervention.	x	x	x	x	x	x	x	x		x	x	
Evaluate policy recommendations for adults and elderly across contexts.	x		x	x	x				x			

**BSC COMPOSITE HOME SCIENCE
SEMESTER V**

Course: CHS DSC - C29 Human Development III – Adulthood & Ageing (Theory)	
Number of Theory Credits	Number of lecture hrs / semester
4	60

CONTENT	60 Hrs
UNIT I: OVERVIEW OF ADULTHOOD AND AGING	20 Hrs
Chapter No. 1: Meaning of Adulthood and Aging; Significance of Adulthood and Aging in life span development; Historical perspectives; Contemporary changes (like increase in life expectancy and decrease in death rate); Contextual variations in the experiences (rural-urban, socioeconomic, employed-unemployed, organized-unorganized sector etc.).	4 Hrs
Chapter No. 2: Stages of Adulthood and Aging; Characteristics, Developmental tasks, Needs in the different stages; The phenomenon of aging - biological, psychological, sociological and functional age; optimal aging, normal aging, primary and secondary aging, successful aging.	8 Hrs
Chapter No. 3: Theories of Adult development and Aging (Erikson’s theory, Wisdom theories, Disengagement, Activity, Continuity theory, Vief, Peck); Theories of the Aging process – Sociological, Psychological and Biological.	8 Hrs
UNIT-II DOMAINS OF DEVELOPMENT – ADULTHOOD AND AGING	20 Hrs
Chapter No. 4: Physical development and changes - Cardiovascular and Respiratory systems, Motor performance, Immune system, Brain.	3 Hrs
Chapter No. 5: Cognitive development and changes – Development and Changes in mental abilities - Crystallized and fluid intelligence, Information processing - Speed, Attention, Memory, Problem solving and Creativity.	3 Hrs
Chapter No 6: Socio-emotional development and changes: Life transitions and adjustments during early adulthood - Exploring sexual orientations, stable romantic relationships, alternative life choices, marriage, family life, parenting and caregiving, social mobility; Interpersonal relationships and responsibility challenges in different spheres of life (balancing work and family, socio-cultural responsibilities, health challenges, emotional stresses, financial security); Relationships at midlife - marriage and divorce, changing parent-child relationships, grandparenthood, middle aged children and their aging	7 Hrs

parents. Chapter No 7: Preparation for old age (From work to retirement, emotional, financial, social and familial transitions); Changing relationships in old age – marriage and divorce, widowhood, never-married, childless older adults, siblings, friendships; Dealing with stressful life events, divorce, terminal illness. Death and bereavement.	7 hrs
UNIT-III AGING AND WELL-BEING IN THE 21ST CENTURY	20 Hrs
Chapter No. 8: Demographic profile of elderly in the world and India; Life style changes and holistic health (physical well-being, food choices, yoga and restorative fitness, counseling and therapy, social and interpersonal support systems).	7 Hrs
Chapter No. 9: Overcoming mental health challenges (loneliness, depression, anxiety, dementia, other age related illness and diseases); Overview of Alzheimer, Dementia, Parkinson’s disease; Common abuses among elderly - physical, emotional, psychological, verbal and financial, reporting abuse, Adult Protective Services.	7 Hrs
Chapter No. 10: Technology and aging (use of internet, advances in health and medical treatment, gadgets supporting safety and security of elderly); Leisure time activities and innovative models of developmental intervention; Policy provisions for the elderly - Global and national.	6 Hrs

Pedagogy

Regular lectures, exercises on observation and follow up discussion, case studies, films and documentaries, Journaling (to examine research methods in Adulthood and Aging and researches in the domains)

Formative Assessment + Summative assessment= 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	End Semester Examination = 60
Total	40 marks + 60 marks = 100 marks

References

1. Arnett, J. J., & Jensen, L. A. (2019). Human Development: A cultural approach

- (3rded.). New York: Pearson.
2. Cavanaugh, J., & Blanchard-Fields, F. (2011). Adult development and aging (7thed). Stamford, CT: Cengage Learning.
 3. Kakar, S. (Ed.). (1993). Identity and adulthood. New Delhi: Oxford University Press.
 4. Lamb, S. E. (Ed.). (2012). Aging and the Indian diaspora: Cosmopolitan families in India and abroad. New Delhi: Orient Blackswan.
 5. Menon, U. (2013). Women, well-being and ethics of domesticity in an Odia temple Town. New Delhi: Springer.

**B.Sc. Composite Home Science
Semester V**

Course Title: DSE - E1B – Apparel Production and Management (Theory)	
Total Contact Hours: 45 Hrs	Course Credits: 3
Formative Assessment Marks: 40 marks	Duration of ESA / Exam: 2.30 hrs
Model Syllabus Authors:	Summative Assessment Marks: 60 marks

Course Outcomes: (COs)

The student will be able to:-

1. Understand apparel industry hierarchy. Its processes in relation to sewing techniques.
2. Gain insight into quality standards and quality control methods in apparel merchandising management.
3. Comprehend perspective of India's stand in the global apparel exports.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Understand apparel industry hierarchy. Its processes in relation to sewing techniques.	x	x				x		x		x	x	
Gain insight into quality standards and quality control methods in apparel merchandising management.	x		x		x		x		x			x
Comprehend perspective of India's stand in the global apparel exports.			x	x		x				x		

**B.SC. COMPOSITE HOME SCIENCE
SEMESTER V**

Course Title: DSE-E1A Public Health Nutrition (Theory)	
Total Contact Hours: 45 Hrs	Course Credits: 3
Formative Assessment Marks: 40 marks	Duration of ESA/Exam: 2.30 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 60 marks

Course Outcomes (COs):

At the end of the course the student should be able to:

1. Know basics of public health nutrition and understand need of prioritizing nutritional issues.
2. Assess nutritional health status of community.
3. Understand nutritional programmes and policies and apply ICT in formulation of community nutrition education programme.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Know basics of public health nutrition and understand need of prioritizing nutritional issues.		X		X	X							
Assess nutritional health status of community.				X		X		X				
Understand nutritional programmes and policies and apply ICT in formulation of community nutrition education programme.		X						X		X		

**B.SC. COMPOSITE HOME SCIENCE
SEMESTER V**

Course: DSE-E1A Public Health Nutrition (Theory)	
Number of Theory Credits	Number of lecture hours/semester
3	45

CONTENT	45 Hrs
Unit – 1. Introduction to public health nutrition	15 Hrs
Chapter No. 1. Concept and Scope of Public Health Nutrition, Roles and responsibilities of public health nutritionist, Optimum health, malnutrition (under nutrition, overweight, obesity, micronutrient deficiency), nutrition intervention, nutrition monitoring & surveillance, nutrition education, morbidity, mortality rate.	6 Hrs
Chapter No. 2. Nutrition – A Global Developmental Priority, Economic Consequences of Malnutrition. Strategies to Overcome Malnutrition, Nutrition, and food security.	5 Hrs
Chapter No. 3. Training and Workforce, positions and career settings, food policy hurdles and barriers, future Trends.	4 Hrs
Unit – 2. Nutritional status and assessment	15 Hrs
Chapter No. 4. Introduction, Definition of Nutritional Status, Nutritional assessment-, Anthropometry and other clinical measures, Instruments, Standard of Reference. Dietary Survey.	5 Hrs
Chapter No. 5. Techniques commonly used in public health (weight for age, weight for height, height for age & BMI for age) WHO growth standards, its use, implications, classification to define mild, moderate & severe forms of malnutrition. Specific nutrient Deficiency signs & symptoms (Vitamin A, Iron, Iodine, B complex vitamins), National nutrition policy – National Prophylaxis programmes.	6 Hrs
Chapter No. 6. Nutrition epidemiology principles– types of study designs used in nutritional epidemiology. Measuring Dietary Exposure, their usage and limitations. General considerations in nutritional epidemiologic studies.	4 Hrs
Unit – 3. Public Health and Food Policy	15 Hrs
Chapter No. 7. Policy development and process across governmental levels, The child Nutrition Act, Global Health and Agricultural organizations, Understanding the role of public health policy in influencing the food environment. PHN policy and the community food environment, PHN policy and the consumer food environment. Influencing food systems at the community level.	5 Hrs
Chapter No. 8. Promoting Nutritional health and well – being of community – Connection to national Initiatives (national to Local), Community well-being through Advocacy and Community Food Security across Life stages.	4 Hrs
Chapter No. 9. Skills in assessment of communities, building sustained stakeholder relationships and Engagement, Public health nutrition program Design, Planning and Management. Evidence based programs in program planning, Implementation and evaluation of food and nutrition Interventions. communication strategies and health promotion for youth and the aged.	6 Hrs

Pedagogy

Group discussions, case studies, Transact walk, Hands on experience in field visits, Class tests, survey reports, assignments on a specific topic.

Formative Assessment + Summative Assessment = 40 + 60 marks = 100 Marks	
Formative Assessment Occasion / type	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	End Semester Examination = 60
Total	40 marks + 60 marks = 100 marks

References:

1. Scrimshaw NS, Taylor CE, Gordon JE. Interactions of nutrition and infection. Geneva: WHO; 1968.
2. Gwatkin D, Wilcox J, Wray J. Can health and nutrition interventions make a difference? Washington DC: Overseas Development Council; 1980. (Monograph 13)
3. WHO; UNICEF. The declaration of Alma Ata. International conference on primary health care jointly sponsored by WHO and UNICEF. Geneva: WHO; 1978.
4. WHO; UNICEF. Integrated Management of Childhood Illness, chart booklet. Geneva: WHO; 2008.
5. Maternal and child undernutrition. Lancet. 2008;371(9608):270–273. [7 March 2013]; <http://www.thelancet.com/series/maternal-and-child-undernutrition>. [PubMed]
6. Allen LH, Gillespie SR. What works? A review of the efficacy and effectiveness of nutrition interventions. Geneva and Manila: ADB and ACC/SCN, Manila; 2001. (ACC/SCN Nutrition Policy Paper No. 19; ADB Nutrition and Development Series No. 5)
7. Bhutta ZA, et al. What works? Interventions for maternal and child undernutrition and survival. Lancet. 2008;371:417–440. [PubMed]
8. Victora CG, Habicht JP, Bryce J. Evidence-based public health: moving beyond randomized trials. American Journal of Public Health. 2004;94(3):400–405. [PMC free article] [PubMed]
10. Tontisirin K, Winichagoon P. Community-based programmes: success factors for public nutrition derived from the experience in Thailand. Food and Nutrition Bulletin. 1999;20(3):315–322.
11. Gillespie S, Mason J, Martorell R. How nutrition improves. Geneva: ACC/SCN; 1996. (Nutrition Policy Discussion Paper No. 15)
12. World Bank; UNICEF. Combating malnutrition: time to act. Gillespie S, McLachlan M, Shrimpton R, editors. Washington DC: World Bank; 2003.
13. Mason JB, et al. Community health and nutrition programs. Disease control priorities in developing countries. 2nd edition. Jamison DT, et al., editors. Washington DC: World Bank; 2006. pp. 1063–1074. [PubMed].

**B.Sc. Composite Home Science
Semester V**

Course: DSE-E1B Apparel Production and Management	
Number of Theory Credits	Number of lecture hours/semester
3	45

Number of Theory Credits	No of lecture hrs/semester
3	45
Content	
Unit-I. Introduction to Apparel Industry	15 Hours
Chapter I Terminologies used in garment industry, Industrial standards, Importance of Quality control and quality assurance in the industry, Organizations responsible for standard labels, Basic requirements to start a garment Industry, Machinery used in various departments, Industrial Documentation,.	8 Hrs
Chapter 2 Various departments of a garment industry; Flow of Production in a garment industry, Specifications Sheet -Importance of Specs and its role in maintaining quality, Sourcing, Preproduction Activities.	7 Hrs
Unit-II. Apparel Merchandising and Quality Control	15 Hours
Chapter 3 Apparel Production activities, Scope of Merchandising, Roles and responsibilities of merchandiser, Merchandising types – Fashion merchandising, Export/ Production merchandising, Retail merchandising and Visual Merchandising.	7 Hrs
Chapter 4 Quality Definitions of quality, Quality Control in inspection, CAD, Laying, Cutting, Labelling, Sewing and finishing of the garment, Total Quality Management, Quality assurance labels, Care labelling -Importance of care labels, Care symbols and variations in different countries - Japanese, American, Canadian, Australian, China and Europe Care labels.	8 Hrs
Unit-III Global Scenario and India's stand in Garment exports.	15 Hours
Chapter 5 Globalization and garment exports, Asian garment Industries – Advantages and Disadvantages, Scope for garment manufacturing and exports,	8 Hrs
Chapter 6 An overview and contribution of India Textile and apparel Industry in Indian economy, Textile Sector in India- SWOT analysis	7 Hrs

Pedagogy

Lecture, demonstration, hands on learning through projects, experiments to understand the basic concepts of textiles, industrial visits, collaboration with industries, institutions and

research centres for deeper understanding of the subject.

Formative Assessment + Summative Assessment = 60 + 40 = 100 marks	
Assessment Occasion / type	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60 marks
Total	60 marks + 40 marks = 100 marks

References:

1. Pradip Mehta & S.K.Bhardwaj, (2011) Managing quality in apparel industry', New age Publishers.
2. Sara J. Kadolph., (2007) Quality Assurance for Textiles and Apparel, Fairchild Publications.
3. Claire Shaeffer,(2001)Sewing for Apparel Industry, Prentice Hall Publishers
4. Vasugi,N, (2011). Apparel Merchandising Management, Pranav Publications, Tiruchengodu, Tamilnadu.
5. Mary.G.Wolfe,(2002). The World of Fashion Merchandising, The Good heart – Willcox Company, Inc., Timely Park.
6. Stephens Frings, (2002). Fashion From Concepts to Consumer, Prentice Hall, 7th Edition.
7. SwathiBhalla and Anuraag.S, (2010). Visual merchandising, Tata McGraw hill Education Pvt. Ltd., New Delhi

**B.SC. COMPOSITE HOME SCIENCE
SEMESTER V**

Course Title: DSE-E1C NGO MANAGEMENT (Theory)	
Total Contact Hours: 45 Hrs	Course Credits: 3
Formative Assessment Marks: 40 marks	Duration of ESA/Exam: 2.30 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 60 marks

Course Outcomes (COs):

At the end of the course the student should be able to:

1. Describe concepts, principles, formulation of detailed Project management and reporting.
2. Learn the legal framework for establishing NGO's.
3. Analyze the key issues in Government policies and programmes.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Describe concepts, principles, formulation of detailed Project management and reporting.			x		x		x		x		x	
Learn the legal framework for establishing NGO's.				x		x		x		x		
Analyze the key issues in Government policies and programmes.				x			x		x		x	

**B.SC. COMPOSITE HOME SCIENCE
SEMESTER V**

Title of the Course: DSE -E1C NGO MANAGEMENT	
Number of Theory Credits	Number of lecture hours/semester
3	45

CONTENT	45 Hrs
Unit – 1. Concept of NGOs and Schemes	15 Hrs
Chapter No. 1. NGO, and GO Meaning, Difference between government organization (GO) and Non-government Organization (NGO), Principles of NGO, Characteristics of good NGO, Structure and functions of NGO, Classification of NGO, Origin and development of NGO	5 Hrs
Chapter No. 2. Legal Framework for Establishing NGO Legal – rational structure of Non-profits Trust and Societies with special reference to Trust and Registration Acts Foreign contributions and Regulation Act (FCRA) Statutory obligations, Income Tax Exemption (80-G, 12-A and 35 NC) Rules and Regulations – Resource Mobilization	5 Hrs
Chapter No. 3. Methods and Techniques of fund raising. International, national, and local levels Schemes for NGOs under various Ministries of Government of India NABARD and Human Rights Commission	5 Hrs
Unit – 2. Project Management Systems in NGO	15 Hrs
Chapter No. 4. Project and Management in NGO Concept, objectives, principles and Types of projects	5 Hrs
Chapter No. 5. Project implementation and management Project planning matrix, project cycle management, identification and formulation of Detail project Report (DPR) with reference to action AID	5 Hrs
Chapter No.6. Monitoring and Evaluation – Network Analysis Programme (Project) Management and Review Techniques (PERT), Critical Path Method (CPM), Participatory Rural Appraisal (PRA) – Tools and Techniques, Strength, Weakness, Opportunity and Challenges (SWOC) analysis.	5 Hrs
Unit – 3. NGO Management Policies & Programmes	15 Hrs
Chapter No. 7. NGO Management organizational types and structures, Ngo management competencies. Team Building – concept and significance, Role of effective team building in management of NGO’s activities, People’s participation – concept, meaning and objectives, role of people’s participation in community	5 Hrs

development. Understanding Self, Formulation of Self-concept, Dimensions, Components, Self-Assessment: Analysis & Action plan	5 Hrs
Chapter No. 8. Policies and Programmes Government laws, partnership model, Governing Schemes through ministries/Department / Bodies, government grant-in-aid	5 Hrs
Chapter No. 9. New regulations for NGO & government control National policy on voluntary sector under five-year plans.	

Pedagogy

Group discussions, case studies, Transact walk, Hands on experience in field visits, Class tests, survey reports, assignments on a specific topic.

Formative Assessment + Summative Assessment = 40 + 60 marks = 100 Marks	
Formative Assessment Occasion / type	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	End Semester Examination = 60
Total	40 marks + 60 marks = 100 marks

References:

- Clark John. (1991). Voluntary Organizations: Their Contribution to Development. Earth Scan.
- Dorothea Hilhorbat. (2003). the real world of NGO's, Discourses, Diversity and Development. New Delhi: Zed books Ltd.
- Jain R.B. (1995). NGO's in Development Perspective. New Delhi: Vivek Prakashan
- Joel, S.G.R., and Bhose. (2003). NGO's and Rural Development – Theory and Practice. New Delhi: Concept Publishing Company
- John M. Riley. (2002). Stakeholders in Rural Development – Critical Collaboration in State –NGO Partnerships. New Delhi: Sage Publications
- Julie Fisher. (2003). Govts, NGO's & Political Development of 3rd World: Rawat Publications
- Kalyan Sengupta. (2013). an Easy Guide to NGO. Kolkata: Book Corporation
- Kumar, A. (2003). Social Change through NGO's. New Delhi: Anmol Publishers
- Ravi Shankar Kumar Singh. (2003). Role of NGO's in Developing Countries (Potentials, Constraints and Policies). New Delhi: Deep & Deep Publications (P) Ltd

**B. Sc Composite Home Science
V Semester**

Course Title: Vocational 1A - Fundamentals of Pattern Making and Garment Construction (Full Practical)	
Total Contact Hours: (90 hrs – practical)	Course Credits: 3
Formative Assessment Marks: 40 marks	Duration of ESA / Exam: 2.30 hrs
Model Syllabus Authors:	Summative Assessment Marks: 60 marks

NOTE: This paper will have a practical approach to teaching and learning.

Course Outcomes: (COs)

At the end of the course the student should be able to:-

1. Work skilfully on a sewing machine.
2. Understand fabric layouts, pattern making techniques and draping skills.
3. Sew different parts of garment and finishing.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Work skilfully on a sewing machine.	x	x		x	x		x		x		x	x
Understand fabric layouts, pattern making techniques and draping skills.	x	x				x		x		x		X
Sew different parts of garment and finishing.	x	x			x							x

**B.Sc Composite Home Science
V Semester**

Course: Vocational 1 A- Fundamentals of Pattern Making and Garment Construction (Full Practical)	
Number of Practical Credits	Number of practical hours/semesters
3	90
Number of Practical Credits	No of lecture hrs
3	90
Content	
Unit-I. – Basics of Pattern Making and Garment Construction	30 Hours
Chapter I Tools Used for pattern making and garment construction, Taking accurate Body Measurements.	15 Hrs
Chapter 2 Parts of Sewing machine, Care and maintenance of Sewing machine, Common problems and remedies of a sewing machine.	15 Hrs
Unit-II – Pattern Making and Draping	30 Hours
Chapter 3 Principles of Pattern making, Pattern Alteration, Grading and Layout Pattern alteration - slash and spread Slash and overlapping techniques. Grading of patterns, Fabric Layouts, economical pattern placement and Importance of a specification sheet.	15 Hrs
Chapter 4 Introduction to draping and dress forms, Fabric Preparation for draping on Dress Forms, Draping Bodice Variations, Draping of Skirt and single piece dress.	15 Hrs
Unit-III - Sewing	30 Hrs
Chapter – 5 Sewing Fundamentals - Hand stitches - Permanent stitches, Seam finishes. Types of Darts, tucks, pleats, gathers, ruffles, Neck finishes, plackets and fasteners	10 Hrs
Chapter – 6 Drafting and sewing of different types of sleeves, collars, cuffs and pockets.	10 Hrs
Chapter – 7 Implementation of all the above learnt sewing techniques to make a garment Top/ Kurta/ shirt. Finishing of a garment.	10 Hrs

Note : There is no examination from the university. But marks could be taken towards internal assessment. List of exercises can be based on the chapters.

Practical: 1 Credit

30 hrs / 6 hrs per wk (15 wks)

Pedagogy

Demonstration, hands on learning through projects, experiments to understand the basic concepts of textiles, collaboration with industries, institutions and research centres for deeper understanding of the subject.

Formative Assessment + Summative Assessment = 50 + 50 = 100 marks	
Assessment Occasion / type	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	10 + 10
Summative Assessment	50 Marks
Total	50 marks + 50 marks = 100 marks

References:

1. Julie Cole, Sharon Czacor, (2014). Professional Sewing Techniques for designers, Second Edition, Bloom surry publishing, USA.
2. Lorna Kngh, (2010). Sewing Tips, techniques and trade secrets, St Martin Press, New York.
3. Helen Joseph,(2013). Pattern Making for Fashion Design, Peason Education, New Delhi
4. Karthik.T, Ganesan.P, Gopalakrishnan.D, (2016). Apparel Manufacturing Technology, CRC Press, U.S.
5. Helen JosephArmstrong, (2013).Pattern Making for Fashion Design, Pearson Educations, New Delhi.
6. Jaffe. (2012). Draping fashion design, Sonali Publications, New Delhi.
7. Khurana . K,(2012). Draping and Pattern Making for Fashion Design, Sonali Publications, New Delhi.

**B.SC. COMPOSITE HOME SCIENCE
SEMESTER V**

Course Title: CHS VOC 1B COMMUNICATION FOR DEVELOPMENT (Theory)	
Total Contact Hours: 45 Hrs	Course Credits: 3
Formative Assessment Marks: 40 marks	Duration of ESA/Exam: 2.30 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 60 marks

Course Outcomes (COs):

At the end of the course the student should be able to: -

1. Understand the concept and process of communication for development.
2. Analyze the importance of media in development communication.
3. Use Information Education and Communication (IEC) skills for effective communication.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Understand the concept and process of communication for development.				x	x	x						
Analyze the importance of media in development communication.						x	x	x				
Use Information Education and Communication (IEC) skills for effective communication.								x	x	x		

**B.SC. COMPOSITE HOME SCIENCE
SEMESTER V**

TITLE OF THE COURSE: VOC 1B Communication for Development	
Number of Theory Credits	Number of lecture hours/semester
3	45

CONTENT	45 Hrs
Unit – 1. Development Communication and Approaches	15 Hrs
Chapter No. 1. Development Communication Definition, basic concept, nature, significance and functions and dysfunctions, dynamics of development. Models of Development- Dominant paradigm, Basic Needs model, new paradigm of development. Philosophy and principles of development communication. Methods of Communication.	5 Hrs
Chapter No. 2. Approaches to Development Communication, Meaning, nature, role and characteristics of development communication. Interrelationship between development and development communication	5 Hrs
Chapter No. 3. Diffusion / extension approach, Mass media approach, development support communication approach, institution approach, integrated approach and localized approach. Paradigm of development communication	5 Hrs
*Analyse the models and its application in the implementation of programmes *Apply traditional media and understand effectiveness of the same in women’s issues	
Unit – 2. Media and Communication	15 Hrs
Chapter No. 4. Traditional media – types, characteristic role in development communication. Development reporting – roles and responsibilities of development reporter, ethics in reporting, required skills and issues in development reporting.	5 Hrs
Chapter No. 5. News reporting – definition of news, ingredients and qualities of news, news value, types of news reports, structure of news reports	5 Hrs
Chapter No.6. Radio news, features and commentaries, radio and development communication. Television and cinema – role in development communication ICTS – scope in development communication.	5 Hrs
*Identify various issues in development communication through radio scripts, newspaper stories and reports *Carryout cases studies on successful implementation of communication programmes by using communication skills	
Unit – 3. Social marketing and advertising skills for communication	15 Hrs
Chapter No. 7. Photography - basic principles, preplanning, scripting, shooting, developing, mounting, recording of commentary or dialogue, synchronization of frame with recording. Editing procedure – optical effects, music titles and other accessories.	5 Hrs
	5 Hrs

Chapter No. 8. Recording process, Home videos, radio recording. Video films – essential preliminaries, preplanning – procedure, classification of video programmes, shooting script	5 Hrs
Chapter No. 9. Social marketing – concept of social marketing Innovative strategies in Social marketing. Advertising – definition, types, origin, and role. Types of advertisement and their impacts. Media for advertising. Media planning and advertising	
*Interact with media in organizing programmes on current issues *Apply approaches of social advertising to create awareness on issues related to women	

NOTE *Exercises created on this could be considered for internal assessment

Pedagogy

Guest lectures, demonstrations, group discussions, case studies, ICT enabled teaching and learning experiences, Internship, flipped classrooms, blended learning, workshops, field visits, active learning, reflective learning, written exercises, collaborative learning, problem solving skills.

Assessment

Formative Assessment + Summative assessment= 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:

Capila.A. (2001). Images of Women in the Folk Songs of Garhwal Himalayass. New Delhi:

Concept Publishers

Communication for Development in the Third World Theory and Practices (1991). New Delhi:

Sage Publications

Dhanraj patil. (2010). Communication for rural development in India. New Delhi: Serials Publications

Gupta.D. (2007). Development Communication in Rural Sector. New Delhi:
Mukhopadhyay,
Abhijeet Publication
Joshi Uma. (1997). Textbook of Mass Communication and Media. New Delhi: Anmol
Publications
Joshi Uma. (2001). Understanding Development Communication. New Delhi: Domincent
Publishers
Karun Shetty. (2011). Communication for Social Change. New Delhi: Pacific publication
Nisha,M. (2006). Understanding Extension Education. New Delhi: Kalpay Publications
Reddy, A.A. (2001). Extension Education. Bapatla: Sri Lakshmi Press
Singh, U.K., and Nayak A.K. (2007). Extension Education. New Delhi: Common Wealth
Publishers

**BSC COMPOSITE HOME SCIENCE
SEMESTER V**

Course Title: CHS VOC 1C EARLY CHILDHOOD EDUCATION - I	
Total Contact Hours: 45 hrs	Course Credits: 3
Formative Assessment Marks: 40 marks	Duration of ESA / Exam: 2.30 hrs
Model Syllabus Authors:	Summative Assessment Marks: 60 marks

Note: Students are encouraged to take early childhood education II in the next semester.

Course Outcomes (COs):

At the end of the course the student should be able to:

1. Explain the importance of early childhood years and significance.
2. Analyze curriculum models and pedagogical approaches in early childhood education.
3. Comprehend developmentally appropriate programs for young children.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-5)

Course Outcomes / Program Outcomes	1	2	3	4	5	6	7	8	9	10	11	12
Explain the importance of early childhood years and significance.		x		x	x			x	x		x	
Analyze curriculum models and pedagogical approaches in early childhood education.	x		x	x	x	x		x				
Comprehend developmentally appropriate programs for young children.	x	x		x	x		x		x		x	

**BSC COMPOSITE HOME SCIENCE
SEMESTER V**

Course: CHS DSC VOC 1C Early Childhood Education I	
Number of Theory Credits	Number of lecture hrs / semester
3	45

CONTENT	30 Hrs
UNIT I: INTRODUCTION TO EARLY CHILDHOOD EDUCATION	8 Hrs
Chapter No.1: Introduction: Concept, Meaning, Scope and Significance of ECE / ECCE Perspectives in Early years (3 to 5 yrs). Objectives of Early Childhood Education; Curriculum models; Overview of planning and transaction, child, and program assessment.	2 Hrs
	3 Hrs
Chapter No. 2: The preschool years foundations for learning and living:- History/origin/genesis of preschool education; Growing popularity of preschools, purpose of preschool; Role of the facilitator/teacher in a preschool environment.	3 Hrs
Unit 2: PEDAGOGY AND LEARNING MATERIALS IN ECE	14 Hrs
Chapter No. 3: Principles of Pedagogy; Definition and concept of curriculum; Curriculum approaches – Theme based, play based, activity based, project or enquiry-based approach; Developmentally Appropriate Practice (DAP); Components and essential features of developmentally appropriate ECCE curriculum.	4 Hrs
Chapter No. 4: Knowledge of Developmentally Appropriate materials; Role of material in an ECE program in the domains of child development.	6 Hrs
Chapter No. 5: Foundational skills – Early literacy and numeracy	4 Hrs
Unit – 3 CREATING A SUPPORTIVE ECO-SYSTEM	8 Hrs
Chapter No. 7: Enabling and Empowering Teachers; Family and Community Awareness and Partnership: A social capital; Safety and Security	6 Hrs
Chapter No. 8: Addressing Developmental Delays	2 Hrs

ASSESSMENT

Formative Assessment + Summative assessment= 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15

Test 2	15
Assignment + Project	5 + 5
Summative Assessment	End Semester Examination = 60
Total	40 marks + 60 marks = 100 marks

Pedagogy

Regular lectures, demonstrations, Exercises on observation and follow up with group discussions, case studies, ICT enabled teaching and learning experiences in terms of video lessons.

NOTE: Journal writing for each unit. Marks could be considered towards internal assessment. Internship in an anganwadi / private preschool. There is no examination from the university. But marks could be taken towards internal assessment.

Practical: 1 Credit

30 hrs / 2 hrs per wk (15 wks)

Suggested Exercises:

1. Observation of early childhood programs at government and non-governmental institutions.
2. List the activities for each domain to promote all round development in young children.
3. Plan and record activities and methods of playful interactions to foster development in children.
4. Preparation of worksheets for early numeracy and literacy.
5. Prepare a developmentally appropriate plan.
6. Interviews with teachers and parents.
7. Planning and transacting a parent teacher meeting.

References:

1. Little Steps Readiness for reading writing and number work, a manual for preschool teachers, Romila Soni, NCERT
2. Early Childhood Education - A Trainer's Hand Book , Vinithakaul, Romilabhatnagar, NCERT
3. Exceptional Children an introductory survey to special children , William L Heward and Michael Orlansky, Charles E Merrill publishing company , London
4. Adapting Early Childhood Curricula For Children In Inclusive Setting , Ruth E Cook, Annette Tessier, M Diane Klein , Fourth edition Prentice Hall, Ohio
5. Early Childhood Education Today, Gorge S Morrison, Florida International University, Merrill, Prentice Hall Ohio
6. National Curriculum Framework for Foundational Stage 2022

**B.SC. COMPOSITE HOME SCIENCE
SEMESTER VI**

Course Title: CHS DSC – C30 Extension Management (Theory)	
Total Contact Hours: 60 Hrs	Course Credits: 4
Formative Assessment Marks: 40 marks	Duration of ESA/Exam: 2.30 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 60 marks

Course Outcomes (COs):

At the end of the course the student should be able to:-

1. Understand concept of Extension Management & purpose of planning and organizing.
2. Focus on requirement of effective staffing for successful Management.
3. Analyse the significance of effective project controlling.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Understand concept of Extension Management & purpose of planning and organizing.	x	x	x				x	x	x			
Focus on requirement of effective staffing for successful Management.				x	x	x				x	x	x
Analyse the significance of effective project controlling.	x	x	x				x	x	x			

**B.SC. COMPOSITE HOME SCIENCE
SEMESTER VI**

Course Title: CHS DSC – C30 Extension Management (Theory)	
Number of Theory Credits	Number of lecture hours/semester
4	60

CONTENT	60 Hrs
Unit – 1. Concept of Extension Management	20 Hrs
Chapter No. 1. Extension Management, Meaning of management, management function, basic elements in extension management, characteristics of extension management.	6 Hrs
Chapter No. 2. Concept, need, nature, objectives, and functions of extension. Informal, formal and non-formal education, and differences between formal and extension education.	6 Hrs
Chapter No. 3. Extension planning, definition, requirement of effective planning, levels of planning, elements of planning, contingency planning.	8 Hrs
Unit – 2. Extension Organisation & Co-ordination	20 Hrs
Chapter No. 4. Organizing, Definition, requirements of effective organizing, line and staff function, Span of management, scalar principle, delegation of authority, use of committee.	6 Hrs
Chapter No. 5. Extension Co-ordination, involvement of organizations at the local level input management, common mistakes in organization, Staffing, Definition, requirements of effective staffing, training for professional development, training strategy.	6 Hrs
Chapter No. 6. Training Methods – lecture, group discussion, seminar, panel discussion, colloquium, symposium, workshop, syndicate method, case study role playing, brain storming, buzzy session, sensitivity training, interactive video, video conferencing, performance appraisal, stress in managing, organizational conflict, grievances in organizations.	8 Hrs
Unit – 3. Monitoring and Evaluation	20 Hrs
Chapter No. 7. Controlling, Definition, requirements of effective controlling,	6 Hrs
Chapter No. 8. monitoring and evaluation, supervision, budgeting and auditing, reporting	6 Hrs
Chapter No. 9. Change agent success, change agent problems a study in organizational management, reaching the weaker sections, administration of rural credit.	8 Hrs

Pedagogy

Lecture, demonstration, hands on learning through projects, field visits, Trainings, case studies, workshops.

Assessment

Formative Assessment + Summative assessment= 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title: CHS DSC – C27 Extension Management Lab	
Total Contact Hours: 60 Hrs	Course Credits: 2
Formative Assessment Marks: 25 marks	Duration of ESA / Exam: 3 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 25 marks

Practical Topics - 2 credits

13 - 15 weeks

PRACTICAL

1. Visit an organization to know effective staffing requirement.
2. Interact with staff organization and understand their functions.
3. Identify the change agent problems and suggest ways to solve the same.
4. Identify the ways to handle the grievances.
5. Select a topic related to women and issue faced by them, carry out a case study and describe ways to assess them.

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Internal Assessment	25
Summative Assessment (ESE)	25
Total	25 marks + 25 marks = 50 marks

References:

- Banerjee,S. (1981). Principles and Practice of Management. New Delhi:Oxford and IBH Publishing company
- Basu, C.R. (1989). Organisation and Management. New Delhi:SChandand Co Ltd.
- Burton, Gene and HanabThakar. (1997). Management Today.New Delhi: Tata McGraw Hill Publishing Company
- Chandan, J.S. (1997). Management – Concepts and Strategies. New Delhi: Vikas Publishing House
- Koontz and Heinz Weihrich. (1990). Essentials of Management. New Delhi: Me Graw – Hill.
- Prasad,M.L. (1999). Principles and Practice of Management. New Delhi:Sultan Chand and Sons.
- Ramasamy, T. (1985).Principles of Management, Mumbai: Himalaya Publishing House.
- Rao,V.S.P., and Narayana P.S. (1987). Principles and Practice of Management. New Delhi: Konark Publishers Private Limited
- Ray,G.L. (2015). Extension Communication and Management. Ludhiana: Kalyan publications.
- Tripathi P.C., and Reddy,P.N. (1993). Principles of Management. New Delhi: Tata McGraw Hill

**B.SC. COMPOSITE HOME SCIENCE
SEMESTER VI**

Course Title: CHS DSC C32 Family Studies (Theory)	
Total Contact Hours: 60 Hrs	Course Credits: 4
Formative Assessment Marks: 40 marks	Duration of ESE/Exam: 2.30 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 60 marks

Course Outcomes (COs):

At the end of the course the student should be able to:-

1. Understand interpersonal relationships and family dynamics in contemporary India.
2. Describe theoretical perspectives in understanding interpersonal relationships and family dynamics.
3. Formulate strategies for developing positive dynamics in different relationships and managing conflict.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Understand interpersonal relationships and family dynamics in contemporary India.			x	x		x		x			x	
Describe theoretical perspectives in understanding interpersonal relationships and family dynamics.									x			
Formulate strategies for developing positive dynamics in different relationships and managing conflict	x		x	x	x					x	x	

**B.SC. COMPOSITE HOME SCIENCE
SEMESTER VI**

Title of the Course: CHS DSC C32 Family Studies (Theory)	
Number of Theory Credits	Number of lecture hours/semester
4	60

CONTENT	60 Hrs
UNIT-I OVERVIEW OF MARRIAGE AND FAMILY	18 Hrs
Chapter No. 1 Overview: Definitions: Marriage, Family; Types; Functions of Marriage and Family; Trends in Marriage and Family.	6 Hrs
Chapter No. 2: Scientific Perspective: Theories of marriage and family; Family research.	6 Hrs
Chapter No. 3: Building strong families: Communication and conflict resolution, Marital strength, family strength family cohesion and adaptability; Olson Circumplex Model to understand couple and family relationships.	6 Hrs
UNIT II-FAMILY AND FAMILY LIFE CYCLE	22 Hrs
Chapter No. 4: Family life cycle; Pairing: Sternberg's Theory of Love, romantic relationships, marriage, cohabitation; Singlehood.	6 Hrs
Chapter No. 5: Kinds of marriage and family: Beginning marriage, youthful marriage, later-life marriages, enduring marriages; Single parent families, remarriage, blended families.	6 Hrs
Chapter 6: Parenthood and Parenting: Transition to Parenthood; Styles of parenting; Rights and responsibilities in parenting; Parenting changes across the life span	5 Hrs
	5 Hrs
Chapter No 7: Family Health: Family health and wellbeing; Stress and family; Healthcare in crisis, family care giving	
UNIT-III CHALLENGES IN MARRIAGE AND FAMILY	20 Hrs
Chapter No. 8: Family Violence and Abuse: Theories and perspectives of violence; Types of Violence; Etiology of violence; Cycle of violence; Legal support.	7 Hrs
Chapter No. 9: Separation and Divorce: Concept of Separation and Divorce; Factors influencing divorce, Divorce process, Consequences of divorce on spouses and children, child custody and divorce mitigation.	8 Hrs
Chapter 10: Changes in Family ideologies: Changing trends in marriage and family and implications on the individual and society.	5 Hrs

Assessment

Formative Assessment + Summative assessment= 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Pedagogy

Learning Experiences through Regular lectures, exercises on observation and follow up discussion, case studies, films and documentaries, Evaluation, Class test, presentation and one essay/take home based on observations

Course Title: CHS DSC – C29 Family Studies Lab	
Total Contact Hours: 60 Hrs	Course Credits: 2
Formative Assessment Marks: 25 marks	Duration of ESA / Exam: 3 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 25 marks

Practical: 2 Credits

13-15 weeks

1. Mapping Family Relationship.
2. Mate Selection Study among marriage probables
3. Case Study / Visuals to understand Conflicts
4. Assessing Family Wellbeing
5. Literature Review on Violence
6. Mediation Centre Visit – Family Court
7. Studying the effect of Separation on children and the single parent (away due to profession/ due to care of elderly parents/ due to illness of any one member in the first circle of blood relatives, due to death, due to divorce)

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Internal Assessment	25
Summative Assessment (ESE)	25
Total	25 marks + 25 marks = 50 marks

References

1. The Indian Family in Transition - Reading Literacy and Cultural Texts; Editors Sanjukta Dasgupta, MalashriLal, Sage Publication.
2. Family Stress Management, A Contextual Approach, 3rd edition, Pauline Boss, Chalandra and Jay A, Sage Publication.
3. Human Development and Family – An Addenda On Research And Policy Studies in India, T.S. Saraswathi ,Sage Publications, 1993.
4. The Family in India, Structure and Practice, edited by Tulsi Patel, Sage Publication, New Delhi.
5. Nurturing Families Around the World, Building Culture and Peace, Edited by Catherine Bernard, and John.J.Shea.
6. The Marriage And Family Experience, sixth edition, Bryan Strong, Christine DeVault, West Publishing Company, NewYork.

**B.Sc. Composite Home Science
Semester VI**

Course Title: CHS DSC- C34 Fashion Studies (Theory)	
Total Contact Hours: 60 Hrs	Course Credits: 4
Formative Assessment Marks: 40 Marks	Duration of ESA / Exam: 2.30 hrs
Model Syllabus Authors:	Summative Assessment Marks: 60 marks

Course Outcomes: (COs)

At the end of the course student should be able to: -

1. Comprehend the processes and develop the ability to apply in fashion design.
2. Develop the ability for fashion styling, communication, and design concepts.
3. Understand Indian and global markets in merchandising.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Comprehend the processes and develop the ability to apply in fashion design.	x		x			x		x	x			x
Develop the ability for fashion styling, communication, and design concepts.	x	x		x			x		x		x	
Understand Indian and global markets in merchandising.	x				x		x	x		x		x

**B.Sc. Composite Home Science
VI Semester**

Course: CHS DSC 34 Fashion Studies (Theory)	
Number of Theory Credits	Number of lecture hrs / semester
4	60
Number of Theory Credits	No of lecture hrs/semester
4	60
Content	60 hours
Unit-I. Fashion Terminologies and Theories	15 Hours
Chapter I History of Fashion, Evolution of Fashion, Terminology of Fashion Principles of Fashion movement - Theory of Clothing Origin - Fashion cycle - Theories of fashion - Theories of fashion adoption - Principles of Fashion - International Fashion centres.	8 Hrs
Chapter 2 Fashion cycle – Meaning, stages and types. Fashion forecasting - Research Process in Forecasting, Forecasting the fashion with reference to Colour, style, season, different patterns, different fabric swatches, accessories on different themes	7 Hrs
Unit-II. Fashion Design and Communication	25 Hours
Chapter 3 Application of designing concepts - 8, 10 and 12 head figures, figure types – Garment designing based of figure types, Fashion Illustrations and variations, Factors affecting Fashion- Demographics, Geographic, Psychographics & Behavioural, Economic, Social, Environment, Psychological and cultural influence on clothing.	10 Hrs
Chapter 4 Fashion Accessories and styling – Hair styling, makeup its significance with various looks for different garment styles like Formal, Casual, Ethnic / Bridal, Sports. Styling elements: model, accessories, background theme. Styling and the final Visual display for the final photo shoot. Styling for Magazine, Advertising, Styling for Fashion Photography.	10 Hrs
Chapter 5 Fashion Journalism, Graphic Design for Fashion, Fashion Broadcasting and Fashion Films, Fashion Styling, Fashion Photography, Fashion Public Relations, Fashion Marketing & Consumer Behaviour	5 Hrs
Unit-III Fashion Merchandising and Management	20 Hours
Chapter – 6 Retail Fashion Promotion, promotion levels, Marketing Channels, Planning and Direction, Retail Advertising, Merchandising techniques, components of merchandising activities – functions of merchandiser.	5 Hrs
Chapter – 7 Visual Merchandising Importance, Store interior, Window displays, Display Techniques, Mannequin draping and decorative displays. Colour, Lighting – Light planning and Types. Fixtures – Retail and Apparel Fixtures. Store exterior, display settings, types of fashion shows.	7 Hrs

Chapter – 8 Fashion Market Introduction to Fashion Industry, Indian and Global Fashion Market, Levels of fashion industry- couture, ready to wear, mass production. Organizational set-up of fashion industry, fashion industry- departments and their functioning. Indian Fashion Industry, origin, presents scenario and future scope. Overview of global and Indian apparel industry, History and its development in recent years.	8 Hrs
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Pedagogy

Lecture, demonstration, hands on learning through projects, experiments to understand the basic concepts of textiles, industrial visits, collaboration with industries, institutions and research centres for deeper understanding of the subject.

Assessment

Formative Assessment + Summative assessment= 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Note: There is no university examination. Internal marks can be considered based on any of the following exercises listed below.

FASHION STUDIES EXERCISE TOPICS

1 credit/2hrs/wk

13 - 15 weeks

Basic sketching Conversion of stick figure to muscle figure and garment incorporation. Sketching of croquis with different hand and leg poses
Sketching of garment details on croquis Sketching of Sleeves, collars, yokes and pockets. Sketching of skirts and pants. With textured Rendering of various materials - Silk, denim, cotton, checked, plaid, velvets, satin.
Sketching of accessories for 3 occasions - hair styles/accessories, handbags, Foot wear, Jewellery.
Fashion portfolio Development –Theme board, mood board, colour board, fabric board, flat presentation, story board and accessory board. Construction of theme based garment and presenting on ramp

Formative Assessment + Summative Assessment = 40 + 60 = 100 marks	
Assessment Occasion / type	Weightage in Marks
Formative Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	ESE - 60 marks
Total	40 marks + 60 marks = 100 marks

References:

1. Veronica Kemsy, (2017). Fashion Illustration Gowns and Dresses Inspiration, Design Media Publishing Limited, UK.
2. SwathiBhalla and Anuraag.S,(2010). Visual merchandising, Tata McGraw Hill Education Pvt. Ltd., New Delhi.
3. Navneet Kaur, (2010). Comdex fashion design, Vol III, Designing and showcasing a fashion collection, Dream Tech Press, New Delhi
4. Tiziana Paci, (2018). Colour in Fashion Illustration: Drawing and Painting Techniques, Hoaki Books SL, Italy.
5. Fashion Forecasting Perna Rita Fairchild Books, New York 1992
6. Style wise : A practical guide to Becoming a Fashion Stylist, Shannon Burns, Fairchild Books, 2013
7. Dorling Kindersley (2012). Fashion, The Ultimate Book of Costume and Style, Published by Dorling Kindersley Limited; London.
8. Dimitri Koumbis, (2020) Fashion Retailing: From Managing to Merchandising, Bloomsbury Publishing, New Delhi.

**B. Sc Composite Home Science
Semester VI**

Course Title: DSE – E2A Nutritional Biochemistry (Theory)	
Total Contact Hours: 45Hrs	Course Credits: 3
Formative Assessment Marks: 40 marks	Duration of ESE/Exam: 2.30 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 60 marks

Course Outcomes (COs):

At the end of the course the student should be able to:-

1. Comprehend basic concepts of biochemistry including structure, functions and metabolism of carbohydrates, proteins, and lipids.
2. Understand the functions, mode of action of enzymes and nucleic acids.
3. Infer errors of metabolism with reference to macronutrients.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes(POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Comprehend basic concepts of biochemistry including structure, functions and metabolism of carbohydrates, proteins, and lipids.		X	X			X			X	X		X
Understand the functions, mode of action of enzymes and nucleic acids.		x	X	x			X		X	x	X	X
Infer errors of metabolism with reference to macronutrients.			X	x		X			X	X		

**B. Sc Composite Home Science
Semester VI**

Course: DSE – E2A Nutritional Biochemistry (Theory)	
Number of Theory Credits	Number of lecture hours/semester
3	45

CONTENT	45 Hrs
UNIT -1 :CHEMISTRY AND NUTRITIONAL IMPORTANCE OF CARBOHYDRATES AND PROTEINS	15 Hrs
Chapter No.1:Introduction to biochemistry and relation to nutrition Carbohydrates- Definition, structural classification, metabolism of glucose- Glycolysis, krebs cycle, gluconeogenesis, glycogenesis, glycogenolysis, blood glucose maintenance and its regulation.	7
Chapter No.2: Proteins Structure and Classification of amino acids, primary, secondary and tertiary structure of proteins, hydrolysis of proteins, denaturation, precipitation and coagulation, deamination, transamination, decarboxylation- urea cycle and metabolic disorders of urea cycle, nitrogen balance	8
UNIT-2 : CHEMISTRY AND NUTRITIONAL IMPORTANCE OF LIPIDS AND NUCLEIC ACIDS	15 Hrs
Chapter No.3: Lipids Chemical composition of fats, metabolism -beta oxidation of fatty acids & bio-synthesis of fatty acids - ketone bodies, Ketogenesis and ketosis, cholesterol- biosynthesis, importance of lipo protein	8
Chapter No.4: Nucleic acids Definition, Components, Protein biosynthesis, nucleotides, Nucleosides, structure and functions of DNA and RNA, types of RNA	7
UNIT-3 : CHEMISTRY AND NUTRITIONAL IMPORTANCE OF ENZYMES; METABOLIC ERRORS	15 Hrs
Chapter No.5: Enzymes Classification, factors affecting enzyme activity, mechanism of enzyme action, enzyme inhibition, coenzymes and prosthetic group, isoenzymes, diagnostic value of clinical enzymes.	6

Chapter No.6:Metabolic errors Elementary knowledge on inborn errors of metabolism with reference to carbohydrate – Fructosuria, Pentosuria, Galactosemia and Glycogen storage disease. Protein – albinism, phenylketonuria, alkaptonuria, maple syrup urine disease, hartnup disease. Lipids – Gaucher’s disease, Niemann-pick disease, Tay- sach’s disease, Fabry’s disease, Refsum’s disease, Krabbe’s disease	9
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Pedagogy

Lecture, demonstration, hands on learning through projects, experiments, industrial visits, case studies.

Assessment

Formative Assessment + Summative assessment= 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References

1. Lehninger, A.L, Biochemistry, worth publishers INC, New York, 2000.
2. Ambiga Shanmugam, Fundamentals of biochemistry for Medical students, Karthik printers, 2002.
3. Nutritional Biochemistry, 2nd edition Tom Bridt, Academic press 2006.
4. Powar and Chatwal, Biochemistry, Himalaya publishing house, 2000.
5. Ranganatha Rao, K, Text book of Biochemistry, Prentice Hall of India, NewDelhi, (2000).
6. Sathyanarayanan, U., Chakrapani, U., textbook of biochemistry, 3rd edition, books and allied (p) ltd kolkata, 2010.
7. Lehinger’s principle of Biochemistry (2000), Nelson and Cox.
8. Harper’s Biochemistry - Rober K. Murray, Daryl K. Grammer, Mc GrawHill, Lange Medical Books
9. Biochemistry - Dr. Ambica shanmugam, published by author 2006.
10. Illustrated biochemistry-lippincott’s, 5th edition

**B.Sc Composite Home Science
Semester VI**

Course Title: CHS DSE E2B Sustainability in Textiles and Fashion	
Total Contact Hours: 45 Hrs	Course Credits: 3
Formative Assessment Marks: 40 marks	Duration of ESA / Exam: 2.30 hrs
Model Syllabus Authors:	Summative Assessment Marks: 60 marks

Course Outcomes: (COs)

At the end of the course the student will be able to: -

1. Exhibit knowledge of sustainable textiles and fashion.
2. Understand textile waste management techniques and bio processing of textiles.
3. Adopt sustainable fashion design process and trends.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Exhibit knowledge of sustainable textiles and fashion.	x		x	x					x	x	x	
Understand textile waste management techniques and bio processing of textiles.	x	x	x		x	x		x				
Adopt sustainable fashion design process and trends.	x		x	x			x				x	x

Number of Theory Credits	No of lecture hrs
3	45
Content	
Unit-I. Introduction to sustainable textiles and clothing Concepts	10 Hours
Chapter I - Definition, principles of sustainable production, need for sustainability, environmental and social impacts of the textiles and clothing industry , consumer attitude, market for sustainable textiles and fashion products, importance of reduce, recycle and up cycle concepts in textile and garment sectors. Global scenario in textile recycling.	5 Hrs
Chapter 2- Sustainable Textile Production: Sustainable factors in yarn and fabric manufacturing, waste management in spinning and fabric manufacturing, Key environmental drivers in the textile industry- Legislation, Eco labels, Environmental Management System (EMS), retailers, green consumers, pressure groups, controlled colouration.	5 Hrs
Unit-II. Sustainability in Textile Processing	18 Hours
Chapter 3- Sustainability in Textile Processing Natural Colorants and recent development, Bio processing of textiles - bio desizing, bio scouring, bio bleaching, bio polishing, bio stoning, enzymatic degumming and enzymatic retting. Developments in Natural finishing. Sustainable production process.	9 Hrs
Chapter 4 - Textile Industry waste treatment Effluent generation and their characteristics, Effluent parameters colour, pH, turbidity, BOD, COD, TDS, TSS, oil and grease, metals. BIS limits, Textile Industry waste water treatment Primary treatment - screening, sedimentation, equalization, neutralization, coagulation. Secondary treatment- aerated lagoons, trickling filtration, activated sludge process, oxidation ditch, oxidation ponds, and anaerobic digestion. Tertiary treatment- evaporation, reverse osmosis, dialysis, ion exchange, chemical precipitation, activated carbon treatment. Advanced waste water treatment. Adsorption-Use of agro-wastes, membranes and ozone for colour removal. Enzymatic treatments.	9 Hrs
Unit-III Eco-design and fashion	17 Hours
Chapter 5- Sustainable strategies with the fashion design and production process, Zero waste design practice, use of recycled materials, Sustainable fashion designers and their brands, Production of sustainable fashionthe phases of fashion design and production, fashion designers role, sustainable strategies in design houses, link sustainable strategies with the fashion design and production process, Zero waste design practice, Textile recycling – second hand clothing, redesigning and case studies.	9 Hrs
Chapter – 6 Sustainable Fashion Trend Sustainable fashion concepts – new fashion ethic and aesthetics, reversing fashion consumption, Locally made and globally relevant, sharing and servicing. Fast fashion vs slow fashion, new normal, sustainable fashion supply chain, Fashion Logistic, sustainable clothing care. importance of sustainable fashion, repurposed and recycled textiles, life cycle assessment, green marketing, eco-labeling, future challenges	8 Hrs

Pedagogy

Lecture, demonstration, hands on learning through projects, experiments to understand the basic concepts of textiles, industrial visits, collaboration with industries, institutions and research centres for deeper understanding of the subject.

Assessment

Formative Assessment + Summative assessment= 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:

1. Rajkishore Nayak,(2020).Sustainable Technologies for Fashion and Textiles, Woodhead Publishing, UK.
2. Textiles and Clothing Sustainability Recycled and Upcycled Textiles and Fashion, Springer, Singapore.
3. Claudia E. Henninger , Panayiota J. Alevizou, & Helen Goworek, (2017). Sustainability in Fashion - A Cradle to Upcycle Approach, Palgrave Macmillan - Springer Nature, Switzerland.
4. Jennifer Farley Gordon, Collean hill, (2014). Sustainable Fashion: Past, Present and Future, Bloomsburry Publishing, London.
5. Subramanian Senthilkannan Muthu, (2014). Roadmap to Sustainable Textiles and Clothing Eco Friendly Raw Materials, Technologies and Processing Methods, Springer Publication, UK.
6. Arora. A, (2011).Textbook of Dyes, Sonali Publications, New Delhi. 3. Manivasagam, N, (2003).Treatment of Textile Processing Effluents Including Analysis, Sakthi publications, Coimbatore.

**BSc Composite Home Science
Semester VI**

Course Title: DSE- E2C Event Management and Hospitality Services	
Total Contact Hours: 45 Hrs	Course Credits: 3
Formative Assessment Marks: 40 marks	Duration of ESA / Exam: 2.30 Hrs.
Model Syllabus Authors:	Summative Assessment Marks: 60 marks

Course Outcomes (COs):

At the end of the course the student should be able to: -

Understand and develop skills in hospitality services.

Develop skill in meeting the demands of event management industry.

Formulate context appropriate action plans for challenges identified in hospitality services and event management industry.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Understand and develop skills in hospitality services	x	x	x	x	x	x	x	x	x	x	x	x
Develop skill in meeting the demands of the event management industry.	x	x			x		x		x		x	
Formulate context appropriate action plans for challenges identified in hospitality services and event management industry.	x	x	x	x	x	x	x	x	x	x	x	x

**B.Sc. Composite Home Science
Semester VI**

Course – DSE- E2C Event Management and Hospitality Services	
Number of Theory Credits	Number of lecture hours/semester
3	45

Content	45 Hrs
Unit 1 - Basics of Event Management	15 Hrs
Chapter No. 1: Principles of Event Management Introduction to Events - Scope, concept, Characteristics, types of events, 5 C's of Events (Conceptualization, costing, Canvassing, customization & carrying out) Decision making in the event – What is Decision making, Steps in Decision making Process, Kinds of Decisions, and Complexities in Decision making, Factors affecting Decision making of event planner. Entrepreneurial Competencies for Event Management Ethics in Management of Event	3 Hrs
Chapter No. 2: Event Planning And Team Management Concept of designing events Participant Management, Resource Management, Site and Infrastructure Management, Problem Solving in Crisis Management, Staffing	3 Hrs
Chapter No. 3: Skills in Event Management Leadership Skills, Communication Skills, Presentation Skills, Management Skills	3 Hrs
Chapter No. 4: Event Requirements And Management Accommodation and services , Event ,Traffic management, Permissions	3 Hrs
Chapter No. 5: Basic Event Accounting The Budget, Financial management, Insurance , Sponsorship Promotion and publicity	3 Hrs
Unit-II. Hospitality Management	15 Hrs
Chapter No. 6: Introduction to Hospitality Management Hospitality Management – Meaning , Significance and Scope Hospitality management in different industries Concepts of Hospitality Management - leadership management, operations management, project management and business strategy Organizational structure and responsibilities of Hospitality Department Skills required for hospitality management Entrepreneurship in hospitality business strategy, tourism and event management.	8 Hrs
Chapter No. 7: Hospitality Services at hotel industry Organization of the Hotel Workplace Staff Management in Hotels Control Systems Front Desk Management (Reception) Servicing Rooms and General Cleaning Building and Facility Management Activities Management Food Service	7 Hrs
Unit-III. SAFETY, SECURITY, AND RISK MANAGEMENT	15 Hrs

Chapter No. 9: Risk Management Types of Risks Process of risk Management – Identify, Assess and Manage the risk & hazard.	7 Hrs
Chapter No. 10: Occupational Safety and Security of resources Safety – Techniques and Tips Security – Need, types and problems Occupational Safety and Health – Employer rights, responsibilities, First Aid	8 Hrs

Pedagogy

Guest lectures, demonstrations, group discussions, case studies, Hands on experience in hospitals and hotels, Internship, workshops, portfolio making, lectures, demonstrations, workshops, field visits, face to face interview with experts, Class tests, survey reports, interview reports, assignments, display of exercises done, submission of complete record of practical done, submission of portfolio on a specific topic, area arrangement, model making, mock up spaces, practical tests, Viva Voce

Assessment

Formative Assessment + Summative assessment= 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Practical (Will be done along with theory)

1. Flower Arrangement
2. Bed Making - Different Types of Bed Making
3. Analysis and evaluation of Events in media
4. Preparation of business plan for an event management company
5. Opportunity assessment – SWOT Analysis
6. Delivery Presentation with Client
7. Event Portfolio
8. Internship

References:

1. Abhishek Arora, Karnataka University, Business communication skills (MCC, XZ:8M4 ARO)
2. Athul Shrivstava, 'Modern Hospitality and Tourism Management', 2010, ISBN 978-93-80540-98-6.
3. Diwaker Sharm & Ajay Kumar, Event Planning & Management
4. P D Chaturvedi & Mukesh Chaturvedi, Business Communication- Skills, Concepts & application, (MCC XZ:8M4, CHA)
5. Pondichery University, Dist Education Study Material
6. Premavathi Seetharaman, Sonia Batra & Preethi Mehra, An Introduction to Family Resource management.

7. R K Madhukar, Business Communication, (MCC XZ:8M4 MAD)
8. Sanjay Singh Gaur & Sanjay V Saggere, Event Marketing & Management, (MCC library, XZ74:51 GAU)
9. Sita Ram Singh, Event Management, MCC Library, XZ74:8
10. Wagen & Carlos; Event Management for tourism, cultural business & sporting Events

**B.SC. COMPOSITE HOME SCIENCE
SEMESTER VI**

Course Title: Vocational 2A Food Microbiology and Food Safety Regulations	
Total Contact Hours: 45 Hrs	Course Credits: 3
Formative Assessment Marks: 40 marks	Duration of ESA / Exam: 2.30 hrs
Model Syllabus Authors:	Summative Assessment Marks: 60 marks

Course Outcomes (COs):

At the end of the course the student should be able to:-

1. Understand the concepts of microbes in food and human welfare.
2. Infer the role of microbial spoilage of various foods and its intoxications.
3. Skill to develop framework for food quality control.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Understand the concepts of microbes in food and human welfare.	x	x		x	x		x		x		x	x
Infer the role of microbial spoilage of various foods and its intoxications.	x	x	x			x		x		x		X
Skill to develop framework for food quality control.	x	x			x							x

**B.SC. COMPOSITE HOME SCIENCE
SEMESTER VI**

Course Title: Vocational 2A Food Microbiology and Food Safety Regulations	
Total Contact Hours: 45 Hrs	Course Credits: 3

Content	45 Hrs
UNIT-I. FOOD MICROBIOLOGY, MICROBES IN WATER AND FOOD	15 Hrs
Chapter No. 1 Fundamentals of Microbiology History and development of microbiology, Scope and importance of food microbiology, Economic importance of yeast, moulds and bacteria, Bacterial growth curve, Factors affecting the survival and growth of microorganisms in food. Intrinsic and Extrinsic parameters that affect microbial growth. Intrinsic factors for growth - Generalized, nutrient effect, pH, buffer, anaerobic/aerobic conditions, moisture content, temperature, gaseous atmosphere.	5
Chapter No. 2 Microbiology of water and different foods Water -Sources, bacteriology of water supplies - Bacteriological examination and purification of water.	3
Chapter No. 3 Types of microorganisms & Sources of contamination, Types of spoilage, prevention and control Milk and Milk products, Vegetables & fruits, cereal and cereal products, Meat, fish and poultry	4
Chapter No. 4 Role of Microbes in Fermented foods and Genetically Modified food	3
UNIT II. FOOD SPOILAGE, FOOD PRESERVATION AND FOOD BORNE DISEASES	15 Hrs
Chapter No 5: Food Spoilage Microbiological, physical and chemical factors - Spoilage and examination of canned food.	7
Chapter No. 6: Food Preservation Methods of food preservation, dehydration, canning, freezing and pickling. Use of syrup, irradiation and microwave	4
Chapter No 7: Food borne diseases a. Food infections- Salmonellosis, Shigellosis, Vibrio gastroenteritis, E.Coli, Hepatitis A and Shellfish poisoning. b. Food Borne Intoxications-Staphylococcal poisoning, Bacillus cerues poisoning, Botulism - Mycotoxins- Aflatoxicosis, Ergotism - Bacterial and viral food borne disorders - Food-borne important animal parasites - Food borne diseases and their outbreak	4
UNIT-III. FOOD SAFETY, LAWS AND REGULATIONS	15 Hrs
Chapter No. 8: Food Laws and Regulations National Legislation – Essential Commodities Act - Standard of Weight and Measures Act, ISI, Mark of BIS, Agmark and PFA, FPO - Food Safety and Standards Bill 2005 - International Laws and Agreements - FAO, WHO, Codex Alimentarius WTO,JEFA, APEDA, ISO 22000 series - Hazard Analysis Critical Control Point (HACCP): principles of HAACP,applications of HACCP.	8
Chapter No. 9: Current Food Safety Standards in India	

Current Food Safety regulations 2001 - Food Safety and Standards Authority of India - objectives of developing food safety standards - role of food analyst, safety analysis, action by designated officer and report of food analyst - food Safety Management System (FSMS)v -Good Practices/ PRPs - HACCP, GMP, GHP - Management Element / System - Statutory and regulatory requirements - Certification - HACCP, ISO 22000, FSSC 22000	7
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Pedagogy

Guest lectures, demonstrations, group discussions, case studies, ICT enabled teaching and learning experiences, Internship, flipped classrooms, blended learning, workshops, field visits, active learning, reflective learning, written exercises, collaborative learning, problem solving skills.

Assessment

Formative Assessment + Summative assessment= 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

REFERENCES

1. Bibik Ray “Fundamental Food Microbiology” Third edition – 2005 CRC Press London
2. Thomas J. Montville; Kalmia E. Kniel; Karl R. Matthews : “Microbiology an Introduction” Fourth Edition Year: 2017
3. Rajan Nijhawan “Food Safety & Standards Act, Rules & Regulations” 24th Edition, 2023
4. Sunetra Rhoday “Food hygiene and Sanitation” Second revision 2017.
5. S.K. Goyal Suresh Chandra, Durvesh Kumari A Competition Book For Food Safety Officer - Main Subject : An Objective Approach Unknown Binding – Student Calendar 2019 jain brothers

**BSC COMPOSITE HOME SCIENCE
SEMESTER VI**

Course Title: CHS DSC VOC 2B EARLY CHILDHOOD EDUCATION - II	
Total Contact Hours: 45 hrs	Course Credits: 3
Formative Assessment Marks: 40 marks	Duration of ESA / Exam: 2.30 hrs
Model Syllabus Authors:	Summative Assessment Marks: 60 marks

Eligibility Criteria: Student should have opted for CHS VOC 1C in the 5th semester.

Course Outcomes (COs):-

At the end of the course the student will be able to: -

1. Examine current policies and practices that influence curriculum development for young children.
2. Apply knowledge of principles of curriculum development to create a caring, safe, and healthy environment for children.
3. Explain and demonstrate educational techniques in terms of programme plan, planning process, goals of activities.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes / Program Outcomes	1	2	3	4	5	6	7	8	9	10	11	12
Examine current policies and practices that influence curriculum development for young children.				x				x	x			
Apply knowledge of principles of curriculum development to create a caring, safe and healthy environment for children.	x				x		x		x			
Explain and demonstrate educational techniques in terms of programme plan, planning process, goals of activities.	x	x			x		x		x		x	

**BSC COMPOSITE HOME SCIENCE
SEMESTER VI**

Course: CHS DSC VOC 2B Early Childhood Education - II	
Number of Theory Credits	Number of lecture hrs / semester
3	45

CONTENT	30 Hrs
UNIT I: INTRODUCTION TO EARLY CHILDHOOD EDUCATION	10 Hrs
Chapter No.1: Science of Early Childhood Education - development of the brain. Howard Gardner’s theory of learning; Different styles in learning.	2 Hrs
Chapter No. 2: Current status of ECE in India - Present status: Policies in ECCE Programmes / schemes: ICDS, Balwadis, mobile crèches.	3 Hrs
Chapter No. 3: The Indian approach to “play-way” method Tarabai Modak, Gandhi, Tagore, Gijubhai Badheka, Montessori, Reggio Emilia, Waldorf, The Project Method. Innovative approaches of Head Start Model, Indian model of ICDS.	5 hrs
UNIT 2: CURRICULUM DEVELOPMENT	12 Hrs
Chapter No. 5: Teacher and the child-centred learning environment: Physical and social-emotional aspects of classroom layout with implications for providing developmentally appropriate teaching materials; Classroom Management; Role of teacher in developing and transacting a curriculum.	5 Hrs
Chapter No. 6: Developing a Programme Plan for children of 5-8 years – Difference between early and middle childhood years; Curricular content: 1. Address diversity in development, Domain linkages; Age-appropriateness of activities and materials; Play-based methods. 2. Language and literacy, Mathematics; Science; Social Studies; Music; Dramatic Play and Drama; Movement and Physical Education.	7 Hrs
UNIT 3: DEVELOPMENTALLY APPROPRIATE ASSESSMENT	8 hrs

<p>Chapter No. 7: Student Assessment - Guiding Principles for Assessment; Methods and Tools of Assessment; Analysing Children’s Responses for Effective Teaching-Learning; Documenting and Communicating Assessment; Issues related to developmentally appropriate assessment. Curriculum and Program Assessment: Goals and objectives of a curriculum and a program, Reviewing, preparations and procedures; Closure and feedback.</p>	8 hrs
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Pedagogy

Regular lectures, demonstrations, Exercises on observation and follow up with group discussions, case studies, ICT enabled teaching and learning experiences in terms of video lessons.

NOTE: Journal writing for each unit. Marks to be considered for internal assessment.

Internship in an anganwadi / private preschool. There is no examination from the university. But marks could be taken towards internal assessment.

Practical: 1 Credit

30 hrs / 2 hrs per wk (15 wks)

Suggested Exercises:

1. Design a teaching module for teachers working with young children.
2. Methods and tools to assess progress of children and program.
3. Prepare low cost play materials/equipment.
4. Preparation of various teaching aids –Art resources, storytelling material, worksheets, Music related resources etc.
5. To examine the existing curriculum at their field placement site and evaluate the same.
6. Research in early childhood education - Understanding journal articles, case studies and action research.

Assessment

Formative Assessment + Summative assessment= 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	End Semester Examination = 60
Total	40 marks + 60 marks = 100 marks

References:

1. Prochner, L. (2002). Preschool and playway in India. *Childhood*, 9(4), 435-453.
2. Gupta, A. (2008). Tracing Global-Local Transitions within Early Childhood Curriculum and Practice in India. *Research in Comparative and International Education*, 3(3), 266-280.
3. Wortham, S. C. (2009). *Early childhood curriculum: Developmental bases for learning and teaching*. Pearson.
4. Edwards, S. (2003). New directions: Charting the paths for the role of sociocultural theory in early childhood education and curriculum. *Contemporary Issues in Early Childhood*, 4(3), 251-266.

5. Venugopal, K. (2014). Blooming Flowers: A case for developmentally appropriate practice. *Journal of Early Childhood Research*, 1-11. doi. 10.1177/1476718X14538597.
6. Ministry of Women and Child Development.(2013). National Early Childhood Care and Education (ECCE) Curriculum Framework.
7. National Council of Educational Research and Training.(2005). National Curriculum Framework. Available at: <http://www.ncert.nic.in/rightside/links/pdf/framework/english/nf2005.pdf> (focus on sections relevant for early childhood years)
8. National Council of Educational Research and Training.(2014). Syllabus for classes at the elementary level. Available at <http://www.ncert.nic.in/rightside/links/syllabus.html> (classes 1 and 2)

**BSc Composite Home Science
Semester VI**

Course Title: CHS DSC VOC 2C Garden and Landscape Designing	
Total Contact Hours: 45 Hrs	Course Credits: 3
Formative Assessment Marks: 40 marks	Duration of ESA / Exam: 2.30 Hrs
Model Syllabus Authors:	Summative Assessment Marks: 60 marks

Course Outcomes (COs):

At the end of the course the student should be able to: -

1. Understand the importance of cultivating ornamental plants and their scope in entrepreneurship.
2. Raise and sustain indoor plants skillfully.
3. Draft landscape plans for commercial and residential sectors.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Understand the importance of cultivating ornamental plants and their scope in entrepreneurship.	X		X			X		X		X		X
Raise and sustain indoor plants skillfully.		X			X				X		X	
Draft landscape plans for commercial and residential sectors.	X		X				X			X		X

**B.Sc. Composite Home Science
Semester VI**

Title of the Course: CHS DSC VOC 2C Garden and Landscape Designing	
Number of Theory Credits	Number of lecture hours/semester
3	45

Content	45 Hrs
Unit 1 - Concept and Classification of Landscape Garden	10 Hrs
Chapter No. 1: Introduction to Landscape Garden Definition, Importance and Scope of land scape garden Types of Gardens -English garden, French garden, Mughal garden, Japanese garden, Italian garden and Persian garden Gardens based on styles–Formal , Informal and Free style Gardens based on design-Terrace, Roof, Vertical, Window, Balcony, Container , Kitchen gardening Gardens based on water requirement – Xeriscape (water efficient) gardens	5 Hrs
Chapter No. 2: Layout and Design Principles in Landscape Layout- The foreground area, The private living area and The service area Design Elements-Line, Form, Color, Texture, Space and Pattern in garden layouts Beauty Principles-Balance, Proportion, Scale, Rhythm and Harmony – adoption in garden and landscape layouts	5 Hrs
Unit-II. Components of Landscape Designing	10 Hrs
Chapter No. 3: Classification of Landscape and plants Classification of ornamental plants: Annual, Biennial and Perennial Softscape: Trees, plants, mulches, climbers and creepers, edges and hedges, flowers beds, shrubs., lawns, topiary and trophy Lawn: meaning and importance of lawn, preparation of land for laying lawn, methods of raising lawn, types of lawn grass , plants suitable for lawn and ready to use lawn as saleable products Hardscape: Sidewalks, walls and fences ,pavers, rocks, decks and patios, ponds and pools, garden benches or other seating, gazebos, walkways and driveways.	5 Hrs
Chapter No. 4: Indoor Gardening, Garden Décor and Adornment Factors considered for growing indoor plants, selection and placement ,types of indoor plants ,care and maintenance Basic requirements for maintenance of garden plants-temperature, light, water, air, nutrients and space. garden tools and equipment, insecticides and pesticides, pruning methods Bonsai-plants suitable for bonsai culture, techniques and styles, Terrarium – conceptual meaning, creating terrarium Décor and Adornment- Water features, sculpture, tree hangers, pottery lighting, swings, hammocks. Supportive- Bird houses, kennel house, beehives, feeders, tree houses, trellises. Eco friendly materials role in raising garden	5 Hrs
Unit-III. Commercial Landscape Gardening	10 Hrs

Chapter No. 5: Drafting landscape plans incorporating all components Landscape gardening in educational institutions, corporate and residential areas Prospects for entrepreneurship –Running nursery, making ecofriendly bags/baskets, Other saleable products - plants (saplings, seedlings), cut flowers, value added products like flower arrangement, bouquet, readymade lawns, terrarium, real time (working model) indoor fountains etc	10 Hrs
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Pedagogy

Class tests, examination, assignments and seminar presentation, interactions, conducting quizzes and debates, interviews, research projects and case study analysis, submission of reports, records and portfolio.

Assessment

Formative Assessment + Summative assessment= 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	End Semester Examination = 60
Total	40 marks + 60 marks = 100 marks

Note: There is no examination from the university. But marks could be taken towards internal assessment. Choose those that can be executed from the given list within the time period.

Suggested practical Exercises:-

1 Credit

30 hrs / 2 hrs per wk (15 wks)

1. Visit to landscape garden to identify different types of gardens
2. Visit nursery to familiarize with various ornamental plants
3. Make an album to depict the beauty principles, elements and components of garden layouts
4. Draw plans for various types of garden
5. Demonstration on creating terrarium and bonsai
6. Hands-on experience on xeriscape garden
7. Workshops on flower arrangement – types and styles, bouquet making, flower tying and garland making
8. Training by Landscape / horticulture/ floriculture professionals on significance, scope and methods of initiating ornamental gardens
9. Demonstration on the plant propagation methods by experts
10. Initiating a model nursery in the department and start a project enterprise

References:

1. Ashraf, A. M. (2010). A Handbook of Landscape Gardening and Environment. India: Agrobios
2. Bose et al., (2011). Floriculture and Landscaping. Calcutta: Allied Publishers
3. Bruce, S. (2016). Thinking about Landscape Architecture: Principles of Design Profession for the 21st Century. London: Routledge Taylor and Francis group

4. Carols, S. (2017). Eco Landscape Design. UK: Scitus Publisher
5. Encyclopaedia of Landscape Design (2017). Planning, Building and planting Your Perfect Outdoor Space. New Delhi: DK Publishers
6. Kumar, N. (2010).Introduction to Horticulture.Nagarcoil: Rajalakshmi Publications
7. Larson, A. (2013). Introduction to Floriculture.London:Academic Press Publishers
8. Lyall, S. (2012). Designing the New Landscape. California: Thames and Hudson publishers
9. Moir, J. (2018). New Landscape Ideas that Work.Vermont: Taunton Press Inc
10. Shaheer, et al., (2013). Landscape Architecture in India: a Reader. New Delhi: L A Publisher
11. Singh,A.K., and Sisodia. A. (2017). Text Book of Floriculture and Landscaping. New Delhi:New India Publishing Agency

**Model Curriculum
of
B.A/ B.Sc Home Science
5th and 6th Semester
(Model II A)**

Sub-committee members of B.A/ B.Sc Home Science

1.	Dr. Marie Kavitha
2.	Dr. Vijaya U Patil
3.	Dr. Manjula G. Kadapatti
4.	Mrs. Veena Tirlapur
5.	Mrs. Anita Bettaiah
6.	Mrs. Shobha .S

Listing of Courses

Sem.No.	Course Category	Course Code	CourseTitle	Credits Assigned	Instructional Hoursperweek		Duration ofExam(Hrs.)	Marks		
					Theory	Practical		IA	Exam	Total
I	DSC	HSCC1-T	Principles of Food and Nutrition	4	4		2.5	40	60	100
		HSCC2-P	Principles of Food and Nutrition	2	-	4	3	25	25	50
		HSCOE1-T	Food Preservation	3	3	-	2.5	40	60	100
II	DSC	HSCC3-T	Fundamentals of Human Development	4	4		2.5	40	60	100
		HSCC4-P	Fundamentals of Human Development	2		4	3	25	25	50
		HSCOE2-T	Teaching materials for early childhood education	3	3	-	2.5	40	60	100
III	DSC	HSCC5-T	Early childhood care and education	4	4		2.5	40	60	100
		HSCC6-P	Early childhood care and education	2		4	3	25	25	50
		HSCC0E3-T	Fundamentals of interior decoration	3	3	-	2.5	40	60	100
IV	DSC	HSCC7-T	Introduction to textiles	4	4		2.5	40	60	100
		HSCC8-P	Introduction to textiles	2		4	3	25	25	50
		HSCC0E4-T	Fashion designing	3	3	-	2.5	40	60	100
V	DSC	HSCC9-T	Human development and family dynamics	4	4		2	40	60	100
		HSCC10-P	Human development and family dynamics	2		4	3	25	25	50
		HSCC11-T	Interior decoration	3	3		2.5	40	60	100
		HSCC12-P	Interior decoration	2		4	3	25	25	50
		HSCC13-T	Extension education	3	3		2.5	40	60	100
		HSCC14-P	Extension education	2		4	3	25	25	50
	DSE	HSCE1-T	A. Interior Building Materials and Finishes B Interpersonal Relationships	1	3		2.5	40	60	100
Vocational	HSCV1-T	A. Entrepreneurship management B. Floriculture and Ornamental Plants	3	3		2.5	40	60	100	
VI	DSC	HSCC15-T	Traditional textiles and costumes of India	4	4		2-5	40	60	100
		HSCC16-P	Traditional textiles and costumes of India	2		4	3	25	25	50
		HSCC17-T	Nutritional management	3	3		2-5	40	60	100
		HSCC18-P	Nutritional management	2		4	3	25	25	50
		HSCC19-T	Resource management	3	3		2.5	40	60	100
		HSCC20-P	Resource management	2		4	3	25	25	50
	DSE	HSCE2-T	A. Consumer Education B. Ergonomics	3	3		2.5	40	60	100
	Vocational	HSCV2-T	A.Public health nutrition	3	3		2.5	40	60	100
			A. Special education							



Government of Karnataka

Model Curriculum

Program Name	BA/B.Sc. Home Science		Semester	Fifth Sem
Course Title	Human development and family dynamics (Theory)			
Course No.	HSCC9-T	DSC	No. of Credits	4+2
Contact hours	52 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Certificate with minimum 45%.	
Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none">1. Understand the period of Adolescence and its developmental changes.2. Study the need of counselling for adolescents.3. Understand the physical, Physiological cognitive and socio-emotional development during adulthood stages.4. Sensitized about interpersonal relationships, Marriage, functions of marriage, changing trends in marriage and Family and family dynamics.5. Prepare for outreach activities with varied groups of adults and elderly.	
Content	52 Hrs
Unit-I. Adolescence	13 Hrs
Chapter No. 1 Definition, characteristics, developmental tasks of Adolescence.	2 Hrs
Chapter No. 2 Physical changes, puberty, primary and secondary sexual characteristics among adolescents.	4 Hrs
Chapter No. 3 Identity formation, social, emotional, cognitive and moral development. Interests and problems of adolescents	5 Hrs
Chapter No. 4 Need for adolescent counselling. Techniques and methods of adolescent counseling. Education and Career guidance	2 Hrs
Unit-II. Adulthood- Early Adulthood and Marriage	13 Hrs
Chapter No. 5 Historical perspectives on adulthood, Contemporary changes, increase in life expectancy	5 Hrs

and decrease in death rate, classification of Adulthood. Early Adulthood- Characteristics and developmental tasks, physical, social, cognitive, emotional and moral development. Roles, responsibilities and adjustments.	
Chapter No. 6 Marriage – definition, functions, areas of marital adjustments, essentials of successful marriage	3 Hrs
Chapter No. 7 Changing trends in marriage: cohabitation, remarriage, LGBT (Lesbian, Gay, Bisexual, and Transgender) marriages	5 hrs
Unit-III. Family, Family Dynamics and Middle Adulthood	13 Hrs
Chapter No. 8 Family – Definition functions and types. Changing trends in family: causes for change, single parent families, separated families, nuclear families cross-generational families, adoptive/foster families, blended families, same-sex parent families	5 Hrs
Chapter No. 9 Family Dynamics- Definition, function and scope. Gender norms and roles in family dynamics	3 Hrs
Chapter No. 10 Middle Adulthood - Characteristics and developmental tasks. Physical, physiological and socio-emotional changes, changes in cognitive abilities, Adjustments and hazards of middle age, preparation for retirement	5 Hrs
Unit-IV. Family crisis and Late Adulthood	13 Hrs
Chapter No. 11 Forms of family crisis: Marriage, divorce/separation, remarriage, financial instability, poor work-family balance, illness, death, childlessness, child abuse/neglect, family violence, peer pressure, addiction, rape, suicide, unemployment, natural disasters, epidemics and wars. Family cohesion- the role of effective communication, compassion, perspective-taking, role distribution, positive conflict resolution, and teamwork. Agencies offering support: Marriage and family therapists, Family courts, Child guidance clinics, counseling and rehabilitation centers	8 Hrs
Chapter No. 12 Late Adulthood - Characteristics and developmental tasks. Physical, physiological, psychological and social changes. Health care and health problems, Adjustments to retirement. successful ageing	5 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Understand the period of Adolescence and its developmental changes		X		X	X						X	
Understand the physical, Physiological cognitive and socio-emotional development during adulthood stages								X	X		X	
Sensitized about interpersonal relationships, Marriage, functions of marriage, changing trends in marriage and Family and family dynamics								X		X		X
Prepare for outreach activities with varied groups of adults and elderly			X	X				X				

Pedagogy - Theory

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Human development and Family Dynamics (Practical)	Practical Credits	2
Course No.	HSCC10 P	Contact Hours:	52/13Sessions
Practical Topics - 2 credits		13 - 15 weeks	
Unit I <ul style="list-style-type: none"> Conduct a study on selection of life partner/ changing trends in marriage//adjustments/ problems in marriage OR Plan an interaction with a counselor or therapists working in the area of interpersonal conflicts (in the family family/peer group/parent-child/ Adolescent). 			4 Hrs
Unit II <ul style="list-style-type: none"> Conduct a role play to create awareness among college students on family values / family relationship /stability in marriage. OR Select a form of family crisis or stress. Develop an educational aid to prevent and manage the crisis. Visit to an Adolescent/ family counselling center and write a report 			15 Hrs

Unit III <ul style="list-style-type: none"> Organize a workshop for adolescents on -physical changes/health issues/ menstrual hygiene/behaviour during adolescence. OR Conduct a workshop on enhancing family cohesion and conflict resolution 	6 Hrs
Unit IV <ul style="list-style-type: none"> Plan, prepare and conduct activities to foster cognitive abilities / health/ nutrition/ recreational activities for the aged. OR Create posters about ways to improve interpersonal communication skills and patters of relating to enhance resiliency in relationships 	5 Hrs

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment / project	5 + 5
Total	25 marks + 25 marks = 50 marks

References:	
1.	Arnett, J. J., & Jensen, L. A. (2019). <i>Human Development: A cultural approach (3rded.)</i> . New York: Pearson.
2.	Berk, L.E. (2005). <i>Child development (5th ed.)</i> . New Delhi: Prentice Hall
3.	Baradha.G ‘Basics of Human Development’ Saradalaya Press, Sri Avinashilingam Education Trust Institutions, Coimbatore 2008.
4.	Cavanaugh, J., & Blanchard-Fields, F. (2011). <i>Adult development and aging (7thed)</i> . Stamford, CT: Cengage Learning.
5.	Hurlock.B.Elizabeth ‘Developmental Psychology – A Life Span Approach’ Tata McGraw Hill Publications, New Delhi Latest Edition. 3.
6.	Kapadia, S. (2011). Psychology and human development in India. Country paper. International Society for the Study of Behavioural Development Bulletin Number 2, Serial No. 60, pp.37-42.
7.	Santrock, J. (2017). <i>A topical approach to life span development (9th ed.)</i> . New NY.:Mcgraw-Hill Higher Education.
8.	Singh, A. (2015). <i>Foundations of Human Development: A life span approach</i> . ND: Orient Black Swan
9.	Suriakanthi. A. (2015) ‘Child Development’ Kavitha Publications, Gandhigram, Tamil Nadu.
10.	Walsh, B.A., Deflorio, L., Burnham, M.M., & Weiser, D.A. (2017). <i>Introduction to Human Development and Family Studies</i> . NY: Routledge

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	BA/B.Sc. Home Science		Semester	Fifth Sem
Course Title	Interior Decoration (Theory)			
Course No.	HSCC11-T	DSC	No. of Credits	3+2
Contact hours	45 Hrs		Duration of SEA/Exam	2.5 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Certificate with minimum 45%.	
Course Outcomes (COs): At the end of the course the student should be able to	
<ul style="list-style-type: none"> To Learn about housing and its principles To understand about color and its application in interiors To apply elements and principles of design in interior decoration To know about furniture, window treatment and accessories in interiors 	
Content	45 Hrs
Unit-I. Design Fundamentals	15 Hrs
Chapter No. 1 Types of design- Structural and Decorative, Naturalistic, Stylized, Geometric, Abstract.	3 Hrs
Chapter No. 2 Elements of Art- Line, form, color, space, texture, Pattern, light.	7 Hrs
Chapter No. 3 Principles of design- Harmony, Proportion, Balance, Rhythm, Emphasis	5 Hrs
Unit-II. Dimension of color	15 Hrs
Chapter No. 4 Dimension of color- Hue, Value, Intensity, Advancing and receding colors, cool and warm colors. Characteristics of colors	3 Hrs
Chapter No. 5 Prang color system- Primary, secondary, and Tertiary colors, color wheel. Color Harmonies- Related and Non-Related Color Harmonies.	5 Hrs
Chapter No. 6 Principles of housing, Types of Dwelling units	7 Hrs

Unit-III. Furniture and Window treatment	15 Hrs
Chapter No. 7 Factors to be considered in Selection, Principles of Furniture Arrangement, Furniture Arrangement for different rooms. Styles of Furniture and materials used to make furniture	5 hrs
Chapter No. 8 Windows- Types of windows- casement, bay window, sliding window, awing window, picture window. Window treatment- Modes of Hanging Curtains- Cafe, Tier, Priilla, Criss Cross, Glass, Pleated	5 Hrs
Chapter No. 9 Accessories – classification and types Flower decoration -styles and shapes	5 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
To Learn about housing and its principles		X		X	X						X	
To understand about colour and its application in Interiors								X	X		X	
To apply elements and principles of design in interior decoration								X		X		X
To know about furniture, window treatment and accessories in interiors			X	X				X				

Pedagogy - Theory

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Interior Decoration (Practical)	Practical Credits	2
Course No.	HSCC12 P	Contact Hours:	52/13Sessions
Practical Topics - 2 credits		13 - 15 weeks	
Unit I Design- Structural and Decorative design. Elements of Arts and Principles of design.			15 Hrs
Unit II Color wheels, color harmonies.			5 Hrs
Unit III Furniture arrangement and Window treatment			15 Hrs
Unit IV Flower arrangement			5 Hrs

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment / project	5
Total	25 marks + 25 marks = 50 marks

References:

1.	Prathap Rao (2003) Interior design Principles - Standard Publishers and Distributors, New Delhi.
2.	Raja Rao and Subramanya (2003) Planning and Designing Residential Buildings - Standard Publishers and Distributors, New Delhi.
3.	Sita Ram Premavathy Pannuparveen (2005) Interior Design and Decoration - CBS Publishers, , New Delhi.
4.	Premlatha Mullick (2015) Textbook Of Home Science - Kalyani Publishers, New Delhi.

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	BA/B.Sc. Home Science		Semester	Fifth Sem
Course Title	Extension Education (Theory)			
Course No.	HSCC13-T	DSC	No. of Credits	3+2
Contact hours	45 Hrs		Duration of SEA/Exam	2.5 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Certificate with minimum 45%.	
Course Outcomes (COs): At the end of the course the student should be able to	
<ul style="list-style-type: none"> Understand the concept and principles of Extension Education Familiarize with the teaching learning process Know about the concept of community and Community Development 	
Content	45 Hrs
Unit-I. Concept of extension education	10 Hrs
Chapter No. 1 Definition, Meaning, Objectives and principles of Extension Education.	4 Hrs
Chapter No. 2 Formal, Informal and Non-Formal Education.	4 Hrs
Chapter No. 3 Role of Home Science in Extension Education	2 Hrs
Unit-II. Teaching learning process	18 Hrs
Chapter No. 4 a. Learning - Concept, Principles, Elements b. Teaching - Process, Types: - Trainee-dominated method, Trainer dominated method, Cooperative method, Functional method c. Qualities of a good teacher	6 Hrs
Chapter No. 5 Extension teaching methods - Role play, workshop, Game stimulation, audio visual aids.	4 Hrs
Chapter No. 6 Role of motivation in teaching and learning - Meaning, needs which motivate: Organic, Wants, Emotions, Feelings and attitudes, Social motives, Habits, Objective Environment	6 Hrs

f. Motivation in extension - Importance, Intrinsic and Extrinsic values	
Unit-III. Concept of Community Development	13 Hrs
Chapter No. 7 Basic concept of community Development: Nature, Real development, core values, objectives of Community Development: Definition and meaning, Concept, Need, Essential elements, Scope, Objectives, Philosophy, Types	5 hrs
Chapter No. 8 Evolution of Community Development program in India Since Independence. Program planning - Principles and steps. Program building - Plan of work and Calendar of events	4 Hrs
Chapter No. 9 Definition, Meaning, Concept, Importance Types, Elements, Functions and Models of communication Feedback in communication Communicator – communicate relationships. Barriers to communication	4 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Concept and need of Extension Education		X		X	X						X	
Familiarize with the teaching learning process								X	X		X	
Know about the concept of community, Development and Community Development			X			X				X		
Use of Different media for communication								X		X		X

Pedagogy - Theory

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Extension Education (Practical)	Practical Credits	2
Course No.	HSCC14 P	Contact Hours:	10 Sessions
Practical Topics - 2 credits		13 - 15 weeks	
Unit I Prepare a plan of work and calendar of events activity/program for an educational/ awareness activity program.			4 Hrs
Unit II Organize an educational awareness activity using Role play/ Workshop/ Game simulation for community.			15 Hrs
Unit III Prepare audio visual aid used in the extension program			6 Hrs
Unit IV Conduct a programme with the help of audio-visual aids for a group activity using communication			10 Hrs

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment / project	5
Total	25 marks + 25 marks = 50 marks

References:	
1.	Dahama.O.P and O.P Bhatanagar: Education and Communication for Development, 2nd Edition; Oxford and IBH Publishing Co.pvt.Ltd New Delhi, 1985
2.	Khan.P.M and L.L. Somani: Fundamentals of Extension Education, Agrotech Publishing Academy, Udaipur,2009
3.	Ray, G.L: Extension Communication and Management, Naya Prakash, Calcutta, 1999
4.	Reddy: Extension Education, Bapatia India, Srilakshmi press, 1987
5.	Rodgers, Alan: Teaching methods in Extension Education for development, Westwood Row, Woodmans, 1989

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	BA/B.Sc. Home Science		Semester	Fifth Sem
Course Title	Interior Building Materials and Finishes (Theory)			
Course No.	HSCE-1B -T	DSE	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2.5 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%.	
Course Outcomes (COs): At the end of the course the student should be able to	
<ul style="list-style-type: none"> • 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. • Select and apply the various finishes based on care and maintenance 	
Content	45 Hrs
Unit-I. Wall finishes	10 Hrs
Chapter No. 1 1.1 Meaning, Structural wall finishes- Tiles, Wood, Terracotta, Marble, Metals and Stone finishes.	5 Hrs
Chapter No. 2 1.2 Applied wall finishes Glass, Mica, Wallpapers–Kinds of wallpapers, Application of wallpapers, Murals, Fabric and Mirror.	5 Hrs
Unit-II. Paint	15 Hrs
Chapter No. 3 Wall Painting requirements-Paint roller, Paint roller extension pole, Drop cloths, Paint brushes, Paint tray, Sandpaper, Painter’s tape, Rags and Putty knife.	5 Hrs
Chapter No. 4 Classification of paints-Water Based (Distemper Acrylic and Synthetic properties and emulsion – Interior and Exterior) and Oil Based– Uses of oil base painting.	5 Hrs

Chapter No. 5 Process of painting anew wall – pre-painting, painting, Characteristics of an ideal painting. Defects found in painting, Care and maintenance	5 Hrs
Unit-III. Finishes	20 Hrs
Chapter No. 6 Ceiling Finishes - Definition, types, Treatment–plastering, embossing, fresco, glass, false ceilings	4 hrs
Chapter No. 7 Floor Finishes-Definition, Hard floors -Terrazzo, wood, mosaic, tiles, marble and granite. Semi hard Floors– Vinyl, linoleum, Rubber and cork	8 Hrs
Chapter No. 8 Wood finishes –Types of hardwood and softwood, Process of varnishing and Characteristics of an ideal varnish. Fundamentals for interior and exterior treatments. Termite proofing, water proofing, acoustics, thermal comfort, fire protection	8 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Apply the Fundamentals of interior and exterior treatments based on climate, cost, style and location.			X		X							
Compare the types of structural and applied wall finishes				X		X						
Analyze the different treatments of ceiling finish with innovative materials			X			X		X				
Classify the types of Hard, semi-hard and soft floor finishes.			X				X					
Select and apply the various finishes based on care and maintenance					X		X					

Pedagogy - Theory

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Andal.A and Parimalam.P,(2008).A Text Book of Interior Decoration. Satish Serial Publishing House
2.	Clifton.c.etal,(1995), The Complete Home Decorator, Conran octopus Ltd, London
3.	Innes,J.(1990), Exterior Detail, Collins and Brown Ltd, London
4.	Love.G.(2000),Inside out, Conron octopus Ltd, London
5.	Ostrow.J.(2001),Painting rooms, Rock port publishers, USA
6.	Spencer,H. and Churchill, (1990), Classic English Interiors, Anaya Publishers Ltd

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	BA/B.Sc. Home Science		Semester	Fifth Sem
Course Title	Interpersonal Relationships (Theory)			
Course No.	HSC – VOC – 1A	VOC	No. of Credits	3+2
Contact hours	45 Hrs		Duration of SEA/Exam	2.5 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Certificate with minimum 45%.	
Course Outcomes (COs): At the end of the course the student should be able to	
<ul style="list-style-type: none"> • Explain basic components and processes involved in interpersonal relationship • Describe theoretical perspectives in understanding interpersonal relationships and family dynamics. • Use one’s self-awareness in understanding significant others. Illustrate the significance of self-awareness in our understanding of significant others. • Formulate strategies for developing positive dynamics in different relationships and managing conflict 	
Content	45 Hrs
Unit-I. Understanding the Self	15 Hrs
Chapter No. 1 Self-Awareness—personality characteristics, cultural beliefs, values, expectations, and ideas guiding behavior.	5 Hrs
Chapter No. 2 Self-identity— Identifying one’s own philosophy and goals of life (influenced by personal history, socialization and context.	5 Hrs
Chapter No. 3 Personality—factors that shape one’s personality and its influence on behaviour and interpersonal communications; Self with family/parents/siblings, peers, social/professional organizations. The impact of media on the self	5 Hrs
Unit-II. Perspectives and Theories	15 Hrs
Chapter No. 4 Perspectives: On friendships, love, family and other interpersonal relationships. <ul style="list-style-type: none"> • Ethological Perspective • Neurobiological Perspective 	5 Hrs

<ul style="list-style-type: none"> • Psychological Perspective • Sociological Perspective • Cross-cultural perspectives 	
Chapter No. 5 Theories Social Exchange Theory, Family Systems Theory, Family Developmental Theory, Ecological Systems Theory, Attachment Theory, Triangular theory of love - Robert Sternberg.	5 Hrs
Unit-III. Basics of Interpersonal Communication	15 Hrs
Chapter No. 6 Process and components of basic communication Interpersonal communication: communication of ideas and feelings, self-disclosure, crediting and criticism	5 hrs
Chapter No. 7 Nurturing positive interpersonal communication and dynamics: perspective taking, empathy, listening and feedback skills. Resolving interpersonal conflicts: Types of conflicts and management skills (in relation with marital, parental, workplace, family, and friends)	5 Hrs
Chapter No. 8 Understanding intimate, love and romantic relationships within a cultural context. Career choices and professional relationships- developing trust, mutual respect, mindfulness, appreciation for diversity and open communication. Understanding the role of adjustments in relationships- myths, misconceptions and factors influencing adjustment patterns.	5 Hrs
Chapter No. 9 Nurturing positive interpersonal communication and dynamics: perspective taking, empathy, listening and feedback skills. Resolving interpersonal conflicts: Types of conflicts and management skills (in relation with marital, parental, workplace, family, and friends)	5 Hrs
Chapter No. 10 Understanding intimate, love and romantic relationships within a cultural context Career choices and professional relationships- developing trust, mutual respect, mindfulness, appreciation for diversity and open communication. Understanding the role of adjustments in relationships- myths, misconceptions and factors influencing adjustment patterns	5 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Explain basic components and processes involved in interpersonal relationships.		X		X	X						X	
Describe theoretical perspectives in understanding interpersonal relationships and family dynamics								X	X		X	
Use one’s self-awareness in understanding significant others. Illustrate the significance of self-awareness in our understanding of significant others								X		X		X
Formulate strategies for developing positive dynamics in different relationships and managing conflict.			X	X				X				

Pedagogy - Theory

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Arnett, J.J. (2005). Youth, cultures and societies in transition: The challenge of growing up in a globalized world. In F. Gale & S. Fahey. (Eds.), <i>Youth in Transition – The challenges of generational change in Asia</i> (pp 22-35). Bangkok: Regional Unit for Social and Human Sciences in Asia and the Pacific.
2.	Chaudhary, N., & Shukla, S. (2019). Family, identity, and the individual in India. In G. Misra (Ed.), <i>Psychology: Volume 2: Individual and the social: Processes and issues</i> (pp.143-189). New Delhi, India: Oxford University Press.
3.	Ganguly-Scrase, R. (2007). Victims and agents: Young people’s understanding of their social world in an urban neighbourhood in India. <i>Young</i> , 15, 321-341.
4.	Gudykunst, W. B., & Toomey, S. T. (1998). <i>Culture and interpersonal communication</i> . ND: Sage.
5.	Mines, M. (1998). Conceptualizing the person: Hierarchical society and Individual autonomy in India. <i>American Anthropologist</i> , 90(3), 568-579.
6.	Weiten, W., & Llyod, M. A. (2004). <i>Psychology applied to modern life</i> . Singapore: Thompson Asia Pvt. Ltd.

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	BA/B.Sc. Home Science		Semester	Fifth Sem
Course Title	Entrepreneurship Management (Theory)			
Course No.	HSCV1-T	VOC A	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2.5 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%	
Course Outcomes (COs): At the end of the course the student should be able to	
<ul style="list-style-type: none"> • Understand the concept of entrepreneurship, entrepreneur, and enterprise. • Identify ways to approach supportive Institutions and Banks for starting an enterprise • Analyze the steps in product selection and form of ownership. • Focus on the formation of project proposal and practice effective accounting processes 	
Content	45 Hrs
Unit-I. Concept of Entrepreneurship	15 Hrs
Chapter No. 1 Conceptual - meaning, definition and scope of entrepreneurship. Entrepreneur- meaning, qualities, functions, and types of entrepreneurs. Enterprise – Definition, nature, and classification.	8 Hrs
Chapter No. 2 Forms of Organization – Sole proprietorship, partnership, Joint Stock Company Role of entrepreneur in economic development Visit to enterprises to observe the qualities of entrepreneurs.	7 Hrs
Unit-II. Establishing a Small-Scale Enterprise	15 Hrs
Chapter No. 3 Concept and Classification – Product identification and product selection Infrastructure – Plant Location, Land, building, water, and power	8 Hrs
Chapter No. 4 MS – Manpower, method, machine, material, marketing, mother nature Preparation of case studies of successful entrepreneur	7 Hrs

Unit-III. Accounting for Small Enterprises	15 Hrs
Chapter No. 5 Meaning, need and objectives of accounting Process of Accounting, Book Keeping, Journal, Ledger and Balance Sheet, Final Accounts	8 hrs
Chapter No. 6 Institutional Support- Commercial Bank Visit to financial and supportive Institution to understand or observe their action modalities	7 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Learners will pick up about Foundation of Entrepreneurship Development and its theories.			X		X							
Learners will explore entrepreneurial skills and management function of a company with special reference to SME sector.				X	X							
Learners will identify the type of entrepreneur and the steps involved in an entrepreneurial venture							X	X				
Learners will understand various steps involved in starting a venture and to explore marketing methods & new trends in entrepreneurship.							X		X			
Learners will apply skills in maintaining accounts					X		X					

Pedagogy - Theory

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Anilkumar, S. Poornima S.C. Mini K. Abraham and Jayashree, K. (2012). Entrepreneurship Development. New Delhi: New Age International Pvt. Ltd., Publishers
2.	Badi, R. V. and Badi N. V. (2011), Entrepreneurship. New Delhi: Vrinda Publications Pvt. Limited
3.	Gordon, E., and Natarajan, K. (2013), Entrepreneurship Development. Mumbai: Himalaya Publishing House

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	BA/B.Sc. Home Science		Semester	Fifth Sem
Course Title	Floriculture and Ornamental Plants (Theory)			
Course No.	HSCV1 -B	VOC	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2.5 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Certificate with minimum 45%.	
Course Outcomes (COs): At the end of the course the student should be able to	
<ul style="list-style-type: none">• The Concept of Floriculture and ornamental plants.• Experiment various flower arrangement styles and art principles in arranging flowers.• Interpret the Importance of indoor plants in relation to use of lighting, care and use in the interiors.• Create Landscape design with natural and artificial components of landscape.• Apply the Modern trends in gardening and developing ornamental plants in home garden	
Content	45 Hrs
Unit-I. Floriculture	15 Hrs
Chapter No. 1 Floriculture - Meaning concept and importance, ornamental plants. Classifications – Based on life period- annuals, Biennials and perennials. Based on growth -Shrubs, herbs, trees, climbers and creepers.	3 Hrs
Chapter No. 2 Flower arrangement – definition, principles, Steps in arranging flower, selection of containers, equipment used.	5 Hrs
Chapter No. 3 Different styles of arrangement – traditional, modern and Oriental Styles – Ikebana, Moribana, Rikka, Seika arrangement. Applying art principles in arranging flowers	7 Hrs
Unit-II. Indoor Plants	12 Hrs
Chapter No. 4 Indoor plants – meaning, importance and classification of indoor plants, care, and maintenance of indoor plants	5 Hrs

Chapter No. 5 Decorational aspects in landscape area- lighting, garden furniture and dividers	4 Hrs
Chapter No. 6 Factors affecting growth of indoor plants-lighting, watering, temperature, humidity and manure. Selection of indoor plants for various rooms.	3 Hrs
Unit-III. Landscaping and Garden Design	18 Hrs
Chapter No. 7 Landscaping – Meaning and importance, The plan for landscape design – The foreground area, Private area and Service area. Types of Landscape – Soft landscape - Trees, Plants Flowers, shrubs, Edges, Hedges, Foliages, Climbers and Hard Landscape – Fountain, Cascades, Pathway, Lighting, Seating, Gazebo, Arches and pergola	9 hrs
Chapter No. 8 Garden design – formal and informal, principles of landscape gardening. Modern trends in gardening – Terrace garden, vertical gardens, Bog garden, sunken garden, Rock garden, Bonsai culture, roof gardens, plants in hanging baskets	9 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Experiment various flower arrangement styles and art principles in arranging flowers.		X		X	X						X	
Interpret the Importance of indoor plants in relation to use of lighting, care and use in the interiors								X	X		X	
Create Landscape design with natural and artificial components of landscape								X		X		X
Apply the Modern trends in gardening and developing ornamental plants in home garden			X	X				X				

Pedagogy - Theory

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Desh raj (2017) Floriculture at a glance, Kalyani publishers
2.	G. S. Randhawa , A.N. Mukhopadyay, A. Mukhopadhyay , 1998 Floriculture in India, Jai deep publishers Delhi.
3.	R.A.Preece,(1992), Designs on the Landscape, CBS publishers, NewDelhi
4.	Ross, R. (1999), colorful gardening – Bulbs, Ryland peters and small, London.
5.	Ross, R. (1999), colorful gardening – climbers, Ryland peters and small, London.
6.	http://agritech.tnau.ac.in/horticulture/horti_Landscaping_freshflower.html http://ncert.nic.in/vocational/pdf/kegr101.pdf

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	BA/B.Sc. Home Science		Semester	Sixth Sem
Course Title	Traditional textiles and costumes of India (Theory)			
Course No.	HSCC15 T	DSC	No. of Credits	4+2
Contact hours	60 Hrs		Duration of SEA/Exam	2.5 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Certificate with minimum 45%.	
Course Outcomes (COs): At the end of the course the student should be able to	
<ul style="list-style-type: none"> • Acquaint with Indian Textile and Clothing culture • Analyse traditional textiles based on the process of making it. • Understand the physical, geographical, cultural influence on costumes and textiles. • Differentiates traditional textiles from different parts of the country. • Appreciates the traditional Textiles and Costumes • Utilize traditional costume and textiles in contemporary context. • Understands the techniques of traditional embroidery 	
Content	60 Hrs
Unit-I. Introduction to Traditional Textiles	15 Hrs
Chapter No. 1 Textile Arts of India Weaving and weaving communities, Embroideries, Rugs and carpets, Saris Shawls and wraps.	3 Hrs
Chapter No. 2 History of Indian Traditional Textiles Chronological development of spinning, weaving and dyeing various trade routes.	4 Hrs
Chapter No. 3 Traditional Costumes- Classification of Traditional Textiles of India Painted and printed, Resist dyed, woven, and embroidered. Traditional Costume and Culture Influence of historical, economic, political and socio-cultural aspects on the evolution of traditional costume	8 Hrs
Unit-II. Ornamented and Resist Dyed Textiles	12 Hrs
Chapter No. 4 Pigment painted textiles Patachitra, Pichhavi and Phad Mordant painted textiles	8 Hrs

Kalamkari- Masulipatnam and Srikalahasti, Mata-ni- Pachhedhi. Printed textiles Hand block printed, Ajrakh, Rogan, Sanganer, Bagh	
Chapter No. 5 Yarn resist Patola, Mashru, Ikat, Bandhana Fabric resist Sungadi, Bhandej, Laheriya	6 Hrs
Unit-III. Woven textiles and Embroidery	12 Hrs
Chapter No. 6 Woven textiles of India: Rajasthan – Kota Doria, Gujarat –Sujani, Tangaliya, Pachhedhi Madhya Pradesh – Chanderi, Maheshwari, UttarPradesh – Brocades.	5 Hrs
Chapter No. 7 West Bengal – Dacca muslin, Balu Chari ,Tangail, Shawls from Kashmir, Assam and Nagaland, Maharashtra Paithani, Himroo , Andhra Pradesh and Telangana – Dharvaram, VenkatGiri, Gadwal and Narayan pet, Karnataka – Ilkal, moorkalmuru ,Tamil Nadu- Kanjeevaram	5 hrs
Chapter No. 8 Embroideries of India -kutch, ari, chikankari, kasuti, kashida, Chambaroomal	8 Hrs
Unit –IV Traditional Costumes of India:	15 Hrs
Chapter No. 9 Traditional Costumes of India: Jammu and Kashmir, Punjab, Haryana, Rajasthan, Gujarat, Maharashtra, Andhra Pradesh, Tamil Nadu, Kerala, Karnataka, Orissa, West-Bengal, Assam, Nagaland, Meghalaya, Manipur, Arunachal, Mizoram, Tripura, India Uttar Pradesh, Madhya Pradesh, and Bihar	8 Hrs
Chapter No. 10 Traditional costumes of Kerala, Karnataka, Orissa, West-Bengal, Assam, Nagaland, Meghalaya, Manipur, Arunachal, Mizoram, Tripura, India Uttar Pradesh, Madhya Pradesh, and Bihar	7 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Analyze traditional textiles based on the process of making it.		X		X	X						X	
Differentiates traditional textiles from different parts of the country								X	X		X	
Understands the techniques of traditional embroidery								X		X		X
Utilize traditional costume and textiles in contemporary context.			X	X				X				

Pedagogy - Theory

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Traditional textiles and costumes of India (Practical)	Practical Credits	2
Course No.	HSCC16 P	Contact Hours:	52/13Sessions
Practical Topics - 2 credits		13 - 15 weeks	
Unit I: Embroideries of India – 1. Kashida of Kashmir 2. Chamba of Himachal Pradesh 3. Phulkari and Bagh of Punjab 4. Chikankari of Uttar Pradesh 5. Kantha of Bengal			4 Hrs
Unit II: Embroideries of India 6. Embroideries of Manipur 7. Embroideries of Gujarat 8. Gold and Silver embroidery 9. Bead work			15 Hrs
Unit III: Preparation of portfolio • Pictures of traditional textiles with the descriptive analysis • Pictures of the traditional costumes with constructional details. • Samples of embroidery with its theoretical details			6 Hrs

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Record	10
Test 2	10
Assignment / project	5
Total	25 marks + 25 marks = 50 marks

References:	
1.	Bhatnagar P. (2004), Traditional Indian Costumes and Textiles, Abhishek Publications, New Delhi
2.	Chisti R.K., (2013) Sari tradition and beyond, Roli Publication
3.	Ghurye G. S. (1995), Indian Costume, Popular Prakashan, Bombay
4.	Irwin, J. H. & Hall, M. (1973). Indian Embroideries. Ahmedabad: Historic Textiles of India at Calico Museum of Textiles
5.	Karolia, A. (2019), Traditional India Handcrafted Textiles: Techniques, Processes and Designs Vol.I and II, Niyogi books, Delhi
6.	Pathak A. (2006), Indian Costumes, Roli Books, Mumbai
7.	Saraf, D. N. (1982). Indian Crafts. New Delhi: Vikas Publishing House Limited.
8.	Singh M. (2011) Traditional and Beyond Handcrafted Indian Textile, Roli Books Pvt. Ltd, New Delhi.
9.	Ritu Kumar, (2008). Costumes and Textiles of Royal India, Antique collectors club, India.
10.	John Gillow, Nicholas Barnard, (2008). Indian Textiles, Thames & Hudson, London
11.	Carl Kohler, (2012). A History of Costume, Dover Publications, INC, New York

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	BA/B.Sc. Home Science		Semester	Sixth Sem
Course Title	Nutritional Management (Theory)			
Course No.	HSCC17 T	VOC	No. of Credits	3+2
Contact hours	45 Hrs		Duration of SEA/Exam	2.5 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Certificate with minimum 45%.	
Course Outcomes (COs): At the end of the course the student should be able to	
<ul style="list-style-type: none"> • Design food plans and assess the adequacy of diets to meet the nutritional needs of humans at various stages of life cycle. • Assess nutrition issues and conditions and recommend nutrition intervention and support to promote the health and wellbeing. • Have the knowledge, both to develop and critique nutritional interventions designed to improve human health and well-being at specific age associated time points. • On completion of the course students will be able to critically assess nutritional requirements and nutritional health status of an individual 	
Content	45 Hrs
Unit-I. Introduction to RDA (Recommended Dietary Allowances /EAR (Estimated Average Requirements) and Balanced Diet	7 Hrs
Chapter No. 1 Basic concept and purposes of Recommending the Dietary Allowances and Factors Affecting RDA/EAR.	2 Hrs
Chapter No. 2 Requirements RDA/ EAR for various age groups. Uses of ICMR- RDA/EAR in planning balance diet.	3 Hrs
Chapter No. 3 Exchange system and Dietary Diversity	2 Hrs
Unit-II. Nutrition in Pregnancy, Lactation, and Infancy	16 Hrs
Chapter No. 4 Physiological Changes occurring during Pregnancy. Importance of Food and Nutritional Care and Requirement during pregnancy. General Dietary and nutritional Problems and Complication	6 Hrs

Chapter No. 5 Physiology and Hormones involved in Lactation. Food supplements and galactagogues. Factors Affecting the Volume and Composition of Breast Milk. Nutritional Requirements during lactation	4 Hrs
Chapter No. 6 Growth and Development of Infants. Composition of Human Milk and Human Milk Substitute. Bottle Feeding and related Problems. Weaning and Supplementary Feeding Foods. Feeding Problems and Complications. Use of growth charts and standards and prevention of growth faltering	6 Hrs
Unit-III. Nutrition in Childhood, Adolescence, Adult and Elderly	15 Hrs
Chapter No. 7 Growth and Development of Pre School, School Going Children and Adolescence. Food and Nutritional Requirements. Factors to be considered while Planning Diet for Children and Adolescents.	5 Hrs
Chapter No. 8 Growth Spurt during Adolescence. Food Habits, Dietary Guidelines, Food and Nutritional Requirements. Nutritional and Behavioural Problems and Eating Disorders	4 hrs
Chapter No. 9 Reference Man and Reference Woman. Food and Nutritional Requirements for Adults doing Different Activities. Role of exercise and Diet. Onset of Non communicable diseases/lifestyle disorders – Prevention and management	4 Hrs
Chapter No. 10 Processes of Aging. Food and Nutritional Requirements of Elders. Nutrition Related Problems of Old Age. Dietary Guidelines and diet Modifications	3 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Ability to plan and assess the food adequacy of diets to meet the nutritional needs of individuals at various stages of life cycle		X		X	X						X	
Understanding of nutritional issues and condition's ability to recommend nutritional intervention to support and promote the health and wellbeing of individuals								X	X		X	

Knowledge, to develop and critique nutritional interventions designed to improve and well-being at specific stage of life cycle								X		X		X
Ability to critically assess the nutritional requirement and nutritional health status of an individual			X	X				X				

Pedagogy - Theory

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Nutritional Management (Practical)	Practical Credits	2
Course No.	HSCC18 P	Contact Hours:	52/13Sessions
Practical Topics - 2 credits		13 - 15 weeks	
Unit I: 1. Planning, Preparing and Evaluating Menu during Pregnancy Planning, 2. Preparing and Evaluating Menu during Lactation		4 Hrs	
Unit II: 1. Planning, Preparing and Evaluating Menu during Pregnancy Planning, 2. Preparing and Evaluating Menu during Lactation		15 Hrs	
Unit III: 5. Planning, Preparing and Evaluating Menu for School Going Children 6. Planning, Preparing and Evaluating Menu for Adolescents		6 Hrs	
Unit IV: 7. Planning, Preparing and Evaluating Menu for Adults 8. Planning, Preparing and Evaluating Menu for Elderly		5 Hrs	

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Record	10
Test 2	10
Assignment / project	5
Total	25 marks + 25 marks = 50 marks

References:	
1.	Mahtab, S, Bamji, Kamala Krishnasamy, Brahman, G.N.V. (2012) Text Book of Human Nutrition, Third Edition, Oxford and IBH Publishing Co. P. Ltd., New Delhi
2.	Srilakshmi, B. (2013), Dietetics, New Age International (P) Ltd., New Delhi.
3.	SunetraRoday (2017). Food Science and Nutrition, Oxford University Press, New Delhi
4.	Longvah, T, Ananthan, R, Bhaskarachary, K, Venkaiah, K. (2017). Indian Food Composition Tables (IFCT), Indian Council of Medical Research, National Institute of Nutrition, Hyderabad.
5.	ShakuntalaManay, Shadaksharaswamy. M (2013) Foods, Facts and Principles, New Age International Pvt Ltd Publishers, 2nd Edition) Ltd., New Delhi.
6.	Swaminathan, M. (2012), Advanced Textbook on Food and Nutrition, Vol. 1, Second Edition, Bangalore Printing and Publishing Co. Ltd., Bangalore.

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	BA/B.Sc. Home Science		Semester	Sixth Sem
Course Title	Resource Management (Theory)			
Course No.	HSCC19 T	DSC	No. of Credits	3+2
Contact hours	45 Hrs		Duration of SEA/Exam	2.5 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Certificate with minimum 45%.

Course Outcomes (COs): At the end of the course the student should be able to

- Understand the available resources and develop the ability to evaluate the managerial efficiency and effectiveness in the family and other organization.
- Acquire an understanding of real-world challenges in HRM and identify measures to ensure a stable work environment efficiently through proper coordination, employee empowerment and training practices
- Critical thinking skills by developing a data-driven approach to improve business productivity and performance.
- Understand International Human Resource Management

Content	45 Hrs
Unit-I. Introduction to Resource Management	15 Hrs
Chapter No. 1 Resources: Definition and Classification – Human and Non-Human Resources, Renewable and Non-Renewable resources, Energy conservation and sustainability Management: Definition, Motivating factors, Managerial Process, Decision making and Problem Solving.	2 Hrs
Chapter No. 2 Time Management Time plan, Tools, Process and practices.	3 Hrs
Chapter No. 3 Money Management Budget plan, Account Keeping, Saving Process and Practice	2 Hrs
Chapter No. 4 Energy Management Fatigue, Work simplification, Workspace management	2 Hrs

Unit-II. Human Resource Management	18 Hrs
Chapter No. 5 Fundamentals of Human Resource Management Concepts, Roles and Responsibilities, HR policies, Principles and Practices, Managerial Decisions and Problem Solving, Manpower planning and Resourcing, Organization Structure, and behaviour	6 Hrs
Chapter No. 6 Recruitment and Selection Concepts, Factors Affecting Recruitment, Types of Recruitment, Process of Selection, Selection Tests, Barriers in Selection	4 Hrs
Chapter No. 7 Performance and Compensation Management Objectives and methods of Performance and Appraisal, Appraisal Forms and Formats, Competency Mapping, Forms and bases for compensation, job evaluation and compensation/evaluation systems, Rewards, Promotion and Transfer	6 Hrs
Unit-III. Human Resource Development	13 Hrs
Chapter No. 8 Managerial Communication and Skill Development Employee training and development, Managerial Accounting and Business statistics, HR Audit, Corporate Social Responsibility and Business Ethics, Government regulations and Labour Laws.	5 Hrs
Chapter No. 9 International Human Resource Management Human Resources in a Comparative Perspective, International Recruitment and Selection, Challenges of IHRM, International Labor Standards, Approaches to International Compensation	4 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Understand the available resources and develop the ability to evaluate the managerial efficiency and effectiveness in the family and other organization		X		X	X						X	
Acquire an understanding of real-world challenges in HRM and identify measures to ensure a stable								X	X		X	

work environment efficiently through proper coordination, employee empowerment and training practices												
Critical thinking skills by developing a data-driven approach to improve business productivity and performance								X		X		X
Understand International Human Resource Management			X	X				X				

Pedagogy - Theory

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Resource Management (Practical)	Practical Credits	2
Course No.	HSCC20 P	Contact Hours:	45/13Sessions
Practical Topics - 2 credits		13 - 15 weeks	
Unit I: Preparation of time plans for self		4 Hrs	
Unit II: Time and Motion Studies for simplifying work- Flow process chart etc.,		15 Hrs	
Unit III: Planning an Event - management and evaluation, with reference to - Managerial process Resource optimization - time, money, products, space, human capital and natural resources		6 Hrs	
Unit IV: Organize a panel discussion on International Labor laws/ International Compensation		5 Hrs	

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Record	10
Test 2	10
Assignment / project	5
Total	25 marks + 25 marks = 50 marks

References:	
1.	Armstrong, M. (2003). A Handbook of Human Resource Management Practice. Kogan Page, London, UK
2.	Gratton, L. (1994). Implementing Strategic Intent: Human Resource Processes as a Force for Change, Business Strategy Review. 5(1):47-66.
3.	Heneman, H. G. and Judge, T. A. (2003). Staffing Organizations, McGraw-Hill, London, UK.
4.	Sharma, I. J. 1984. The Culture Context of Indian Managers, Management and Labour Studies, 9:72- 80
5.	Singh, K. (2003). Strategic HR Orientation and Firm Performance in India, International Journal of Human Resource Management, 14(4): 530-4
6.	Gross. I. H.,Crandall,E.W.andKnoll,M.M.(1980). <i>Management for Modern Families</i> . New Jersey: Prentice Hall Inc
7.	Bhargava, B. (2005). <i>Family Resource Management and Interior Decoration</i> , Jaipur: Apple Printer and V. R. Printers
8.	Varghese, M. A., Ogale. N. and Srinivasan K. (1985). <i>Home Management</i> . New Delhi: New Age International (P) Limited, Publishers (ISBN 13: 9780852269046

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	BA/B.Sc. Home Science		Semester	Sixth Sem
Course Title	Consumer Education (Theory)			
Course No.	HSCE2-T-(A)	DSE	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%	
<p>Course Outcomes (COs): At the end of the course the student should be able to</p> <ul style="list-style-type: none"> • Gain knowledge on Consumer rights and responsibilities. • Acquire knowledge of the Consumer protection act and able to file a complaint in consumer court. • Understand the various standardization and quality control measures. • Develop knowledge of food laws 	
Content	45 Hrs
Unit-I. Consumer in India	15 Hrs
<p>Chapter No. 1 Definition of a consumer, Objects and Purpose of Consumer Education, Role of consumers in the economy, Types of consumer problems – products and service related, Causes and solutions.</p>	8 Hrs
<p>Chapter No. 2 Consumer in the Marketplace, Money and Banking, Investments, Credit counseling.</p>	7 Hrs
Unit-II. Consumer Protection	15 Hrs
<p>Chapter No. 3 Consumer Protection, Consumer rights and responsibilities, Consumer Protection Act – Salient Features, Limitations and Guidelines for filling consumer complaint.</p>	8 Hrs
<p>Chapter No. 4 Basic legislative framework for consumer protection in India, Consumer Protection Act 1986 COPRA, Alternative Redressal mechanisms</p>	7 Hrs

Unit-III. Standardization and quality control measures	15 Hrs
Chapter No. 5 Standards of Weights and Measures Act, 1976, ISI, BIS, FPO, AGMARK, ISO, Eco mark, Wool mark, Silk mark, Cotton mark, Handloom mark	8 Hrs
Chapter No. 6 BEE star labeling, FSSAI, Codex, HACCP, Food laws	7 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Explain the basic concepts related to consumer education and protection.			X		X							
Acquire skills in money management and investment.				X	X							
Learners will understand consumer goods and services.							X	X				
Explore the basic legislative framework for consumer protection.							X		X			
Capability to take actions to improve consumer well-being.					X		X					

Pedagogy - Theory

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:

1.	East, Robert. (1990). Changing Consumer Behaviour. Cassel Educational Limited, Artillery House, Artillery Row, London
2.	Engel, J.F. and Black, Well R.D. (1990). Consumer Behaviour, 4 th Edition. Holt Sanders International Edition.
3.	<u>George Edward Damon</u> . (1938). Consumer Education A Textbook, <u>Grand Rapids herald-review</u> publication.
4.	Khanna, S.R., Hanspal, S., Kapoor, S. & Awasthi, H. K. (2007). Consumer Affairs. Universities Press India Pvt. Ltd.
5.	<u>Marion Giordan</u> . (1980). Consumer Education (A Handbook for Teachers), Routledge Library Edition.
6.	<u>Ross E. Lowe</u> , <u>Charles A. Malouf</u> , <u>Annette L. Jacobson</u> · (2006), Consumer Education and Economics, <u>McGraw-Hill Education</u>
7.	Sawhney, H. K. & Mital, M. (2007). Family Finance & Consumer Studies. Elite Publishing House Pvt. Ltd
8.	Seetharaman, P. and Sethi, M. (2001). Consumerism: Strength and Tactics. New Delhi, CBS Publishers.

Date**Course Coordinator****Subject Committee Chairperson**



Government of Karnataka

Model Curriculum

Program Name	BA/B.Sc. Home Science		Semester	Sixth Sem
Course Title	Ergonomics (Theory)			
Course No.	HSCE2-T-(B)	DSE	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2.5 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Certificate with minimum 45%.

Course Outcomes (COs): At the end of the course the student should be able to

- Use the concept of ergonomics design.
- Applying proper posture to avoid health issues.
- Analyzing anthropometry dimensions of the Human body.
- Outline the problems in the musculoskeletal system and describe prevention method.
- Apply the appropriate noise reduction materials

Content	45 Hrs
Unit-I. Ergonomics	15 Hrs
Chapter No. 1 Ergonomics – Concept, Definition, Characteristics of places, things and activities. Human Factors, Principles of Ergonomics, Occupational factors affecting the worker.	5 Hrs
Chapter No. 2 Anthropometry - Definition, Types of data – Static dimensions and Dynamic dimensions.	5 Hrs
Chapter No. 3 Definition and Applicability of Stature – Eye height, Elbow height, Sitting height, Shoulder and Elbow breadth, Thigh clearance and Popliteal height, Maximum and Minimum Vertical and Horizontal reach	5 Hrs
Unit-II. Posture and MSD	18 Hrs
Chapter No. 4 Posture – Sitting, Standing, Lying down, Change of posture, Movement – Lifting, Pulling and Pushing, Problems of Posture – Kyphosis, Lordosis, Scoliosis and squatting and cross legged problems. Exercises for Postural problems.	9 Hrs

Chapter No. 5 Musculoskeletal Disorder (MSD) – Strain, Tendinitis, Joints, Ligaments. Carpel Tunnel Syndrome (CTS), Back, Neck, Knee problem	9 Hrs
Unit-III. Environmental Factors	12 Hrs
Chapter No. 6 Noise – Noise Guidelines, Noise reduction materials. Temperature – Heat stress, Heat strain, Materials used for thermal comfort, Heat Exchange - Convection, Conduction and Radiation	8 Hrs
Chapter No. 7 Stress – Definition, types and coping techniques	4 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Applying proper posture to avoid health issues.		X		X	X						X	
Analyzing anthropometry dimensions of the Human body								X	X		X	
Outline the problems in the musculoskeletal system and describe prevention method								X		X		X
Apply the appropriate noise reduction materials			X	X				X				

Pedagogy - Theory

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Julius Panero and Martin Zelnik, (1979). Human Dimension and Interior Space. Watson – Guptill Publications, New York
2.	Khan M.I., (2014). Industrial Ergonomics. PHI Learning Private Limited, New Delhi
3.	Umesh Prasad, (2011). Essential of Ergonomics. Sonali Publications, New Delhi
4.	Manjit Kaur Chauhan, (2015). Ergonomics Practical Manual for Beginners. Authors press, New Delhi.
5.	Tayyari. F and Smith J.L, (1997). Occupational Ergonomics – Principles and Applications, Chapman and Hall, Tokyo
6.	Jan Dul and Bernard Weerdmeester, (2008). Ergonomics for Beginners – A quick reference guide, CRC Press, New York.

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	BA/B.Sc. Home Science		Semester	Sixth Sem
Course Title	Public Health Nutrition (Theory)			
Course No.	HSC – VOC – 2A	VOC	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2.5 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%	
<p>Course Outcomes (COs): At the end of the course the student should be able to</p> <ul style="list-style-type: none"> • Gain insight into the national nutritional problems and their implementation • Familiarize the students regarding the prevention and management of nutritional problems • Understand the PDS system and its role in food security. • Analyse Different methods to study dietary patterns • Know the working of national and international organizations 	
Content	45 Hrs
Unit-I. Concept of Public Nutrition	5 Hrs
<p>Chapter No. 1 Definition of Nutrition and Health.</p>	
<p>Chapter No. 2 Nutritional problems confronting the country.</p>	
<p>Chapter No. 3 Definition of food security, nutrition security; determinants of food security b. Food security system in India - PDS</p>	30 Hrs
Unit-II. Nutritional problems in India	
<p>Chapter No. 4 Prevalence, Etiology, and clinical manifestations.</p>	
<p>Chapter No. 5 Preventive and Corrective measures for a. Malnutrition - PEM b. Vitamin A Deficiency c. Nutritional Anemia</p>	

<p>Chapter No. 6 Assessment of Nutritional Status in community a. Anthropometric Assessment: Measurement of body weight, stature, mid upper arm circumference, standards (NCHS - weight for height, weight for age.</p>	
<p>Chapter No. 7 Clinical Assessment: clinical signs of nutritional disorders c. Dietary Assessment: Family dietary survey, Assessment of dietary intake of individuals.</p>	
<p>Unit-III. Strategies to combat nutritional problems</p>	10 Hrs
<p>Chapter No. 8 a. Diet or food based strategies b. Supplementation c. Fortification and Enrichment d. Nutrition and Health Education</p>	
<p>Chapter No. 9 National and International organizations to combat malnutrition 1. National organizations - ICMR, NIN, CFTRI 2. International organizations - FAO, WHO, UNICEF</p>	

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Gain insight into the national nutritional problems and their implementation			X		X							
Familiarize the students regarding the prevention and management of nutritional problems				X	X							
Understand the PDS system and its role in food security.							X	X				
Different methods to study dietary patterns							X		X			
Know the working of national and international organizations					X		X					

Pedagogy - Theory

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Jelliffe D B 1966, The assessment of Nutritional status of the community - WHO monograph series, Geneva
2.	Park and Park, 2000, Preventive and Social medicine 13th Edn, IWS Banarsidas Bhanot publication
3.	Mahtab S Banji, N Prahlad Rao, Vinodini Reddy, 1999, Human Nutrition, Oxford and IBH publishing Co
4.	Owen A Y and Frackle R T., (1996): Nutrition in the Community. The Art of Delivering Services, 2nd Edition Times Mirror/Ir4osby

Date

Course Coordinator

Subject Committee Chairperson

**Model Curriculum
of
B.Sc.with
Nutrition and Dietetics
5th and 6th Semester
(Model II A)**

KARNATAKA STATE HIGHER EDUCATION COUNCIL

Sub-committee members of B.Sc. Nutrition and Dietetics

1.	Dr. Sangeeta Pandey
2.	Dr. Geetha Santhosh
3.	Dr. V. Padma
4.	Dr Usha Devi C
5.	Dr Asha G
6.	Mrs Vidhya K

**Content of courses for B.Sc. with Nutrition & Dietetics & B.Sc. Nutrition & Dietetics
II A Model**

Semester	Course Code.	Category of course	Theory/ Practical	Credits	Paper Titles	Marks	
						S.A	I.A
I	ND T C 1.1	DSC 1	Theory	4	Fundamentals of nutrition	60	40
	ND P C 1.1	DSC 1	Practical	2	Fundamentals of nutrition	25	25
	ND OE 1	OE 1	Theory	3	Fundamentals of food and health / Health lifestyle and nutrition	60	40
Exit option with certificate (50 credits)							
II	ND T C 2.1	DSC 2	Theory	4	Principles of Food Science and Preservation	60	40
	ND P C 2.1	DSC 2	Practical	2	Principles of Food Science and Preservation	25	25
	ND OE 2	OE 2	Theory	3	Food safety and Hygiene/ Food Adulteration	60	30
III	ND T C 3.1	DSC 3	Theory	4	Nutrition through life span	60	40
	ND P C 3.1	DSC 3	Practical	2	Nutrition through life span	25	25
	ND OE 3	OE 3	Theory	3	Traditional Foods and Health/ Nutritional Assessment	60	40
IV	ND T C 4.1	DSC 4	Theory	4	Human Physiology	60	40
	ND P C 4.1	DSC 4	Practical	2	Human Physiology	25	25
	ND OE T 4	OE 4	Theory	3	Nutrition in weight management/ Diet in life style disorder	60	40
V	ND T C 5.1	DSC 5	Theory	4	Clinical Nutrition & Dietetics – 1	60	40
	ND P C 5.1	DSC 5	Practical	2	Clinical Nutrition & Dietetics – 1	25	25
	ND T C 5.2	DSC 6	Theory	4	Food Microbiology	60	40

	ND P C 5.2	DSC 6	Practical	2	Food Microbiology	25	25
	ND T C 5.3	DSC 7	Theory	4	Assessment of Nutritional Status	60	40
	ND T E 1	DSE 1	Theory	3	Food Additive / Nutrition Care Process	60	40
	ND VOC T 1	VOC 1	Theory	3	Food Safety & Regulation	60	40
VI	ND T C 6.1	DSC 8	Theory	4	Clinical Nutrition & Dietetics – II	60	40
	ND P C 6.1	DSC 8	Practical	2	Clinical Nutrition & Dietetics – II	25	25
	ND T C 6.2	DSC 9	Theory	4	Intermediary metabolism	60	40
	ND P C 6.2	DSC 9	Practical	2	Intermediary Metabolism	25	25
	ND T C 6.3	DSC 10	Theory	3	Principles and practices in Public Health Nutrition	60	40
	ND T	DSE 2	Theory	3	Food Sanitation & Hygiene/ Maternal & Child Nutrition	60	40
	ND VOC T 2	VOC 2	Theory	2	Food Analysis	60	40
	ND VOC P 2	VOC 2	Practical	1	Food Analysis	25	25

Abbreviation

ND – Nutrition and Dietetics; DSC – Discipline Core; DSE –Discipline Specific

Elective; T – Theory/ P – Practical; VOC-Vocational; OE- Open Elective; E-Elective; MIN -minor



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Nutrition & Dietetics		Semester	Fifth Sem
Course Title	Clinical Nutrition & Dietetics – I (Theory)			
Course No.	ND T C 5.1	DSC 5	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Know the role of dietetics in preventive, promotive and curative health care 2. Understand the clinical condition with relevant data (laboratory, anthropometry, pharmacology) 3. Develop skills to make appropriate dietary modifications in clinical conditions. 	
Content	45 Hrs
Unit – 1	15 Hrs
Chapter No. 1: Introduction to Diet therapy – objectives. Nutrition assessment in clinical set up, Nutrition Care Process (ADIME). Role of dietician, responsibilities, code of ethics.	5 Hrs
Chapter No. 2: Therapeutic meal planning - factors to be considered, food groups, exchange list.	5 Hrs
Chapter No. 3: Types of hospital diet; modification of normal diet to therapeutic diet, Nutrition support – Enteral and parenteral nutrition overview.	5 Hrs
Unit – 2:	15 Hrs
Chapter No. 4: Weight management: Underweight, overweight, etiology, assessment and treatment, dietary guidelines, challenges – eating disorders and fad diets.	5 Hrs
Chapter No. 5: Cardiovascular disorder: Atherosclerosis, Dyslipidemia, hypertension – etiology, risk factors, dietary management.	5 Hrs

Chapter No. 6: Food sensitivity: Definition, diagnosis, nutrition management – allergens.	5 Hrs
Unit -3:	15 Hrs
Chapter No. 7: Infections and febrile conditions: host defence mechanism Dietary management in acute and chronic fever – typhoid, malaria, tuberculosis.	5 Hrs
Chapter No. 8: Gastrointestinal disorders: Diarrhoea, Constipation, GERD, Peptic ulcers, Irritable Bowel Syndrome, Inflammatory Bowel Disease (Lactose intolerance and gluten intolerance).	5 Hrs
Chapter No. 9: Liver & biliary system: Viral hepatitis, Cirrhosis, cholecystitis, cholelithiasis, acute & chronic pancreatitis	5 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Know the role of dietetics in preventive, promotive and curative health care	X						X					
Understand the clinical condition with relevant data (laboratory, anthropometry, pharmacology)					X							
Develop skills to make appropriate dietary modifications in clinical conditions		X									X	

Pedagogy

Lecture, demonstration, hands on learning through projects, experiments, hospital dietary visits, case studies, workshops.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Presentation / Assignment	10
Project quiz	10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Clinical Nutrition & Dietetics I (Practical)	Practical Credits	2
Course No.	ND P C 5.1	Contact Hours:	
Practical Topics - 2 credits		13 - 15 weeks	
<ol style="list-style-type: none"> 1. Case study - Nutritional Assessment in Clinical Set-up - SOAP, 2. Nutrition Care Process - ADIME 3. Planning and preparation of modified diets Diet planning, development of nutrition aids, counselling guidelines 4. GI condition – peptic ulcer, lactose and gluten intolerance 5. Overweight 6. Underweight 7. Cirrhosis 8. Hepatitis 9. Food allergens – Nut, Milk 			

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Internal Assessment	25
Summative Assessment (ESE)	25
Total	25 marks + 25 marks = 50 marks

References:	
1.	Krause MV and Mahan, Food (2008), Nutrition And Diet Therapy, WS Saunders Co.,12th edition
2.	Antia, F.P. (2005): Clinical Nutrition and Dietetics, Oxford University Press, Delhi
3.	Robinson,C.H;Lawler,M.R.Chenoweth,W.L;and Garwick,A.E (1986):Normal and Therapeutic Nutrition,17th Ed., Mac Millan Publishing Co
4.	Shills ME and Shike M (2006), Modern Nutrition in Health and Disease, 10th edition, Lippincott Williams and Wilkins

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Nutrition & Dietetics		Semester	Fifth Sem
Course Title	Food Microbiology (Theory)			
Course No.	ND T C 5.2	DSC 6	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Understand about the origin of microbiology and characteristics of microorganisms. 2. Gain knowledge on factors affecting growth and death of microorganisms 3. Learn about microbial food spoilage and food-borne illnesses 4. Acquire knowledge on the role of food microbiology in biotechnology 	
Content	45 Hrs
Unit – 1 Introduction to Microbiology	15 Hrs
Chapter No. 1: Scope of Microbiology, Food Microbiology: its origins - historical roots (in brief), Germ theory of Disease.	5 Hrs
Chapter No. 2: Naming, Classification and identification, morphological characteristics of Bacteria, Fungi and viruses.	5 Hrs
Chapter No. 3: Growth and cell division, Bacterial Growth, Culturing bacteria- (Methods of obtaining pure cultures, culture media, maintaining cultures).	5 Hrs
Unit – 2: Factors affecting microbial growth and death	15 Hrs
Chapter No. 4: Factors affecting the growth of micro-organisms- temperature, water activity, pH, oxygen, redox and nutritional factors; interaction of factors and between organisms.	5 Hrs
Chapter No. 5: Death of micro-organisms and microbial populations- a) Heat, preservation of foods (Appertization, Pasteurization).	5 Hrs

b) Chemical agents- factors influencing activity of sanitizers, preservatives, Hurdle effect. c) Radiation-preservation, d) High pressure (brief).	
Chapter No. 6: Definition of FSSAI, HACCP- A Food Safety Assurance system.	5 Hrs
Unit -3: Food Spoilage and Food borne disease	15 Hrs
Chapter No. 7: Nature, Causes, Contamination, Composition of spoilage, Changes in foods caused by spoilage organisms Influence of processing.	5 Hrs
Chapter No. 8: Spoilage of important food commodities and food products-Meat, Fish, Egg and Milk, Fruits and Vegetables, Cereals.	5 Hrs
Chapter No. 9: Cause of disease, investigations and origins of food poisoning outbreaks, importance of food poisoning to individual and economy, control. Food poisoning bacteria causing: 1. Infections- Salmonella, Shigella, E. coli, Vibrio cholerae 2. Intoxications- Staphylococcus aureus, Clostridium Botulinum 3. Viruses- Hepatitis A	5 Hrs
Unit -4: Role of Microbiology in Biotechnology	
Chapter No. 10: Genetically modified foods Role of Microorganisms in fermented foods- Fermented-baked food preparations, Fermented vegetable foods, soyabean products, dairy products, other meat products, economically important fermentation products (Beer & Wine).	

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Understand about the origin of microbiology and characteristics of microorganisms						X						
Gain knowledge on factors affecting growth and death of microorganisms						X						
Learn about microbial food spoilage and food-borne illnesses						X						
Acquire knowledge on the role of food microbiology in biotechnology						X	X					

Pedagogy

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Presentation / Assignment	10
Project quiz	10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Food Microbiology (Practical)	Practical Credits	2
Course No.	ND P C 5.2	Contact Hours:	
Practical Topics - 2 credits		13 - 15 weeks	
<ol style="list-style-type: none"> 1. Introduction to the microbiology lab Safety guidelines, Good microbiological laboratory practice (GMLP), Resources (equipment, apparatus, materials) 2. Microscopy: Using microscope- Compound microscope, Electron microscope. 3. a. Stained preparations – identification of fungi b. Preparing a smear, Simple stain, Differential stain (Gram’s staining method) 4. Sterilization, and disinfection- Use of autoclave 5. Culture Media- Preparation of culture media Preparing serial dilutions (Observation & enumeration of Molds from Spoiled Bread) Inoculation and other aseptic procedures Working with yeast and molds- Streak plate, Pour plate, Spread plate Incubation, Clearing up 6. Spoilage of foods from different food groups – Observation of changes under the microscope, Identification of food spoilage and deterioration under different storage conditions, MPN method (Demonstration) 7. Preparation of fermented products and analyzing microbial load in: <ol style="list-style-type: none"> a. Fermented products- idly, kimchi. Sauerkraut, fermented rice (pazhaya kanji) b. Study of probiotics & prebiotics-rolled oats with curds, kefir with green bananas, beans with onion and garlic pickles. 8. Case studies – quality operation cycle of commercial kitchen / MCC canteen / Milk processing unit / any food industry to understand HACCP 9. Safe food-waste disposal strategies (Case studies) 10. Disinfection and sanitation measures (Case studies) 			

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Internal Assessment	25
Summative Assessment (ESE)	25
Total	25 marks + 25 marks = 50 marks

References:	
1.	Norman G. Marriott, (1985) Principles of sanitation, Van Nostrand Reinhold company, Newyork.
2.	Mario Stanga, (2010) Sanitation: Cleaning and Disinfection in the Food Industry, Wiley.
3.	Y. H. Hui, L. Bernard Bruinsma, J. Richard Gorham, Wai-Kit Nip, Phillip S. Tong, Phil Ventresca (2002) Food plant sanitation, CRC Press.
4.	Y. H. Hui, (2014) Plant sanitation for food processing and food service, CRC Press.
5.	Jay, J. M., Loessner, M. J., & Golden, D. A. (2008). Modern food microbiology. Springer Science & Business Media.
6.	Bibek Ray (2014) Fundamental Food Microbiology. CRC press,

Date

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Government of Karnataka

Model Curriculum

Program Name	B.Sc. Nutrition & Dietetics		Semester	Fifth Sem
Course Title	Assessment of Nutritional Status (Theory)			
Course No.	ND T C 5.3	DSC 7	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> To gain knowledge on comprehensive nutrition assessment including anthropometric measurements, body composition measurements, biochemical and dietary analyses. Successfully identify and document malnutrition based on the screening and assessment tools. Apply the Nutrition Care Process for nutrition assessment, diagnosis, and treatment plans 	
Content	45 Hrs
Unit – 1	15 Hrs
Chapter No. 1: Introduction to Nutritional Assessment Nutrition Care Process-(NCP)- ADIME Nutritional screening: MST, MUST, SGA, MNA, GLIM Standards for Nutrient Intake: Recommended Dietary Allowances, EAR. Nutrition Labeling of Food.	5 Hrs
Chapter No. 2: Biochemical Assessment – Protein, Iron, Vitamin A Understanding - Lipid profile, LFT, RFT, glucose.	5 Hrs
Chapter No. 3: Clinical Assessment- Assessment of micronutrient status-hair, nails, skin perioral, oral, eyes, joints, bones Nutrition Focused Physical Examination (NFPE)-malnutrition and muscle wasting, fat wasting, assessing of fluid status.	5 Hrs
Unit – 2:	15 Hrs
Chapter No. 4: Anthropometry: Introduction and Importance Measuring Length Stature, and Head Circumference - WHO Growth Charts for children and adolescents.	5 Hrs

Chapter No. 5: Anthropometry for Non ambulatory/hospitalised patients - knee height, calf circumference, midarm circumference, and subscapular skinfold thickness, Arm Span, Demi-span.	5 Hrs
Chapter No. 6: Body Fat Distribution - BMI (WHO and ASIAN) Waist circumference, Hip circumference, WHR. Body Composition Methods and Applications - Skinfold Measurements, Underwater weighing and Air displacement, BIA and DEXA.	5 Hrs
Unit -3:	15 Hrs
Chapter No. 7: Dietary assessment Importance of National Dietary and Nutrition Surveys.	5 Hrs
Chapter No. 8: Techniques in measuring food intake: 24 hr recall method,3-day recall, Food record or diary, Food frequency questionnaire, Diet history, Duplicate food collection method, Food balance sheet, Telephonic interviews, weighment method (raw and cooked), Digital imaging methods, diet software.	10 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
To gain knowledge on comprehensive nutrition assessment including anthropometric measurements, body composition measurements, biochemical and dietary analyses.	X	X								X		
Successfully identify and document malnutrition based on the screening and assessment tools.										X		
Apply the Nutrition Care Process for nutrition assessment, diagnosis, and treatment plans										X		

Pedagogy

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Presentation / Assignment	10
Project quiz	10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Gordon CC, Chumlea WC, Roche AF. 1988. Stature, recumbent length, and weight. In Lohman TG, Roche AF, Martorell R (eds.), Anthropometric standardization reference manual. Champaign, IL: Human Kinetics Books
2.	Mosby's Manual of Diagnostic and Laboratory Tests 6th Edition by Kathleen Deska Pagana PhD RN, Timothy J. Pagana MD FACS
3.	Robert D. Lee David C. Nieman (2012) Nutritional Assessment 6 th Edn. Publisher-McGraw Hill ISBN978-0-07-802133-6
4.	Nutrient requirements for Indians (2020) A Report of the expert committee group. NIN, ICMR

Date

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Government of Karnataka

Model Curriculum

Program Name	B.Sc. Nutrition & Dietetics		Semester	Fifth Sem
Course Title	Food Additives (Theory)			
Course No.	ND T E 1	DSE 1	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Understand food safety laws and regulation 2. Gain knowledge on different food additives 3. Know the role of food additives in food fortification 	
Content	45 Hrs
Unit – 1	15 Hrs
Chapter No. 1: Food Additives: Definition, Classification - Natural Vs. Synthetic, Function, uses, intentional food additives Principle for using food additives.	5 Hrs
Chapter No. 2: Safety and Regulation of Food Additives – Coloring matter, preservatives, and antioxidants.	5 Hrs
Chapter No. 3: Non-Permitted Synthetic Food Additives and its effect on health.	5 Hrs
Unit – 2:	15 Hrs
Chapter No. 4: Direct additives: Leavening agents - classification, uses.	5 Hrs
Chapter No. 5: Flavoring agent - uses, specific flavours and flavour components, natural & synthetic flavors.	5 Hrs
Chapter No. 6: Preservatives-Introduction, Sulphur Dioxide, sulphites and Bisulphites, Benzoic acid, Sorbic acid, Nitrites and Nitrates. Sweetening agents Intense sweeteners-Indian scenario, High intensity-low calorie sweeteners, Artificial sweeteners, composition, uses	5 Hrs

Unit -3:	15 Hrs
Chapter No. 7: Indirect additives : Residues and contaminants : Antimicrobials and veterinary drugs , Pesticides , Polyhalogenated aromatic compounds Polycyclic aromatic hydrocarbons ,Other organic residues ,Packaging materials , Heavy metals , Radio nuclides in foods.	15 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Understand food safety laws and regulation				X		X			X			
Gain knowledge on different food additives				X		X			X			
Know the role of food additives in food fortification				X		X			X			

Pedagogy

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Presentation / Assignment	10
Project quiz	10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Food Science, Norman. N.Potter, (1996). V edition, CBS Publishers, New Delhi
2.	Food Additives-Characteristics, Detection and Estimation-S.N Mahindru (2004).Tata McGraw –Hill Publishing Company Limited, New Delhi.
3.	Chemistry of Food Additives and Preservatives - Dr Titus A. M. Msagati 2013 John Wiley & Sons, Ltd, The Atrium, Southern Gate, Chichester, West Sussex, PO19 8SQ, UK.
4.	Food Additives Branen, A.L., Davidson PM & Salminen S. 2001.. 2nd Ed. Marcel Dekker.
5.	Encyclopedia of Food and Color Additives Gerorge, A.B. 1996.. Vol. III. CRC Press.
6.	Fenaroli’s Handbook of Flavor Ingredients Gerorge, A.B. 2004.. 5th Ed. CRC Press.

Date

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Model Curriculum

Program Name	B.Sc. Nutrition & Dietetics		Semester	Fifth Sem
Course Title	Nutrition Care Process (Theory)			
Course No.	ND T E 1	DSE 1	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Understand the role of nutrition care process 2. Identify the indicators that determine nutrition care process 3. Apply the knowledge and integrate nutrition care process with diet plan, counselling 	
Content	45 Hrs
Unit – 1	15 Hrs
Chapter No. 1: Overview of nutrition care process (NCP), Genesis/ Development of NCP model Influences on nutrition and health care, uses and benefits in health care.	8 Hrs
Chapter No. 2: Integrated team approach, role of dietician, documentation in nutrition care record Case study approach.	7 Hrs
Unit – 2:	15 Hrs
Chapter No. 3: ADIME concept Assessment -Nutrition care indicators and assessment, Diagnosis – PES, NFPE , Nutrition diagnostic terminology.	8 Hrs
Chapter No. 4: Intervention – Food/ nutrient delivery, nutrition education, counselling, coordination of nutrition care Monitoring & Evaluation- Selection of appropriate indicators, measuring outcomes.	7 Hrs
Unit -3:	15 Hrs
Chapter No. 5: Interrelationship and application of physical attributes (anthropometry), biochemical, functional with nutrition diagnosis.	8 Hrs

Chapter No. 6: Application of NCP to clinical condition – Acute care, weight management, diabetes, renal – CKD, Dialysis.	7 Hrs
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Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Understand the role of nutrition care process	X					X						
Identify the indicators that determine nutrition care process					X							
Apply the knowledge and integrate nutrition care process with diet plan, counselling		X						X			X	

Pedagogy

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Presentation / Assignment	10
Project quiz	10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:

1.	Krause MV and Mahan, Food and Nutrition Care Process, WS Saunders Co.,12 th edition,2018
2.	Carroll Lutz & Karen Przytulski, Nutrition & Diet Therapy – Evidence Based Applications 4 th edition, Jaypee Brother
3.	Shills ME and Shike M, Modern Nutrition in Health and Disease, 10 th edition, Lippincott Williams and Wilkins, 2006
4.	Gail Morrison & Lisa Hark., Medical Nutrition & Disease, Blackwell Science Inc

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Government of Karnataka

Model Curriculum

Program Name	B.Sc. Nutrition & Dietetics		Semester	Fifth Sem
Course Title	Food Safety and Regulations (Theory)			
Course No.	ND VOC T 1	VOC 1	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

<p>Course Outcomes (COs): At the end of the course the student should be able to</p> <ol style="list-style-type: none"> 1. Gain the knowledge regarding Food safety and hazard analysis. 2. Understand international and national food laws, regulations and standards governing the safety of the food from field to fork 3. Understand the concept of food safety regulations and its application in the food industry 	
Content	45 Hrs
Unit – 1	15 Hrs
<p>Chapter No. 1: Food safety concept - Importance of food safety in the food processing industry, Principles of food safety, Risk Assessment, Contamination of foods- Microbial contamination ,Chemical contamination, Physical contamination, Allergen contamination.</p>	8 Hrs
<p>Chapter No. 2: 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.</p>	7 Hrs
Unit – 2:	15 Hrs
<p>Chapter No. 3: Risk Analysis: Risk assessment, Risk management, Risk Communication Hazard Analysis Critical Control Point (HACCP) system Standard Operating Procedures (SOPs), Importance of TQM, GMP and GLP.</p>	8 Hrs
<p>Chapter No. 4: Definitions and importance, Good Manufacturing Practices (GMPs), Pest Control Program, Facility Maintenance, Personal Hygiene of food handlers.</p>	7 Hrs

Unit -3:	15 Hrs
Chapter No. 5: Adulteration of food: Definition. Types. Contamination of food by incidental adulteration by microorganisms, packing materials and other sources. Tests to detect common adulterants Prevention of Food Adulteration Act, standard and weight measurement act, infant milk substitute, feeding bottles and infant food act.	5 Hrs
Chapter No. 6: Food standards: ISI, AGMARK, Export inspection council, consumer protection act, CODEX Alimentarius, FSSAI.	5 Hrs
Chapter No. 7: FSSAI -Function and regulations. Nutritional labeling regulation.	5 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Gain the knowledge regarding Food safety and hazard analysis.	X											
Understand international and national food laws, regulations and standards governing the safety of the food from field to fork	X							X				
Understand the concept of food safety regulations and its application in the food industry.			X			X						

Pedagogy

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Presentation / Assignment	10
Project quiz	10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Food Safety-Theory and Practice:Paul L. Knechtges, Jones & Bartlett Learning,2012
2.	Food Hygiene and Sanitation With case studies, Sunetra Roday, 2 nd Edition, Tata McGraw Hill Education Pvt Ltd.,2011
3.	Kirk, R.S and Sawyer, R.: Pearson's composition and analysis of foods, Longman Scientific and technical. 9 th Edition, England .1991
4.	Bryan,F.L: Hazardous Analysis Critical Control Point Evaluation. A guide to identifying Hazards and assessing risks associated with food preparation and storage. WHO, Geneva.1992
5.	Bureau of Indian Standards: Specifications and Standard methods.
6.	Ranjanna S (1985) Handbook of analysis and quality control for fruit and vegetable products
7.	Martin EH (1986) Standard methods for the examination of dairy products
8.	Lees R (1978) Food analysis, analytical and quality control methods for food.

Date

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Government of Karnataka

Model Curriculum

Program Name	B.Sc. Nutrition & Dietetics		Semester	Sixth Sem
Course Title	Clinical Nutrition & Dietetics – II (Theory)			
Course No.	ND T C 6.1	DSC 8	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Integrate dietetics and counselling in preventive, promotive and curative health care 2. Understand the clinical condition with relevant data (laboratory, anthropometry, pharmacology) 3. Utilize and demonstrate skills to make appropriate dietary modifications in clinical conditions 	
Content	45 Hrs
Unit – 1	15 Hrs
Chapter No. 1: Nutritional counseling – objectives, importance, process.	5 Hrs
Chapter No. 2: Enteral and parenteral nutrition: access routes, formulas, challenges.	5 Hrs
Chapter No. 3: Nutrient, drug interactions: Effect of drug on food intake; food and nutrient on drugs.	5 Hrs
Unit – 2:	15 Hrs
Chapter No. 4: Diabetes: Classification, Risk factors, Diagnosis, Complications, Dietary management – Type 1 & Type 2.	5 Hrs
Chapter No. 5: Renal: Etiology, Dietary management – Glomerulonephritis, nephrotic syndrome, chronic kidney disease, dialysis, renal calculi.	5 Hrs
Chapter No. 6: Cancer: Risk factors, prevention and dietary management.	5 Hrs

Unit -3:	15 Hrs
Chapter No. 7: Starvation, Stress, Trauma. Burns – Assessment, Fluid and electrolyte repletion, nutrition management.	5 Hrs
Chapter No. 8: Organ transplant	5 Hrs
Chapter No. 9: Inborn errors of metabolism – PKU, Galactosemia, GSD, MSUD	5 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Integrate dietetics and counselling in preventive, promotive and curative health care	X						X					
Understand the clinical condition with relevant data (laboratory, anthropometry, pharmacology)					X							
Utilise and demonstrate skills to make appropriate dietary modifications in clinical conditions		X									X	

Pedagogy

Lecture, demonstration, hands on learning through projects, experiments, hospital dietary visits, case studies, workshops.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Presentation / Assignment	10
Project quiz	10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Clinical Nutrition & Dietetics II (Practical)	Practical Credits	2
Course No.	ND P C 6.1	Contact Hours:	
Practical Topics - 2 credits		13 - 15 weeks	
<ol style="list-style-type: none"> 1. Survey on nutrition supplement – enteral and parenteral formula Diet planning, development of nutrition aids, counselling guidelines: 2. Tube feeding 3. Parenteral nutrition 4. Type 2 Diabetes 5. Type 1 DM (carbohydrate counting) 6. Cancer 7. Chronic kidney disease 8. Dialysis 9. Burns 			

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Internal Assessment	25
Summative Assessment (ESE)	25
Total	25 marks + 25 marks = 50 marks

References:

1.	Krause MV and Mahan, Food (2008), Nutrition and Diet Therapy, WS Saunders Co.,12th edition
2.	Antia, F.P. (2005): Clinical Nutrition and Dietetics, Oxford University Press, Delhi
3.	Robinson, C.H;Lawler, M.R. Chenoweth, W.L; and Garwick,A.E (1986):Normal and Therapeutic Nutrition,17th Ed., Mac Millan Publishing Co
4.	Shills ME and Shike M, Modern Nutrition in Health and Disease, 10th edition, Lippincott Williams and Wilkins, 2006

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Nutrition & Dietetics		Semester	Sixth Sem
Course Title	Intermediary metabolism (Theory)			
Course No.	ND T C 6.2	DSC 9	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Obtain an insight into the chemistry of major nutrients and physiologically important compounds. 2. Understand the major pathways for metabolism of nutrients and key mechanisms regulating these pathways. 3. Understand the normal blood metabolites and relate to abnormal metabolic conditions. 	
Content	45 Hrs
Unit – 1	15 Hrs
<p>Chapter No. 1: Definition, objectives, scope and inter-relationship between biochemistry and other biological sciences. Introduction, anabolism, catabolism, metabolism. Carbohydrates; Structure, and general properties of: Monosaccharides-glucose, fructose, galactose, ribose. Disaccharides – maltose, lactose, sucrose. Polysaccharides – dextrin, starch, glycogen.</p>	5 Hrs
<p>Chapter No. 2: The central axis of Intermediary metabolism: Glycolysis, Oxidative decarboxylation of Pyruvate, Citric acid cycle & oxidative phosphorylation & their regulation, Un-couplers and inhibitors of energy transfer.</p>	5 Hrs
<p>Chapter No. 3: Glycogenesis, glycogenolysis, Pentose phosphate pathway, adaptation of carbohydrate metabolism in starvation and hyperglycemia. Inborn errors of metabolism – glycogen storage disease, galactosemia.</p>	5 Hrs
Unit – 2:	15 Hrs
<p>Chapter No. 4: Definition, classification, structure of proteins, biomedical importance. Dynamic</p>	5 Hrs

equilibrium, nitrogen balance Transamination, Deamination-Oxidative, Non-oxidative, Decarboxylation.	
Chapter No. 5: Degradation of amino acid and their regulation, Urea cycle and its regulation.	5 Hrs
Chapter No. 6: Conversion of amino acids to various products.	5 Hrs
Unit -3:	15 Hrs
Chapter No. 7: Lipids: Nomenclature, Classification of simple lipids – fats, oils, waxes. Complex lipids – phospholipids, glycolipids. Derived lipids – steroids, terpenes, carotenoids with examples, structure and function.	5 Hrs
Chapter No. 8: Oxidation of fatty acids, adipose tissue metabolism of triacyl glycerol. Transport of endogenous triacyl glycerols, Polyunsaturated fatty acids and lipoproteins. Inborn errors of metabolism: Fabry disease	5 Hrs
Chapter No. 9: Gluconeogenesis, metabolic cooperation between liver and muscle, Cori's cycle, metabolism in brain, liver, adipose tissue; synthesis & utilization of ketone bodies.	5 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Obtain an insight into the chemistry of major nutrients and physiologically important compounds	X		X							X		
Understand the major pathways for metabolism of nutrients and key mechanisms regulating these pathways.	X		X							X		
Understand the normal blood metabolites and relate to abnormal metabolic conditions	X		X							X		

Pedagogy

Lecture, demonstration, hands on learning through projects, experiments, hospital dietary visits, case studies, workshops.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Presentation / Assignment	10
Project quiz	10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Intermediate Metabolism (Practical)	Practical Credits	2
Course No.	ND P C 6.2	Contact Hours:	
Practical Topics - 2 credits		13 - 15 weeks	
<ol style="list-style-type: none">1. Techniques in measuring the chemicals (g, mg, ml, ml)2. Basics of normality and molarity calculation and preparation of solutions3. Preparation of solution and solvent4. Titration Acid-Base5. Colorimeters: Use of colorimeter in UV and visual range6. Determination of pH of biological samples - blood, urine7. Estimation of urine/Serum creatinine8. Estimation of Blood glucose9. Quantitative estimation of constituents of serum Urea			

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Internal Assessment	25
Summative Assessment (ESE)	25
Total	25 marks + 25 marks = 50 marks

References:	
1.	U. Satyanarayan, Essentials of biochemistry, Books & allied (P) Ltd., Kolkata publisher, 2004.
2.	Deb. A.C. Fundamentals of biochemistry of biochemistry: 1st edition New central book Ag (P) Ltd., 2004.
3.	Murray, R .K .Grannen, D .K.; Mayes, P .A .and Rodwell .V .W :.Harper's biochemistry .Lange Medical Book
4.	Agarwal, G R, Meerut 2, 2014, Text Book of Biochemistry, Krishna Prakashan Media (p) Ltd
5.	Satyanarayanan U,2014, Biochemistry, Elsevier India Private Limited, New Delhi
6.	Evangeline Jones, 2016, Manual of Practical Medical Biochemistry,2nd Edition, Jaypee Brothers Medical Publishers(p) Ltd

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Nutrition & Dietetics		Semester	Sixth Sem
Course Title	Principles and Practices in Public Health Nutrition (Theory)			
Course No.	ND T C 6.3	DSC 10	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

<p>Course Outcomes (COs): At the end of the course the student should be able to</p> <ol style="list-style-type: none"> 1. Understand the definition, utility and applications of epidemiology in nutritional sciences. 2. Understand the multi-faceted nature of problems in public nutrition. 3. Gain understanding about the food and nutrition security in India 	
Content	45 Hrs
Unit – 1 Concept of Public Health and Nutritional Epidemiology	15 Hrs
<p>Chapter No. 1: Introduction to Nutritional Epidemiology and Public health Nutrition. Scope and principles of Public health Nutrition – Definition, aims and objectives. Multidisciplinary nature of public nutrition, Role of public nutritionist.</p>	8 Hrs
<p>Chapter No. 2: National and International agencies in community nutrition- Role of WHO, UNICEF, UNDP, FAO, UNESCO, ILO, WORLD BANK, Red Cross, CARE.</p>	7 Hrs
Unit – 2: Nutritional problems ,their implications and on-going nutrition programmes	15 Hrs
<p>Chapter No. 3: Etiology, prevalence, clinical features and preventive strategies of Protein energy malnutrition. Dual Nutrition Burden : i. Under nutrition and Over nutrition Nutritional anemia’s, Vitamin A deficiency, Iodine deficiency disorders Obesity, coronary heart disease, Diabetes Mellitus.</p>	5 Hrs
<p>Chapter No. 4: Appropriate interventions involving different sectors such as Food, Health and Education – diet diversification, food fortification, supplementation, genetic modification, improved water and sanitation, immunization, nutrition education, growth monitoring and promotion (GMP), diarrhoea management and prevention.</p>	5 Hrs

<p>Chapter No. 5: National Nutrition Policy and Programmes - Integrated Child Development Services (ICDS) Scheme, Midday Meal Programme (MDMP), National programmes for prevention of Anaemia, Vitamin A deficiency, Iodine Deficiency Disorders National Programme for Prevention and Control of Cancers, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS), POSHAN Abhiyaan.</p>	5 Hrs
<p>Unit -3: Nutrition Security and Education</p>	15 Hrs
<p>Chapter No. 6: Food and Nutrition Security: Basic concepts & Policies. Overview of the on-going public sector programmes for improving food and nutrition security. Identification and measurement of food insecurity (FIA, ISMAP) Social capital and coping mechanism for food insecurity.</p>	5 Hrs
<p>Chapter No. 7: Objectives, principles and scope of nutrition and health education and promotion Links with health promotion Purpose, advantage and constraints of nutrition education Framework for planning nutrition promotion and education programs for the public Information, education and communication</p>	5 Hrs
<p>Chapter No. 8: Behaviour Change Communication : concept and process.</p>	5 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Understand the definition, utility and applications of epidemiology in nutritional sciences	X					X						
Understand the multi-faceted nature of problems in public nutrition.					X							
Gain understanding about the food and nutrition security in India.		X						X			X	
Develop and prepare different types of visual aids suitable to community nutrition programmes.				X								
Gain practical experience in imparting the knowledge of nutrition to the community										X		

Pedagogy

Lecture, demonstration, hands on learning through projects, experiments, hospital dietary visits, case studies, workshops.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Presentation / Assignment	10
Project quiz	10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:

1.	Sheila ChanderVir (2011). Public Health Nutrition in developing countries – part I and II, Woodhead Publishing India, Pvt Ltd
2.	Nutrition in Public Health - A handbook for developing programmes and services.3rd edition, Sari Edelstein, Jones and Bartlett learning, 2011
3.	Nutrition Epidemiology- An Introduction
4.	Wadhava, A. and Sharma, S. (2003). Nutrition in community. New Delhi : Elite publication house pvt. Ltd
5.	Annual reports – Dept. of agriculture and co-operation –Ministry of agriculture, Govt of India
6.	Gopaldas, J. and Seshadri, S.(1987). Nutrition monitoring and assessment. New Delhi: Oxford University Press.
7.	Park, J.E. and Park, K. (1997). Text book of preventive and social medicine (15thed.). Jabalpur: Banarasidas Bhanot.
8.	Samanta, R. K. (1991). Manual on instructional aids for teachingexcellence. New Delhi: Mittal Publications
9.	Shukla, P.K. (1982). Nutritional problems of India. New Delhi: PrenticeHall India Pvt. Ltd
10.	Bamji MS, Krishnaswamy K and Brahmam GNV (Eds) (2016). Textbook of Human Nutrition, 4 thedition. Oxford and IBH Publishing Co. Pvt. Ltd. New Delhi, Chapter 34, pg 563 – 575

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Nutrition & Dietetics		Semester	Sixth Sem
Course Title	Food Sanitation and Hygiene (Theory)			
Course No.	ND T E 2	DSE -2	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Students will have a thorough understanding of various factors responsible for food spoilage. 2. The students will know the specifications of various contamination sources and disease developed in certain processed products. 3. Students will have a thorough understanding of importance of hygiene and sanitation in during food processing. 	
Content	45 Hrs
Unit – 1	15 Hrs
Chapter No. 1: Principle of food hygiene, personal hygiene and food handling habits. Place of sanitation in food plants. Contamination during food handling, processing and its control.	5 Hrs
Chapter No. 2: Sanitary aspects of building and equipment: Plant layout and design.	5 Hrs
Chapter No. 3: Overview of preservation and spoilage of different kind of foods-cereal, pulses, fruit ,vegetable, meat, fish egg, poultry, milk and milk Products, canned foods and beverages.	5 Hrs
Unit – 2:	15 Hrs
Chapter No. 4: Food toxicology & food borne illness: Food hazards -microbiological, nutritional, environmental, natural toxicants, pesticides, food additives, preservatives. Food borne illness: Clostridium, botulinum, Escherichia coli, Brucella, Bacillus, Salmonella, Staphylococcus.	5 Hrs

<p>Chapter No. 5: Non -bacterial agent & food borne illness: Helminths & Nematodes, protozoa, toxic algae, fungi & food borne viruses.</p>	5 Hrs
<p>Chapter No. 6: Sanitary aspects of water supply: Source of water, quality of water. water purification and disinfection for potable water supply.</p>	5 Hrs
<p>Unit -3:</p>	15 Hrs
<p>Chapter No. 7: Microbial Food contamination examination: indicator organisms, direct examination, cultural techniques, Rapid methods in detection of microorganisms. Effective control of micro-organisms: micro-organisms important in food sanitation, micro-organisms as indicator of sanitary quality.</p>	5 Hrs
<p>Chapter No. 8: Safe and effective insect and pest control: Extraneous materials in foods, Principles of Insects and pests control. Physical and chemical control</p>	5 Hrs
<p>Chapter No. 9: Effective detergency and cleaning practices: Importance of cleaning technology, physical and chemical factors in cleaning, classification and formulation of detergents and sanitizers, cleaning practices. Sanitary aspects of waste disposal. Establishing and maintaining sanitary practices in food plants, role of sanitation, general sanitary consideration and sanitary evaluation of food plants.</p>	5 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Students will have a thorough understanding of various factors responsible for food spoilage.	X					X	X					
The students will know the specifications of various contamination sources and disease developed in certain processed products.		X			X							
Students will have a thorough understanding of importance of hygiene and sanitation in during food processing		X									X	

Pedagogy

Lecture, demonstration, hands on learning through projects, experiments, hospital dietary visits, case studies, workshops.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Presentation / Assignment	10
Project quiz	10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:

1.	Food Microbiology – M.R.Adams&M.O.Moss, New Age International (P) Limited, New Delhi
2.	Food Facts and Principles -N. ShakuntalaManay& M. Shadaksharaswamy, New Age International (P) Limited, New Delhi.
3.	Food Microbiology – William C.Frazier, Tata McGraw Hill publishing Company limited, New Delhi.
4.	General Microbiology – Power &Daginawala, Himalaya Publishing House, Mumbai. (vol-II)
5.	Basic Food Microbiology – G. Banwart, CBS Publishing & Distributors.
6.	Modern Food Microbiology – Jay, James, Aspen publishers.
7.	Microbiology- M.I.Pelezar&R.D.Reid McGraw Hill Book Company, New York.
8.	Modern Food Microbiology: J.M.Hay, CBS Publications & Distributions
9.	Food Hygiene & Sanitation – S.Roday- Tata McGraw Hill, New Delhi.

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Nutrition & Dietetics		Semester	Sixth Sem
Course Title	Maternal and Child Nutrition (Theory)			
Course No.	ND T E 2	DSE -2	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to

1. Identify nutrition-related health issues among females of reproductive age (12-48 years) that can affect their ability to conceive and that affect maternal and fetal outcomes of pregnancy.
2. Identify the role of nutrition in preventing and treating nutrition-related issues during pregnancy, such as gestational diabetes, hypertensive disorders and iron deficiency anemia.
3. Learn about nutrition education and health promotion concepts, interventions, strategies and government programmes.
4. Demonstrate skills and develop tools that will enhance the practice of MCH nutrition

Content	45 Hrs
Unit – 1	15 Hrs
<p>Chapter No. 1: Nutrition Prior to Pregnancy, Role of Nutrition in Women’s Health Effects of pre conceptional weight status and gestational weight gain on pregnancy outcomes. Practices and evidence-based interventions to improve nutritional status prior to and between pregnancies Importance of 1st 1000 days, Essential Nutrition Action, Introduction to IYCF. Maternal Nutrition Programs.</p>	8 Hrs
<p>Chapter No. 2: Nutrition During Pregnancy, Postpartum Weight Issues .Nutrient needs and metabolic adaptations of pregnancy. Role of nutrition in moderating risk of poor maternal-fetal outcomes (preterm birth, SGA/LGA, gestational diabetes, gestational hypertension/pre-eclampsia, congenital anomalies.</p>	7 Hrs
Unit – 2:	15 Hrs
<p>Chapter No. 3: Infant Nutrition, Focus on Breastfeeding Promotion :</p>	8 Hrs

Physiology of infant feeding with a focus on physiological reflexes and hunger/satiety cues .Nutrient needs of infants and overview of feeding options including breastfeeding and formula feeding .Breastfeeding support and promotion programs and interventions.	
Chapter No. 4: Positioning & Latching for correct breastfeeding, Breast & nipple conditions. Art of counseling mothers: Different real-life case scenario and Breastfeeding counseling. Breast Feeding History & assessment; Ways to increase Breast milk supply.	7 Hrs
Unit -3:	15 Hrs
Chapter No. 5: Toddler and Preschool Nutrition: Effects on Health and Food Allergy Risk Physiological and psychosocial development in early childhood as it pertains to feeding ability and food-related behaviors of early childhood .Introduction to solids including effects of timing and composition on child health and weight .Role of childcare and early education settings in promoting healthy eating and reducing obesity risk.	8 Hrs
Chapter No. 6: Child Nutrition Programs: Promoting Healthy Eating and Physical Activity Behaviors. Reflect on challenges and opportunities in meeting school nutrition standards	7 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Identify nutrition-related health issues among females of reproductive age (12-48 years) that can affect their ability to conceive and that affect maternal and fetal outcomes of pregnancy.		X										
Identify the role of nutrition in preventing and treating nutrition-related issues during pregnancy, such as gestational diabetes, hypertensive disorders and iron deficiency anemia		X										
Learn about nutrition education and health promotion concepts, interventions, strategies and government programmes.		X			X							
Demonstrate skills and develop tools that will enhance the practice of MCH nutrition.		X			X							

Pedagogy

Lecture, demonstration, hands on learning through projects, experiments, hospital dietary visits, case studies, workshops.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Presentation / Assignment	10
Project quiz	10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:

1.	Ballard, O., & Morrow, A. L. (2013). Human milk composition: nutrients and bioactive factors. <i>Pediatric clinics of North America</i> , 60(1), 49–74.
2.	Isaacs, E. B., Fischl, B. R., Quinn, B. T., Chong, W. K., Gadian, D. G., & Lucas, A. (2010). Impact of breast milk on intelligence quotient, brain size, and white matter development. <i>Pediatric research</i> , 67(4), 357–362.
3.	Stuebe A. (2009). The risks of not breastfeeding for mothers and infants. <i>Reviews in obstetrics & gynecology</i> , 2(4), 222–231.
4.	Infant and Young Child Nutrition in Tropics, Indian Academy of Paediatric (IAP) Textbook of Tropical Paediatrics – 2020
5.	WHO child growth standards: growth velocity based on weight, length and head circumference: methods and development 12 November 2009 Publication
6.	WHO child growth standards: length/height-for-age, weight-for-age, weight-for-length, weight-for-height and body mass index-for-age: methods and development 1 November 2006 Publication
7.	Park's textbook of Preventive and social medicine, K.Park, 20 th edition 2009

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Nutrition & Dietetics		Semester	Sixth Sem
Course Title	Food Analysis (Theory)			
Course No.	ND VOC T 2	VOC-2	No. of Credits	3
Contact hours	30 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Understand the different laboratory analysis related to food 2. Enhance operational ability in a laboratory 3. Compare and interpret various food analytical techniques 4. Select appropriate analytical techniques for specific foods 	
Content	30 Hrs
Unit – 1 Basics of Analysis	15 Hrs
Chapter No. 1: Principles and applications of food analysis Laboratory rules and regulations Instrumentation related to proximate composition – Types, Principles, Maintenance, Operation, Working - Kjeldahl, Socsplus, Fibra plus Principle, working and demonstration – HPLC and AS.	5 Hrs
Chapter No. 2: Scientific calculations in solvent preparations Solvents, pH standard buffers using acids, alkalis, and ash solution – Preparation.	5 Hrs
Chapter No. 3: Micronutrient Analysis - Principles of Ultraviolet and Visible Spectroscopy, Mass Spectrometer (MS) in Food Analysis	5 Hrs
Unit – 2: Nutrient and Physical analysis	15 Hrs
Chapter No. 4: Carbohydrates – Reducing sugars, starch and crude fibre fats and oils - Iodine value, Saponification, Peroxide value Estimation of Sodium and Potassium.	5 Hrs

Chapter No. 5: Moisture Analysis Texture, Color, Water solubility, water absorption, water activity.	5 Hrs
Chapter No. 6: Introduction to physicochemical properties – solubility, bulk density, foam stability, foam capacity, gelation capacity and porosity.	5 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Understand the different laboratory analysis related to food	X						X					
Enhance operational ability in a laboratory					X							
Compare and interpret various food analytical techniques		X									X	
Select appropriate analytical techniques for specific foods												

Pedagogy

Lecture, demonstration, hands on learning through projects, experiments, hospital dietary visits, case studies, workshops.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Presentation / Assignment	10
Project quiz	10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Food Analysis (Practical)	Practical Credits	1
Course No.	ND VOC P 2	Contact Hours:	
Practical Topics - 1 credits		13 - 15 weeks	
<ol style="list-style-type: none"> 1. Determination of moisture content of the food sample 2. Determination of carbohydrate content of the food sample 3. Determination of Protein content of the food sample by Kjeldahl, 4. Determination of fat content of the food sample by Soesplus 5. Determination of water absorption capacity of food sample 6. Determination of oil absorption capacity of the food sample 7. Determination of foam stability and foam capacity of the food sample 			

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Internal Assessment	25
Summative Assessment (ESE)	25
Total	25 marks + 25 marks = 50 marks

References:

1.	Pomeranz, Y. and McLoan, C.E. (1996): Food Analysis: Theory and Practice; 3rd Edition, CBS Publishers and Distributors, New Delhi.
2.	Wilson and John Walker, Principles and Techniques of Biochemistry and Molecular Biology (2010), Keith Wilson and John Walker, Cambridge University Press.
3.	Shalini Sehgal (2010): A Laboratory manual of Food Analysis; Wiley India, New Delhi
4.	Food Analysis: Third Edition, S. Suzanne Nielsen. (2003). Official Methods of Analysis. Association of Official Analytical Chemists, 15th ed. (1990). Food Analysis: Theory and Practice. Pomeranz and Meloan, 3rd. ed., (1994).

Date

Course Coordinator

Subject Committee Chairperson

**Model Curriculum
of
B.Sc.
in
Clinical Nutrition and Dietetics
5th and 6th Semester
(Model I C)**

KARNATAKA STATE HIGHER EDUCATION COUNCIL

Sub-committee members of B.Sc. Clinical Nutrition and Dietetics

1.	Dr. M. Anuradha
2.	Dr. Usha Devi. C
3.	Dr. Navaneetha.R
4.	Dr. Neetha Pattan
5.	Dr. Bhavana S
6.	Dr. Shilpa P

Contents of Courses for B.Sc. Clinical Nutrition and Dietetics Model I C

Semester	Course code.	Course Category	Theory/Practical	Credits	Paper Title	Marks	
						S. A	I.A
1.	CNDT 1.1	DSC- 1	Theory	3	Fundamentals of Nutrition	60	40
	CNDP 1.1	DSC- 2	Practical	2	Fundamentals of Nutrition	25	25
	CNDT 1.2	DSC- 3	Theory	3	Essentials of Macronutrients	60	40
	CNDP 1.2	DSC- 4	Practical	2	Essentials of Macronutrients	25	25
	CNDT 1.3	DSC- 5	Theory	3	Food Sanitation and Hygiene	60	40
	CNDT 1.4	OE - 1	Theory	3	Fundamentals of Food and Health/Health lifestyle and Nutrition	60	40
2.	CNDT 2.1	DSC - 6	Theory	3	Human Physiology	60	40
	CNDP 2.1	DSC - 7	Practical	2	Human Physiology	25	25
	CNDT 2.2	DSC- 8	Theory	3	Essentials of Micronutrients	60	40
	CNDP 2.2	DSC - 9	Practical	2	Essentials of Micronutrients	25	25
	CNDT 2.3	DSC- 10	Theory	3	Food Safety and Security	60	40
	CNDT 2.4	OE- 2	Theory	3	Food safety and Hygiene /Food Adulteration	60	40
3.	CNDT 3.1	DSC- 11	Theory	3	Life Cycle Nutrition	60	40
	CNDP 3.1	DSC - 12	Practical	2	Life Cycle Nutrition	25	25
	CNDT 3.2	DSC- 13	Theory	3	Dietetics I	60	40
	CNDT 3.2	DSC - 14	Practical	2	Dietetics I	25	25
	CNDT 3.3	DSC- 15	Theory	3	Nutritional Biochemistry	60	40
	CNDT 3.4	OE- 3	Theory	3	Nutritional Assessment/Traditional Foods in Health	60	40

4.	CNDT 4.1	DSC- 16	Theory	3	Dietetics II	60	40
	CNDP 4.1	DSC- 17	Practical	2	Dietetics II	25	25
	CNDT 4.2	DSC- 18	Theory	3	Community Nutrition	60	40
	CNDP 4.2	DSC- 19	Practical	2	Community Nutrition	25	25
	CNDT 4.3	DSC- 20	Theory	3	Nutrition in Physical Fitness	60	40
	CNDT 4.4	OE- 4	Theory	3	Nutrition in Weight Management / Diet in Lifestyle Disorders	60	40
5	CNDT 5.1	DSC- C21	Theory	4	Dietetics III	60	40
	CNDP 5.1	DSC- C22	Practical	2	Dietetics III	25	25
	CNDT 5.2	DSC- C23	Theory	4	Food Science	60	40
	CNDP 5.2	DSC- C24	Practical	2	Food Science	25	25
	CNDT 5.3	DSC- C25	Theory	4	Physiologic and metabolic changes in disease	60	40
	CNDT 5.4	DSE- E1	Theory	3	Nutrigenomics & Nutraceuticals / Geriatric nutrition	60	40
	CNDT 5.5	VOC - 1	Theory	2	Ayurveda Ahara and Poshan Sahayak / Diet counselling	60	
			Practical	1			40
6.	CNDT 6.1	DSC- C26	Theory	4	Dietetics IV	60	40
	CNDP 6.1	DSC- C27	Practical	2	Dietetics IV	25	25
	CNDT 6.2	DSC- C28	Theory	4	Food Microbiology and functional foods	60	40
	CNDP 6.2	DSC- C29	Practical	2	Food Microbiology and Functional Foods	25	25
	CNDT 6.3	DSC- C30	Theory	4	Food service management	60	40
	CNDT 6.4	DSE- E2	Theory	3	Information Education Communication (IEC)/ Food entrepreneurship	60	40
	CNDT 6.5	VOC - 2	Theory	2	Nutrition counseling / Diabetes management	60	
			Practical	1			40



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Clinical Nutrition and Dietetics		Semester	Fifth Sem
Course Title	Dietetics III (Theory)			
Course No.	CNDT 5.1	DSC- C21	No. of Credits	4+2
Contact hours	60 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Certificate with minimum 45%.

Course Outcomes (COs): At the end of the course the student should be able to

1. Gain a solid understanding of the principles of nutrition during diseased condition
2. Knowledge of medical nutrition therapy for various health conditions such as Liver disorders, gastrointestinal disorders, and renal disease, as well as strategies to create tailored meal plans to meet individual health needs.
3. Learn about the dietary management of genetic disorders
4. Seek knowledge on food allergies and their dietary management

Content	60 Hrs
<i>Unit-I</i>	20 hours
<ul style="list-style-type: none"> • Liver disorders - Etiology, types, symptoms, dietary management of Non-alcoholic fatty liver disease, Jaundice, viral hepatitis and cirrhosis • Gall bladder disorders - Etiology, types, symptoms, dietary management of Cholecystitis, Choledocholithiasis, and Cholelithiasis. Biliary dyskinesia, Sclerosing cholangitis • Pancreatic disorders - Etiology, types, symptoms, dietary management of acute and chronic pancreatitis, Cystic fibrosis. 	
<i>Unit- II</i>	15 hours
<ul style="list-style-type: none"> • Renal disorders - Etiology, symptoms, dietary management <ul style="list-style-type: none"> • Chronic Kidney Disease(CKD) • Glomerulonephritis • Nephrosis 	

<ul style="list-style-type: none"> • Renal failure (acute and chronic) • Renal calculi • Dialysis • Polycystic kidney disease 	
Unit- III	15hours
<p>•Genetic disorders</p> <p>Introduction to inborn errors of metabolism, common disorders (phenylketonuria, galactosemia, fructosuria, maple syrup urine disease), Understanding metabolic pathways and their disruption, and Dietary management. Genetic Disorders Affecting Nutrient Digestion and Absorption- Cystic fibrosis and pancreatic insufficiency, Celiac disease and gluten-related disorders, Lactose intolerance and other carbohydrate malabsorption disorders, Dietary modifications and enzyme replacement therapy.</p> <p>•Rheumatic Disease-Osteoarthritis, Rheumatoid arthritis, Gout - Etiology, symptoms, dietary management, lifestyle modification</p>	
Unit IV	10 hours
<p>• Food Allergy</p> <p>Introduction to Food Allergy and Food Intolerance Immunology and Pathophysiology of Food Allergy, Common Food Allergens Diagnosis of Food Allergies and Intolerances, Management and Treatment of Food Allergies, Food sensitivity: Food sensitivity: Types of reactions, Foods involved in sensitivity, Difference between food allergy and food intolerance, Food Intolerances and Sensitivities. Lactose intolerance, gluten sensitivity, and other common intolerances, Mechanisms and symptoms, Diagnosis and management strategies, Special Considerations and Dietary Planning</p> <p>✓ •Nutrient and Drug interactions: Effect of drug on food intake, digestion, absorption, transportation and excretion</p>	

Pedogogy

Formative Assessment	
Assessment Occasion / type	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Seminar	5 + 5
Project	10
Total	40 marks

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-15)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Gain a solid understanding of the principles of nutrition during diseased condition	✓	✓									✓				
2. Knowledge of medical nutrition therapy for various health conditions such as Liver disorders, gastrointestinal disorders, and renal disease, as well as strategies to create tailored meal plans to meet individual health needs.	✓										✓				
3. Learn about the dietary management of genetic disorders	✓														✓
4. Seek knowledge on food allergies and their dietary management	✓														✓

Pedagogy - Theory

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Dietetics III (Practical)	Practical Credits	2
Course No.	CNDP 5.1- DSC C22	Contact Hours:	39 hrs/ 13 Sessions
Practical Topics - 2 credits		13 - 15 weeks	
Plan, prepare and evaluate: <ul style="list-style-type: none"> • A day's diet for Cirrhosis (case profile) • A day's diet for Hepatitis (case profile) • Recipes for cholelithiasis • Recipes for acute pancreatitis • A day's diet for Nephrotic syndrome (case profile) • Prepare a list of low, medium and high Potassium foods • Recipes for PKU (adult) • Recipes for Osteoarthritis / Rheumatoid arthritis (case profile) • A day's diet for Gout and list of low-purine foods (case profile) 			

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment / project	5 + 5
Total	25 marks + 25 marks = 50 marks

References:	
1.	Klaus Kraemer and Peter B. Meier. Nutraceuticals in Health and Disease Prevention, CRC Press, 2001
2.	Jim Kaput and Raymond L. Rodriguez, Nutritional Genomics: Discovering the Path to Personalized Nutrition, Wiley-Interscience, 1 st edition, 2006
3.	Ann L. Yaktine and Robert Pool, Institute of Medicine (IOM). 2007. Nutrigenomics and beyond: Informing the future. Washington, DC: The National Academies Press, 2007
4.	Debasis Bagchi, Francis Lau, Manashi Bagchi, Genomics, Proteomics and Metabolomics in Nutraceuticals and Functional Foods, Wiley-Blackwell; 1st edition, 2010.
5.	Journal Nutrients 2012, 4, 1898-1944; Molecular Nutrition Research—The Modern Way Of Performing Nutritional Science.
6.	Journal Nutrients 2013, 5, 32-57; Nutrigenetics and Metabolic Disease: Current Status and Implication for Personalized Nutrition
7.	Lynnette R. Ferguson, Nutrigenomics and Nutrigenetics in Functional Foods and Personalized Nutrition, CRC Press, 1 st edition, 2013.
8.	Satinder Kaur Brar, Surinder Kaur, Gurpreet Singh Dhillon, Nutraceuticals and Functional Foods: Natural Remedy, Nova Science Publishers, 2014.
9.	Raffaele De Caterina, J. Alfredo Martinez, Martin Kohlmeier, Principles of nutrigenetics and nutrigenomics, Academic Press, 2020.
10.	Debasis Bagchi, Harry G. Preuss, Anand Swaroop, Nutraceuticals and Functional Foods in Human Health and Disease Prevention, CRC Press, 1 st edition, 2021.

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Clinical Nutrition and Dietetics		Semester	Fifth Sem
Course Title	Food Science (Theory)			
Course No.	CNDT 5.2	DSC- C23	No. of Credits	4+2
Contact hours	60 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Certificate with minimum 45%.

Course Outcomes (COs): At the end of the course the student should be able to

1. Define the fundamental concepts and principles of food science, including the composition of various food components and their roles in food quality and nutrition.
2. Examine the composition and nutritive value of milk and its products, including their properties and changes during cooking
3. Learn various food processing and preservation methods, including their effects on food quality and shelf life.
4. Analyze factors influencing the shelf life of different food products and recommend techniques to prolong product freshness and quality.

Content	60 Hrs
Unit-I	08 hours
<p>Introduction to food science</p> <p>Food science: Definition, importance and scope of food science. Sensory evaluation- Factors affecting the acceptability of food, Selection of taste panel, Subjective and objective tests Bound and free water, Colloids, Emulsions-Types and factors affecting stability, pH, Osmosis, Freezing point.</p>	
Unit- II	22 hours
<p>Study of cereals and pulses</p> <ul style="list-style-type: none"> • Structure and composition of cereals, processing of cereals and pulses • Gelatinization of starch and factors affecting • Role of ingredients in baking, dough formation, factors affecting dough formation and gluten formation • Toxic constituents <p>Fruits and vegetables</p> <ul style="list-style-type: none"> • Classification and composition • Pigments---classification, Changes during cooking and factors affecting it • Enzymatic browning and prevention <p>Fats and oils</p> <ul style="list-style-type: none"> • Physical and chemical properties • Rancidity 	

<ul style="list-style-type: none"> • Changes during frying • Factors affecting fat absorption Sugar cookery and leavening agents <ul style="list-style-type: none"> • Stages of sugar cookery • Crystallization and factors affecting it • Non-enzymatic browning 	
Unit- III	15 hours
<p>Milk and milk products: Composition and Nutritive value of milk, properties of milk, Milk cookery, effect of heat on milk, Nutritional importance of milk, milk products -Non fermented and fermented products- Role of milk in cookery.</p> <p>Meat, Fish, poultry and Eggs: Meat: Structure, composition and nutritive value, post-mortem changes in meat, tenderization, curing and sessions. Cooking of meat and changes during cooking, Grades of meat Fish and Poultry: composition and nutritive value, Cooking, Fish products. Egg: Structure and composition, Changes during cooking, Storage, effect of heat on proteins, egg products.</p>	
Unit- IV	15 hours
<p>Sensory evaluation – selection of panel of judges, preparation of samples, types – f tests, judging and results- Objectives methods, subjective methods.</p> <p>Food Preservation and Processing: Studying various food processing techniques and preservation methods to enhance food quality and extend shelf life to maintain nutritional content.</p> <p>Food Packaging: Food packaging in preserving food quality, preventing spoilage, and maintaining product integrity during storage and transportation. Shelf life studies: factors that affect the shelf life of different food products and techniques to prolong product freshness and quality</p>	

Pedogogy

Formative Assessment	
Assessment Occasion / type	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Seminar	5 + 5
Project	10
Total	40 marks

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-15)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Define the fundamental concepts and principles of food science, including the composition of various food components and their roles in food quality and nutrition.		✓					✓								
Examine the composition and nutritive value of milk and its products, including their properties and changes during cooking		✓													
Learn various food processing and preservation methods, including their effects on food quality and shelf life.		✓													
Analyze factors influencing the shelf life of different food products and recommend techniques to prolong product freshness and quality.		✓		✓											

Pedagogy - Theory

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Food Science (Practical)	Practical Credits	2
Course No.	CNDP 5.2- DSC24	Contact Hours:	39hrs /13Sessions
Practical Topics - 2 credits		13 - 15 weeks	
1.Methods of Cooking- boiling, broiling, frying, Microwave cooking, Poaching 2.Starch Cookery- a) Gelatinization of starch, and Dextrinisation of starch, Glutenisation, Effect of kneading 3.Pulse cookery a) Whole grams- effect of soaking and germination. b) Dhals-Effect of acid and alkali on cooking time. 4.Fats and Oils - Smoking point of different fats and oils. a. Effect of deep frying at smoking point, below smoking point, above smoking point.			

<p>b. Shallow frying- vegetable cutlet d) Deep fat frying-papads</p> <p>5. Milk cookery- Coagulation of milk</p> <p>6. Egg Cookery-.</p> <p>a) Assessing of Egg quality</p> <p>b) boiled eggs (soft and hard), effect of beating on egg preparations</p> <p>c) Prevention of ferrous sulphide formation.</p> <p>7. Stages of sugar cookery</p> <p>8. Vegetables and fruits – Enzymatic browning, preparation of jam, jelly and squash.</p>	
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Assessment

Formative + Summative Assessment = 25+25=50 marks

Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment / project	5 + 5
Total	25 marks + 25 marks = 50 marks

References:	
1.	Srilakshmi, B. (2003). Food science. New Age International (P) Ltd, New Delhi, 7 th edition, Reprint 2022.
2.	Hardy, Ronald W., and Sadasivam J. Kaushik, eds. Fish nutrition. Academic press, 2021.
3.	Bockisch, Michael, ed. Fats and oils handbook (Nahrungsfette und Öle). Elsevier, 2015.
4.	Duckworth, Ronald Barrett. Fruit and vegetables. Elsevier, 2013.
5.	Potter, Norman N., and Joseph H. Hotchkiss. Food science. Springer Science & Business Media, 2012.
6.	Pomeranz, Yeshajahu. Functional properties of food components. Academic Press, 2012.
7.	Coultate, Tom P. Food: the chemistry of its components. Royal Society of Chemistry, 2009.
8.	Feiner, Gerhard. Meat products handbook: Practical science and technology. Elsevier, 2006.
9.	Stone, Herbert, and Joel L. Sidel. "Introduction to sensory evaluation." Sensory Evaluation Practices (Third Edition). Academic Press, San Diego (2004): 1-19.
10.	Aneja, R. P., B. N. Mathur, R. C. Chandan, and A. K. Banerjee. Technology of indian milk products: handbook on process technology modernization for professionals, entrepreneurs and scientists. Dairy India Yearbook, 2002.
11.	Manay, N. Shakuntala O. Food: facts and principles. New Age International, 2001

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Clinical Nutrition and Dietetics		Semester	Fifth Sem
Course Title	Physiological and metabolic changes in diseases (Theory)			
Course No.	CNDT 5.3	DSC- C25	No. of Credits	4
Contact hours	60 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Certificate with minimum 45%.	
Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> To understand the pathophysiology of various diseases To study the metabolic and physiologic response of the body during disease. Learn to identify the clinical significance and risk factors associated with the disease. 	
Content	60 Hrs
Unit-I	12 hours
Introduction – Objectives and Scope and importance. Pathophysiology <ul style="list-style-type: none"> Infection – Fever and metabolic changes. Common disorders of Digestive tract and associated glands <ol style="list-style-type: none"> Peptic and Duodenal Ulcers Diverticulosis, Diarrhoea, Irritable bowel syndrome, Malabsorption Hepatitis, Liver Cirrhosis Acute and Chronic Pancreatitis 	
Unit- II Circulatory system	12 hours
Pathophysiology of Hypertension, Arterio and Artherosclerosis, Variation of HDL & LDL in blood, Angina pectoris and Myocardial Infarction. <ul style="list-style-type: none"> Anaemia – Types and Remedial measures. 	
Unit- III Excretory system	12 hours
Pathophysiology of Acute and Chronic Nephritis, Nephrosclerosis, Renal calculi, Renal failure, Chronic kidney disease (CKD), 1-5 stages along with dialysis and transplantation	
Unit- IV	24 hours
Part -A Pathophysiology of Diabetes Mellitus – Types, Causes, Symptoms, Remedial measures, Hypo and hyper Vitaminosis, Endocrine Disorders - Thyroid, Adrenal and Growth hormones, Stress – Physiological effects, Neuro-endocrine control of stress Part -B Malnutrition, under and over nutrition Obesity – Types, Causes and risks Cancer biology – Types, Properties of cancer cells, Prevention and Regulation. Inborn errors of Metabolism – AKU, PKU, Cystic fibrosis, Galactosemia, Albinism	

Pedogogy

Formative Assessment	
Assessment Occasion / type	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Seminar	5 + 5
Project	10
Total	40 marks

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
To understand the pathophysiology of various disease	✓										✓	
To study the metabolic and physiologic response of the body during disease.	✓										✓	
Learn to identify the clinical significance and risk factors associated with the disease.	✓								✓			

Pedagogy – Lecture, demonstration, hands on learning through projects, experiments, hospital dietary visits, case studies, workshops.

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Bansal, N., Pasricha, C., Kumari, P., Jangra, S., Kuar, R., & Singh, R. (2023). A comprehensive overview of juvenile idiopathic arthritis: From pathophysiology to management. <i>Autoimmunity Reviews</i> , 103337.
2.	
3.	Kliegman, R. M., Behrman, R. E., Jenson, H. B., & Stanton, B. M. (2007). <i>Nelson textbook of pediatrics e-book</i> . Elsevier Health Sciences.
4.	Abbott, M. B., & Vlasses, C. H. (2011). Nelson textbook of pediatrics. <i>Jama</i> , 306(21), 2387-2388.
5.	.
6.	Mann, D. L. (2011). The emerging role of innate immunity in the heart and vascular system: for whom the cell tolls. <i>Circulation research</i> , 108(9), 1133-1145.
7.	Lødrup, A. B., Karstoft, K., Dissing, T. H., Nyengaard, J. R., & Pedersen, M. (2008). The association between renal function and structural parameters: a pig study. <i>BMC nephrology</i> , 9(1), 1-9.
8.	Pallone, T. L., Yagil, Y. O. R. A. M., & Jamison, R. L. (1989). Effect of small-solute gradients on transcapillary fluid movement in renal inner medulla. <i>American Journal of Physiology-Renal Physiology</i> , 257(4), F547-F553.
9.	Corbin, K. D., Driscoll, K. A., Pratley, R. E., Smith, S. R., Maahs, D. M., Mayer-Davis, E. J., & Advancing Care for Type 1 Diabetes and Obesity Network (ACT1ON). (2018). Obesity in type 1 diabetes: pathophysiology, clinical impact, and mechanisms. <i>Endocrine reviews</i> , 39(5), 629-663.
10.	Gan, M. J., Albanese-O'Neill, A., & Haller, M. J. (2012). Type 1 diabetes: current concepts in epidemiology, pathophysiology, clinical care, and research. <i>Current problems in pediatric and adolescent health care</i> , 42(10), 269-291.
11.	Del Chierico, F., Rapini, N., Deodati, A., Matteoli, M. C., Cianfarani, S., & Putignani, L. (2022). Pathophysiology of type 1 diabetes and gut microbiota role. <i>International Journal of Molecular Sciences</i> , 23(23), 14650.
12.	Bezabeh, M., Tesfaye, A., Ergicho, B., Erke, M., Mengistu, S., Bedane, A., & Desta, A. (2004). General pathology.
13.	Bezabeh, M., Tesfaye, A., Ergicho, B., Erke, M., Mengistu, S., Bedane, A., & Desta, A. (2008). Genetics: Principles and Analysis.

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Clinical Nutrition and Dietetics	Semester	Fifth Sem
Course Title	Nutrigenomics & Nutraceuticals (Theory)		
Course No.	CNDT 5.4	DSE – E1A	No. of Credits 3
Contact hours	45 Hrs	Duration of SEA/Exam	2 Hours 30 mins
Formative Assessment Marks	40	Summative Assessment Marks	60

Course Pre-requisite(s): Certificate with minimum 45%.

Course Outcomes (COs): At the end of the course the student should be able to

1. The course provides an in-depth exploration of the field of nutrigenomics and nutraceuticals, focusing on the intersection of nutrition, genetics, and health.
2. Students will gain knowledge and understanding of how individual genetic variations influence nutrient metabolism and response to specific dietary components.
3. This course provides an overview of nutraceuticals, their role in health promotion, and their impact on various aspects of human health.
4. Students will gain knowledge about different types of nutraceuticals, their mechanisms of action, and their potential applications in preventing and managing chronic diseases.

Content	45Hrs
Unit-I	13 hours
Introduction to Nutrigenomics: Definition and scope of nutrigenomics, historical background and development of nutrigenomics, key principles, and concepts in nutrigenomics, significance of nutrigenomics in personalized nutrition Genetic Variation and Nutrient Metabolism: basics of genetics and genetic variations, Single nucleotide polymorphisms (SNPs) and their relevance in Nutrigenomics, genes involved in nutrient metabolism and their variants, impact of genetic variations on nutrient requirements and metabolism	
Unit- II	17 hours
Nutrigenomics and Chronic Diseases: Role of genetics and environmental factors in chronic disease development Obesity and Nutrigenomics: Genetic factors contributing to obesity and body weight regulation, Gene-nutrient interactions influencing energy balance and adipose tissue metabolism, Nutrigenomic approaches for personalized weight management and obesity	

<p>prevention</p> <p>Cardiovascular Diseases and Nutrigenomics: Genetic variants associated with cardiovascular diseases, Impact of dietary components on lipid metabolism and cardiovascular health, Nutrigenomic strategies for managing dyslipidemia and reducing cardiovascular risk</p> <p>Diabetes and Nutrigenomics: Genetic predisposition to type 2 diabetes and insulin resistance, Gene-diet interactions influencing glucose metabolism and pancreatic function, Nutrigenomic interventions for diabetes prevention and management</p> <p>Cancer and Nutrigenomics: Genetic factors contributing to cancer development and progression, Nutrigenomic approaches for cancer prevention and adjuvant therapy, Personalized nutrition strategies for reducing cancer risk based on genetic variations</p> <p>Gut Microbiota: Gut microbiota composition and its relationship with chronic diseases, Influence of dietary factors on gut microbiota-host interactions, Nutrigenomic modulation of gut microbiota for improved health outcomes</p>	
<p>Unit- III</p>	<p>15hours</p>
<p>Nutraceuticals and Health Promotion: Definition and classification of nutraceuticals. Dietary supplements: vitamins, minerals, botanicals, and other bioactive compounds, Fortified foods: enriched and fortified products with added nutrients. Introduction to phytochemicals and their role in human health. Exploration of various phytonutrients – curcumin, resveratrol, quercetin, green tea catechins, polyphenols, phytoestrogens, plant pigments, and their potential health benefits. Traditional herbs, spices, and plant-based remedies with nutraceutical properties</p> <p>Overview of the nutraceutical market in India, Regulatory framework and challenges in the Indian context, Opportunities and future prospects for nutraceuticals in the Indian healthcare industry</p>	

Pedogogy

Formative Assessment	
Assessment Occasion / type	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Seminar	5 + 5
Project	10
Total	40 marks

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-15)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
The course provides an in-depth exploration of the field of nutrigenomics and nutraceuticals, focusing on the intersection of nutrition, genetics, and health.							✓								
Students will gain knowledge and understanding of how individual genetic variations influence nutrient metabolism and response to specific dietary components.							✓				✓				
This course provides an overview of nutraceuticals, their role in health promotion, and their impact on various aspects of human health.		✓													
Students will gain knowledge about different types of nutraceuticals, their mechanisms of action, and their potential applications in preventing and managing chronic diseases.		✓													

Pedagogy - Theory

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Klaus Kraemer and Peter B. Meier. Nutraceuticals in Health and Disease Prevention, CRC Press, 2001
2.	Jim Kaput and Raymond L. Rodriguez, Nutritional Genomics: Discovering the Path to Personalized Nutrition, Wiley-Interscience, 1 st edition, 2006
3.	Ann L. Yaktine and Robert Pool, Institute of Medicine (IOM). 2007. Nutrigenomics and beyond: Informing the future. Washington, DC: The National Academies Press, 2007
4.	Debasis Bagchi, Francis Lau, Manashi Bagchi, Genomics, Proteomics and Metabolomics in Nutraceuticals and Functional Foods, Wiley-Blackwell; 1st edition, 2010.
5.	Journal Nutrients 2012, 4, 1898-1944; Molecular Nutrition Research—The Modern Way Of Performing Nutritional Science.
6.	Journal Nutrients 2013, 5, 32-57; Nutrigenetics and Metabolic Disease: Current Status and Implication for Personalized Nutrition
7.	Lynnette R. Ferguson, Nutrigenomics and Nutrigenetics in Functional Foods and Personalized Nutrition, CRC Press, 1 st edition, 2013.
8.	Satinder Kaur Brar, Surinder Kaur, Gurpreet Singh Dhillon, Nutraceuticals and Functional Foods: Natural Remedy, Nova Science Publishers, 2014.
9.	Raffaele De Caterina, J. Alfredo Martinez, Martin Kohlmeier, Principles of nutrigenetics and nutrigenomics, Academic Press, 2020.
10.	Debasis Bagchi, Harry G. Preuss, Anand Swaroop, Nutraceuticals and Functional Foods in Human Health and Disease Prevention, CRC Press, 1 st edition, 2021.

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Clinical Nutrition and Dietetics		Semester	Fifth Sem
Course Title	Geriatric Nutrition (Theory)			
Course No.	CNDT 5.4	DSE – E1B	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Certificate with minimum 45%.

Course Outcomes (COs): At the end of the course the student should be able to

1. Understand the physiology of aging.
2. Learn the nutrition assessment tools and intervention for nutrient deficiencies.
3. Analyze the chronic diseased conditions and dietary needs.
4. Learn dietary modifications and meal planning for adapting diets.

Content	45Hrs
Unit-I	13 hours
Physiological Changes in Aging: Age-Related Physiological Changes and Metabolic alterations. Impact of aging on body composition, metabolic rate, and nutrient metabolism, Body composition change, changes in muscle mass, strength, and functional capacity. Effects of increased body fat and visceral fat on health, Hormonal changes and their influence on metabolism. Effects of aging on basal metabolic rate (BMR) and energy expenditure, changes in nutrient absorption and utilization, gastrointestinal changes and their impact on nutrient absorption, age-related alterations in gastric acid secretion, intestinal absorption, and gut microbiota. Consequences of impaired absorption on nutrient status and overall health	
Unit- II	17 hours
Nutritional Assessment of Older Adults: Introduction to screening tools used in geriatric nutrition assessment (e.g., MNA, MUST, SGA), Application of screening tools in identifying malnutrition risk or existing malnutrition Interpretation of screening results and implications for further assessment and intervention. Methods for assessing dietary intake in older adults (e.g., food diaries, 24-hour recalls, FFQs), Analysis and interpretation of dietary intake data, identifying nutrient deficiencies or excesses in older individuals.	

<p>Evaluating dietary intake and nutritional needs, Overview of dietary guidelines and recommendations specific to older adults. Understanding nutrient requirements and recommended intakes for optimal health. Factors influencing individual nutritional needs in elderly population</p> <p>Nutritional Considerations for Age-Related Conditions: Malnutrition and sarcopenia, Causes, consequences, and prevention strategies, Role of nutrition in managing malnutrition and sarcopenia</p> <p>Chronic Diseases and Nutrition: Nutrition implications for cardiovascular disease, diabetes, osteoporosis, and other common conditions</p> <p>Dietary modifications and therapeutic diets for disease management</p>	
Unit- III	15hours
<p>Nutrition Interventions for Healthy Aging: Concept of Hydration and Fluid Balance in the Elderly, Importance of hydration in older adults, Strategies to maintain proper fluid balance</p> <p>Meal Planning and Dietary Modifications: Practical considerations for meal planning and preparation, adapting diets for age-related changes, dietary restrictions, and taste preferences</p> <p>Using nutritional assessment results to develop personalized nutrition plans. Adapting diets to address nutrient deficiencies, preferences, and dietary restrictions.</p> <p>Promoting Optimal Aging through Nutrition: Nutritional strategies for healthy aging and disease prevention. Role of physical activity and overall lifestyle in promoting well-being</p>	

Pedogogy

Formative Assessment	
Assessment Occasion / type	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Seminar	5 + 5
Project	10
Total	40 marks

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-15)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Understand the physiology of aging.			✓												
Learn the nutrition assessment tools and intervention for nutrient deficiencies.							✓		✓						
Analyze the chronic diseased conditions and dietary needs.	✓							✓							
Learn dietary modifications and meal planning for adapting diets.							✓	✓							

Pedagogy - Theory

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Marie Jaffe, Geriatric Nutrition and Diet Therapy, Skidmore-Roth Pub,1995.
2.	John E. Morley, David R. Thomas, Geriatric Nutrition, 1 st edition, CRC press, 2007
3.	Paola S. Timiras, Physiological Basis of Aging and Geriatrics, 4 th edition, CRC press, 2007
4.	Dr. Sukhpal Kaur Dr. Jugal Kishore Dr. Amarjeet Singh, Comprehensive Textbook of Elderly Care.1 st edition, Century publications, 2014
5.	Academy of Nutrition and Dietetics, Nutrition Care of the Older Adult A Handbook for Nutrition Throughout the Continuum of Care, American Dietetic Association, 3 rd edition, 2016.
6.	Jeffrey B. Halter, Joseph G. Ouslander, Stephanie Studenski, Kevin P. High, Sanjay Asthana, Mar Supiano, Christine S. Ritchie, Kenneth Schmader, Hazzard's Geriatric Medicine and Gerontology. 7 th McGraw-Hill Education; 2017

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Clinical Nutrition and Dietetics		Semester	Fifth Sem
Course Title	Ayurveda Ahara and Poshan Sahayak (Theory)			
Course No.	CNDT 5.5	VOC – 1A	No. of Credits	2+1
Contact hours	30 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Certificate with minimum 45%.

Course Outcomes (COs): At the end of the course the student should be able to

1. Understand the basic principles of Ayurveda
2. Learn about the principles of ayurvedic diet & nutrition
3. Learn about important medicinal plants and their properties used in ayurveda formulations.
4. Understand the concept of preventive healthcare in Ayurveda.

Content	30 Hrs
Unit-I	13 hrs
<p>Introduction to Basic principles of Ayurveda and their significance: Basic principles of Ayurveda (Vata, Pitta, Kapha). Origin and philosophy of Ayurveda. Five elements in Ayurveda. Role of the Five Elements in the functioning of the body and the environment. Interplay of the elements in maintaining health and causing imbalances. Body constitutions such as Dosha and Dhatus. Characteristics and functions of each Dosha. Influence of Doshas on physical, mental, and emotional well-being. Understanding the concept of Dhatus (seven bodily tissues). Role and functions of each Dhātu in the body. Relationship between Dhatus and Doshas in maintaining health</p> <p>Basic structure and function of human body (Rachana Sharir and Kriya Sharir): Various body parts. Concept of anatomy (Rachana Sharira). Concept of physiology (Kriya Sharira). Concept of six regions (Shadangatwam) of Sharira. Divisions of Sharira. The concept of homeostais (Dhātusāmya) in Ayurveda. Different diseases, disorders and syndromes associated with various body systems.</p> <p>Dietary and medicinal substances and concepts of health and disorders in Ayurveda: Principles of Ayurvedic diet and nutrition. Concept of Sattvic, Rajasic, and Tamasic foods. Dietary guidelines for balancing Doshas and promoting health.</p>	

Unit- II

Ayurvedic Medicinal Substances: Overview of herbal medicines in Ayurveda, Classification and properties of medicinal herbs and plants, Ayurveda formulations such as churnas, decoctions, and oils and their therapeutic uses. Various treatment modalities used in Ayurveda, including diet and lifestyle modifications, herbal medicines, Panchakarma (detoxification therapies), and rejuvenation therapies.

Importance of Ahara in Health and Disorders: The concept of food (Ahara) in health and ailments. Classification of diet/food articles (Aahara Dravya) and their properties. Importance of wholesome food (Hita Avam), and unwholesome food (Ahita Ahara) based on body type and constitution (Doshika Prakriti). Importance of favourable (Pathya) and unfavourable (Apathya) Ahara in the treatment of diseases. Different Dairy products and their uses in health and disease. Macro and micronutrients along with their functions. Use and importance of water in Ahara. Importance of using oils in Ahara as medicinal therapy. Properties and function of taste (Shadrasa) in Ahara.

Prevention and Maintenance of Health in Ayurveda: Principles of preventive healthcare in Ayurveda, including Dinacharya (daily routines), Ritucharya (seasonal regimens), and Swasthavritta (health-promoting practices).

Roles and responsibilities of Ayurveda Ahara and Poshana Sahayak. Scope of practice of Ayurveda Ahara and Poshana Sahayak.

Pedogogy

Formative Assessment	
Assessment Occasion / type	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Seminar	5 + 5
Project	10
Total	40 marks

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-15)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Understand the basic principles of Ayurveda			✓						✓						
Learn about the principles of ayurvedic diet & nutrition			✓						✓						
Learn about important medicinal plants and their properties used in ayurveda formulations.			✓						✓						
Understand the concept of preventive healthcare in Ayurveda.			✓						✓						

Pedagogy - Theory

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Dietetics III (Practical)	Practical Credit	1
Course No.	CNDP 5.6	Contact Hours:	15hrs
Practical Topics – 1 credit		13 - 15 weeks	
1. Apply the knowledge of Ayurveda to identify the Doshas and Dhatus of the body using charts and models. 2. Create a diagrammatic representation depicting the characteristic of Vata, Pitta, and Kapha. 3. Apply the knowledge of basic human anatomy to identify different parts of the body using charts and models. 4. Demonstrate the process of classifying food items based on their nutritional properties such as protein-rich, carbohydrate-rich, etc. 5. Demonstrate the process of preparing a diet plan using dairy products as per the health and ailment. 6. Demonstrate the method of classifying food items in different categories such as Drinkables (Pan), Eatables (Asana), Chewable (Bhakshya), and Lickable (Lehya) etc. 7. Demonstrate usage of the appropriate dietetics-related Ayurveda terminology during role play			

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment / project	5 + 5
Total	25 marks + 25 marks = 50 marks

References:	
1.	CK Gurung - 2011 - elibrary.tucl.edu.np
2.	Ayurveda and Traditional Chinese Medicine; a comparative overview- B Patwardhan, D Warude, P Pushpangadan and Narendra Bhat.
3.	Fundamentals of Pharmacognosy and Phytotherapy- Third edition - Michael Heinrich, Joanne Barnes, Jose em Prieto Garcia, Simon Gibbons, Elizabeth M Williamson, 2018
4.	Medicinal plants: chemistry and properties, M Daniel – 2006
5.	Ayurvedic science of Food and Nutrition – S Rastogi, 2014
6.	Traditional and Ayurvedic foods of Indian origin – P Sarkar, LK Dh, C Dhumal, SS Panigrahi, 2015
7.	Diet and nutrition concepts in Ayurveda: Gleaming into Opportunities for evidence based applications in healthcare – Devesh rastogi, Shalini Gupta, Ranjan rastogi & Rajeev Rastogi, 2011
8.	A literature review on fundamental aspect of Sharir Rachana - BR Pathak, S Mulje, S Bhosale – 2023.
9.	From Ancient Medicine to Modern Medicine: Ayurvedic Concepts of Health and Their Role in Inflammation and Cancer- Prachi Garodia, Haruyo Ichikawa, Nikita Malani, Gautam Sethi, Bharat B. Aggarwal, 2007.

Date**Course Coordinator****Subject Committee Chairperson**



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Clinical Nutrition and Dietetics		Semester	Fifth Sem
Course Title	Diet Counselling (Theory)			
Course No.	CNDT 5.5	VOC – 1B	No. of Credits	3
Contact hours	30 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Certificate with minimum 45%.	
Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Understand the basic concepts of counselling. 2. Learn and practice the nutrition care plan. 3. Demonstrate different assessment before planning a diet. 4. Understand the components of counselling process. 	
Content	45 Hrs
Unit-I	15 hrs
<p>Basic Concepts of Counselling</p> <p>Definition of counseling, Models for behavioral change, trans-theoretical model of behavior change. Motivational interview: Principles, a motivational intervention model Fundamentals of food behavior. Assessment of readiness to change, Client counselor relationship, Therapeutic counselling</p> <p>Communication skills Objectives, Verbal, non-verbal communication skills. Skills - Listening, response, action process, sharing response, observing, paraphrasing & reflecting Behaviour change: Counseling skills for resistance behaviour Cultural competence in counseling – ABCDE approach</p>	
Unit- II	15 hrs
<p>Nutrition Care Plan (NCP) Introduction, Goal setting: Basics, Define goals, Design goals, Design plan of action Dietary assessment-Food Intake data collection, Data analysis, Interpretation, Energy determination-Determination of REE, Physical Activity factor (PA), Determination of Total Energy Expenditure (TEE) Physical Assessment; Healthy Weight standards, Weight for height tables, BMI and Waist circumference Documentation – SOAP format</p>	
Unit- III	15 hrs
Components of counselling process	

<p>Strategies to promote change-Food management tools, Behaviour change strategy, cognitive restructuring, education during counselling</p> <p>Making behaviour change last-social network, stress management, relapse prevention, counselling evaluation</p> <p>Counseling sessions: Not ready to change, unsure about change, Ready to change, skill development for OARS (open end questions, affirmations, reflective listening, summary statements, three Client rights)</p>	
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Pedagogy

Formative Assessment	
Assessment Occasion / type	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Seminar	5 + 5
Project	10
Total	40 marks

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-15)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Understand the basic concepts of counselling.									✓					✓	
Learn and practice the nutrition care plan.								✓						✓	
Demonstrate different assessment before planning a diet.											✓			✓	
Understand the components of counselling process.														✓	

Pedagogy - Theory

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Counseling psychology- CJ Gelso, EN Williams, 2022
2.	Ethics in psychotherapy and counseling – KS Pope, MJT Vasquez, 2016
3.	Fundamentals of foods, nutrition and diet therapy- SR Mudambi, 2007 Krause’s food and the nutrition care process e-book, LK Mahan, JL Raymond, 2016
4.	An introduction to counselling – J McLeod, 2013
5.	The therapeutic relationship- P Clarkson, 2003
6.	Theories of psychotherapy and counseling- RS Sharaf, 2015

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Clinical Nutrition and Dietetics		Semester	Sixth Sem
Course Title	Dietetics IV (Theory)			
Course No.	CNDT 6.1	DSC- C26	No. of Credits	4
Contact hours	60 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> To understand the critical cases and its stages. To understand diet management during disease condition. To understand the nutrition requirement in different disease conditions. To learn about Medical Nutrition Therapy in different critical cases. 	
Content	60 Hrs
Unit – 1 Nutrition and Cancer	
<p>Definition of cancer and its global health impact, Role of nutrition in cancer development and progression, Link between diet, lifestyle, and cancer risk. Etiology and causes of cancer development. Types of cancer and their risk factors. Role of genetics, environment, and lifestyle in cancer development. Common symptoms experienced by cancer patients. Impact of cancer and treatment on appetite and dietary intake.</p> <p>Strategies to address complaints related to food intake in cancer patients, Dietary management for cancer patients. Importance of a well-balanced diet in supporting treatment and recovery. Strategies to manage nutrition-related side effects of cancer treatment. Addressing malnutrition and weight loss in cancer patients.</p> <p>Immunonutrients and their role in cancer prevention and treatment. Impact of specific nutrients on the immune system and cancer outcomes. Benefits of immunonutrients in reducing treatment-related side effects. Current research and evidence on immunonutrients in cancer care.</p>	15 Hrs
Unit – 2: HIV/AIDS: Introduction to HIV/AIDS	
<p>Definition of HIV/AIDS, Modes of transmission and risk factors stages of HIV infection: acute, chronic, and AIDS. Impact of HIV/AIDS on nutritional status and immune function. Specific nutritional requirements for individuals with HIV/AIDS. Effects of HIV on energy expenditure, nutrient absorption, and metabolism. Nutrient deficiencies commonly associated with HIV/AIDS. Importance of adequate macro- and micronutrient intake for immune support. Dietary challenges and strategies for individuals with</p>	15 Hrs

<p>HIV/AIDS. Maintaining a balanced diet and managing nutrition-related side effects of antiretroviral therapy (ART). Nutrition's role in managing opportunistic infections and supporting immune function. Dietary considerations for specific symptoms like diarrhoea, oral thrush, and weight loss.</p> <p>BURNS: Definition of burns and their health impact. Classification of burns: first-degree, second-degree, third-degree, and fourth-degree. Causes and risk factors for burns. Physiological response to burns and its impact on nutrition. Dietary needs and challenges during the acute or flow phase of burn injury. Meeting increased energy and protein requirements for wound healing and recovery. Role of hydration and electrolyte balance in burn management. Strategies for oral, enteral, and parenteral nutrition support as needed. Dietary requirements during the anabolic or recovery phase of burn injury. Promoting wound healing, tissue regeneration, and muscle recovery. Importance of adequate protein, carbohydrates, fats, vitamins, and minerals in the healing process. Review of current research and advancements in nutrition and burn management</p>	
<p>Unit -3: General nutrition care in Stress, Infection and Surgery:</p>	
<p>Types of diet orders/prescription-Adequate general (regular) diet; Modified diet Stress-Metabolic changes associated with stress, causative agents of stress, result of acute or prolonged stress, diet changes. Infection- nutritional needs and dietary requirements Surgery and nutritional status: Pre-operative nutrition -objectives and dietary management Post-operative nutrition – points to be considered to promote food intake (spacing meals, creating a pleasant environment, conditions favouring a patient to eat and favouring digestion, promoting adequate fluid intake. Role of Progressive diet); Common complaints of patients associated with food intake and management.</p>	<p>15 Hrs</p>
<p>Unit - 4: Nutrition support in critically ill</p>	
<p>Definition of critical illness and its impact on nutritional status, Understanding the importance of nutrition support in critically ill patients. Overview of the goals and benefits of providing adequate nutrition during critical illness. Introduction to the different methods of nutrition support. Malnutrition in critically ill patients, assessing nutritional status in critically ill patients. Understanding the impact of critical illness on body composition and metabolic changes. Assessing energy requirements and determining the appropriate route of feeding. Exploring the role of laboratory values in assessing nutritional needs and monitoring nutritional interventions. Enteral nutrition - Definition, patient screening, Indications, and Tube feeding: Nasogastric, Nasoduodenal, Nasojejunal, Types of enteral feeds: natural liquid foods, blenderised diets and elemental diets. Parenteral Nutrition: Definition, composition, Indications, Parenteral routes for nutrition and drug administration, Total Parenteral Nutrition (TPN). Refeeding syndrome- Definition, causes, symptoms. Home care for critically ill and requiring long-term nutrition support, palliative care, rehabilitation diets (stages).</p>	<p>15 Hrs</p>

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-15)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
To understand the critical cases and its stages.															✓
To understand diet management during disease condition.	✓													✓	✓
To understand the nutrition requirement in different disease conditions.														✓	✓
To learn about Medical Nutrition Therapy in different critical cases.															✓

Pedagogy

Lecture, demonstration, hands on learning through projects, experiments, hospital dietary visits, case studies, workshops.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Dietetics IV (Practical)	Practical Credits	2
Course No.	CNDP 6.1- DSC C27	Contact Hours:	60 Hrs
Practical Topics - 2 credits		13 - 15 weeks	
Plan, prepare, and evaluate; <ul style="list-style-type: none"> • A day's diet for Cancer • A day's diet for HIV/AIDS • A day's diet for different stages of burns • Recipes for elderly hospitalized patients (soft diet post-surgery) • Recipes for hospitalized sick children (soft diet post-surgery) • Market survey and listing of commercially available enteral and parenteral formulas 			

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Internal Assessment	25
Summative Assessment (ESE)	25
Total	25 marks + 25 marks = 50 marks

References:	
1	Nutrition and HIV infection- A Mangili, DH Murman, AM Zampini, 2006
2	The ASPEN nutrition support core curriculum, 2007
3	Clinical nutrition in practice- N Katsilambros, C Dimosthenopoulos, MD Kontogianni, 2011
4	Nutritional therapy in major burns- <u>AF Rousseau</u> , MR Losser, C Ichai, <u>MM Berger</u> - Clinical nutrition, 2013
5	Nutrition, metabolism and integrative approaches in cancer survivors- V Sierpina, L Levine, J Mckee, C Campbell, 2015
6	The essential burn unit handbook- JJ Roth, W Hughes, 2015
7	Krause's food and the nutrition care process – LK Mahan, JL Raymond, 2016

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Clinical Nutrition and Dietetics		Semester	Sixth Sem
Course Title	Food Microbiology and Functional Foods (Theory)			
Course No.	CNDT 6.2	DSC- C28	No. of Credits	4
Contact hours	60 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

<p>Course Outcomes (COs): At the end of the course the student should be able to</p> <ul style="list-style-type: none"> • To understand the microorganisms in foods and its relation to health. • To study about contaminated food and infectious diseases. • To understand the sanitary practices required to prevent food borne diseases. • To learn about functional foods and their health benefits 	
Content	60 Hrs
Unit – 1 Introduction to Food Microbiology	
<p>Introduction to Food Microbiology, Definition and scope of food microbiology. Microorganisms in the food environment: bacteria, viruses, fungi, and parasites. Factors influencing microbial growth in food. Foodborne illnesses and their impact on public health. Microbial Spoilage of Food: Microbial spoilage: causes, signs, and symptoms. Common spoilage microorganisms in different food groups (e.g., dairy, meat, fruits, vegetables). Factors affecting microbial spoilage and shelf life of food. Preventive measures and control strategies for reducing microbial spoilage. Major foodborne pathogens and their characteristics (e.g., Salmonella, E. coli, Listeria, Campylobacter), Routes of contamination and transmission of foodborne pathogens, Symptoms and health risks associated with foodborne infections, Food safety regulations and preventive measures for controlling foodborne pathogens.</p>	15 Hrs
Unit – 2: Food Hygiene and Sanitation Practices	
<p>Importance of food hygiene and sanitation in preventing foodborne illnesses. Good Manufacturing Practices (GMP) and Hazard Analysis and Critical Control Points (HACCP) principles. Cleaning and sanitizing procedures for food preparation areas and equipment. Personal hygiene and employee practices in the food industry. Food Safety Management Systems: Introduction to food safety management systems (e.g., ISO 22000,</p>	15 Hrs

<p>FSSC 22000), Implementation and maintenance of food safety programs. Auditing, monitoring, and verification of food safety practices. Role of regulatory agencies in ensuring food safety and compliance. Food regulations and standards related to microbiological criteria. International organizations and agencies involved in food safety regulation. Case studies and real-world examples of foodborne outbreak investigations.</p>	
<p>Unit -3: Functional foods</p>	
<p>Introduction: Definitions: functional food, nutraceutical and food supplements. Significance of functional foods and nutraceuticals in the food and pharma industry. FOSHU (Foods for specified health use) categories of functional ingredients. Food labels and regulations of nutraceuticals and functional foods. Benefits and Active principles of common herbs/ plants (containing beneficial ingredients) used in the field of nutraceuticals – Ginseng, Rosemary, Thyme, Oregano, Sage, Basil, wheat grass, turmeric.</p>	<p>15 Hrs</p>
<p>Unit - 4: Prebiotics</p>	
<p>Prebiotics: Definition, sources, Non-digestible/slow digestible carbohydrates: Dietary fibre, Oligosaccharides, sugar alcohols used in food products, resistant starch, Gums. Role of fibre in the diet: Diabetes and Obesity, Constipation and Diverticular disease, Colon cancer, breast cancer. Health benefits of Oligosaccharides: Anti-constipation, Non-carcinogenic, Reduction of serum cholesterol, improved intestinal flora. Probiotics: Definition, sources, Health benefits of Lactic acid bacteria, Bifidobacterium, Saccharomyces Boulardii, Streptococcus thermophiles. Health benefits - natural pigments (chlorophyll, chlorophyllin, carotenoids, anthocyanins), Polyunsaturated fatty acids (Omega 3 and Omega 6), peptides and proteins (Glutamine, L-Arginine), Glycosides, Isoprenoides, Alcohols and Phenols, Lecithin and Choline, Isoflavonoids, phytoestrogens, antioxidants, phytosterols. Vitamins and mineral supplements in health.</p>	<p>15 Hrs</p>

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-15)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
To understand the microorganisms in foods and its relation to health.				✓											
To study about contaminated food and infectious diseases.				✓											
To understand the sanitary practices required to prevent food borne diseases.				✓											
To learn about functional foods and their health benefits.		✓													

Pedagogy

Lecture, demonstration, hands on learning through projects, experiments, hospital dietary visits, case studies, workshops.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Food Microbiology and Functional Foods (Practical)	Practical Credits	2
Course No.	CNDP6.2 - DSC – C29	Contact Hours:	60 Hrs
Practical Topics - 2 credits		13 - 15 weeks	
1. Quality testing for milk – MBRT, Alcohol, Formalin and Starch test of milk samples and their standard plate count. 2. Alkaline phosphatase test to check the efficiency of pasteurization of milk. 3. Production, antimicrobial effect and nutritional value of probiotics- yoghurt, kefir and acidophilus milk.			

4. Isolation of any pathogenic bacteria (Staphylococcus or Salmonella) from food products.
5. Isolation of spoilage microorganisms from spoiled vegetables/fruits.
6. Quality testing for milk and milk products.
7. Microbial enumeration of street foods and restaurant foods.
8. Direct count of microbes present in milk by haemocytometer.
9. Physical, chemical and microbial assessment of water and potability test for water.
10. Preparation of a resource file on functional foods
11. Market survey on dietary supplements, probiotics and prebiotics available in the market
12. Planning and preparation of probiotic product.
13. Planning and preparation of nutraceutical product.

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Internal Assessment	25
Summative Assessment (ESE)	25
Total	25 marks + 25 marks = 50 marks

References:	
1	Adams.M.R and Moss.M.O (2000) Food Microbiology, New Age International Ltd. New Delhi.
2	Benson Harold, J (1990) Microbiological applications, Wn C Brown Publishers, USA.
3	Bibek Ray (2001).Fundamentals of Food Microbiology.Bibek Ray. 2nd Edition. CRCPress
4	Bibek Ray and Arun Bhunia (2013).Fundamentals of Food Microbiology. 5thEdition. CRCPress
5	Collins, C H and Lyne, PM (1976): Microbiological Methods, Butters worth, London
6	Frazier, WC and Westhof, DC (1988): Fourth Edition, Food Microbiology, McGraw Hill Inc
7	James M. and Jay J.M (1991) Food Borne Pathogen An illustrated text, Wolfepublications Ltd, England, Jay James, M (1986) : Third Edition, Modern Food Microbiology, Van No strand Reinhold company Inc
8	Sullia, S.B and Shantharam, S (2017). General Microbiology, 2nd Edition, Oxford and IBH Publishers
9	Thomas, J Montville and Karl, R Mathews. Food Microbiology- An Introduction, 2nd Edition, ASM PublisherColour in food improving quality – D MacDougall, 2002
10	Nutraceuticals- B Lockwood, L Rapport, 2007
11	Prescription for Nutritional Healing: A Practical A-to-Z Reference to Drug-Free Remedies Using Vitamins, Minerals, Herbs & Food Supplements" by Phyllis A. Balch and James F. Balch (2010)
12	Functional foods and Nutraceuticals, modern approach to food science- World Applied Sciences Journal, 2012
13	Dietary fiber: sources, properties and relation to health - D Betancur-Ancona, L Chel-Guerrero eBooks, 2013
14	Handbook of nutraceuticals and functional foods- REC Wildman, TC Wallace, 2016
15	Prebiotics and probiotics - K Venema, AP do Carmo – Wageningen, 2015
16	Probiotic dairy products – AY Tamime, LV Thomas, 2018
17	Polyunsaturated fatty acids and their health benefits – F Shahidi, P Ambigaipalan, 2018
18	The Vitamin Book: The Complete Guide to Vitamins, Minerals, and the Most Effective Herbal Remedies and Dietary Supplements" by Harold M. Silverman (2018)

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Clinical Nutrition and Dietetics		Semester	Sixth Sem
Course Title	Food Service Management (Theory)			
Course No.	CNDT 6.3	DSC- C30	No. of Credits	4
Contact hours	60 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ul style="list-style-type: none"> • To learn about various institutional food service systems. • To understand the process of food service systems. • To learn about costing in food service industry. • To learn about quality management in food service industry. 	
Content	60 Hrs
Unit – 1	
<p>Evolution of the Food Service Industry: Historical overview of the food service industry. Factors influencing the growth and development of the industry. Evolution of food service establishments and concepts. Types of Food Service: Commercial food service establishments: restaurants, cafes, fast food chains, etc. Non-commercial food service establishments: schools, hospitals, prisons, etc.</p> <p>Characteristics and unique considerations for each type of food service, Similarities and differences in operations, management, and customer expectations. Styles of Food Service: Formal food service: fine dining, upscale establishments. Semi-formal food service: casual dining, family-style restaurants. Informal food service: fast casual, quick-service restaurants. Differentiating factors, ambiance, and customer experiences in each style.</p> <p>Management- Definition, principles, functions.</p> <p>Menu planning and design: considerations, strategies, and techniques, Equipment and technology: selection, maintenance, and utilization, Inventory management: procurement, storage, and stock control. Facility layout and design: optimizing space utilization and workflow Tangible and Intangible tools.</p>	15 Hrs
Unit – 2	
<p>Layout of kitchen space-Layout plan, hotel kitchen, college hostel, food service area of a canteen. Facility layout and design: optimizing space utilization and workflow.</p> <p>Equipment and technology: selection, maintenance, and utilization, Catering equipment-classification based on mode of operation. Selection, purchase and storage of food.</p>	15 Hrs

<p>Methods of purchasing- open market buying, formal buying, wholesale buying, contract purchase, auction buying.</p> <p>Menu planning-Types of menus, factors affecting menu planning. Hygiene and sanitation: Environmental hygiene and sanitation, hygiene in food handling, personal hygiene, accidents and safety procedures, waste disposal</p>	
<p>Unit -3</p>	
<p>Costing in the Food Service Industry: Introduction to cost concepts and principles, Components of cost: material cost, employee cost, overhead cost. Understanding cost behaviour: fixed, semi-fixed, and variable, concept of break- even and cost benefit ratio; cost control-Food, labour, overhead and hidden cost; Pricing of dishes: Factors influencing menu pricing decisions, Cost-based pricing vs. value-based pricing, Menu engineering and pricing strategies for maximizing profitability, Pricing considerations for different food service segments, Food laws and regulations: Overview of food laws and regulations in the food service industry. Understanding regulatory agencies and their roles (local, national, international). Food safety standards and requirements for food establishments. Compliance with labelling, packaging, and allergen regulations. Compulsory Indian food standards.</p>	<p>15 Hrs</p>
<p>Unit - 4</p>	
<p>Concept of Total Quality Management in the food service industry. Definition and principles of Total Quality Management, Understanding the importance of TQM in the food service industry, Key concepts of customer focus, continuous improvement, and employee involvement, Benefits of implementing TQM in food service operations. Quality assurance principles and practices. Overview of quality assurance in the food service industry. Establishing quality standards and specifications for food and service. Implementing quality control measures to ensure adherence to standards. Monitoring and evaluating quality through inspections and audits. Quality Control Measures- Developing standard operating procedures (SOPs) for key processes. Implementing quality control checks at each stage of food production and service. Corrective and preventive actions for non-conformities and deviations. Overview of quality certifications and accreditations in the food service industry (e.g., ISO 9001, HACCP). Understanding the requirements and benefits of certification. Implementing certification processes and documentation. Maintaining compliance and continuous improvement in relation to certifications.</p>	<p>15 Hrs</p>

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-15)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
To learn about various institutional food service systems.											✓				
To understand the process of food service systems.											✓				
To learn about costing in food service industry.											✓				
To learn about quality management in food service industry											✓				

Pedagogy

Lecture, demonstration, hands on learning through projects, experiments, hospital dietary visits, case studies, workshops.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:

1	Service management and marketing – C Gronroos, 2007
2	Foodservice Manual for Health Care Institutions" by Ruby Parker Puckett (2012)
3	Foodservice Organizations: A Managerial and Systems Approach" by Mary B. Gregoire (2014)
4	Managing Quality Service In Hospitality: How Organizations Achieve Excellence In The Guest Experience" by Robert C. Ford and Michael C. Sturman (2014)
5	Introduction to Foodservice" by June Payne-Palacio and Monica Theis (2015)
6	Foodservice Management: Principles and Practices" by June Payne-Palacio and Monica Theis (2018)
7	Pricing and revenue optimization- RL Philips, 2021

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Clinical Nutrition and Dietetics		Semester	Sixth Sem
Course Title	Information and Communication Technology (Theory)			
Course No.	CNDT 6.4	DSE- 2A	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ul style="list-style-type: none"> To learn importance of ICT in nutrition. To learn utilization of social media platform for nutrition communication. To learn the importance of AI in nutrition. To understand utilization of ICT in diet assessment. 	
Content	45 Hrs
Unit – 1	
<p>ICT- Meaning, Components of ICT, Applications of ICT. Introduction to Information Communication Technology (ICT) in Nutrition. Overview of ICT and its role in the field of nutrition. Benefits and applications of ICT in nutrition research, education, and practice.</p> <p>Data Collection and Analysis Tools Introduction to data collection tools used in nutrition research and practice (e.g., online surveys, mobile data collection).Using software and tools for data entry, cleaning, and analysis. Data visualization techniques for presenting nutrition-related information. Applying statistical software for data analysis and interpretation.</p> <p>Nutrition Education and Counselling Technologies: Using technology for nutrition education and behaviour change interventions. Digital tools for interactive and engaging nutrition education materials. Telehealth and virtual platforms for remote nutrition counselling. Considerations for effective implementation of technology in nutrition education and counselling.</p>	15 Hrs
Unit – 2	
<p>Introduction to MS Word, Excel, and PowerPoint. Data Communication: Meaning, Types and Components. Concept of computer networking: Types, Benefits, Teleconferencing, Videoconferencing, and Computer conferencing. Social Media and Online Communication: Utilizing social media platforms for nutrition communication and advocacy. Ethical considerations and guidelines for professional use of social media. Creating and managing online nutrition communities and support groups. Engaging with</p>	15 Hrs

<p>the public through social networking sites, blogs, podcasts, and other online platforms.</p> <p>Electronic Health Records and Nutrition Documentation: Introduction to electronic health records (EHR) and nutrition documentation system. Utilizing EHR for nutrition assessment, intervention, and monitoring. Privacy and security considerations in EHR and nutrition documentation. Integrating nutrition data with electronic medical records for comprehensive patient care.</p>	
Unit -3	
<p>ICT in Health sector</p> <p>E health: Meaning, Benefits of e health, ICT applications in Public health Care in India: E health projects: Birth and death registration, online maternal death review monitoring system, National Identification Number (NIN), Self-monitoring healthcare devices.</p> <p>Mobile Health: meaning, Difference between e health and m health, health apps, Healthy you card, 1 mg, mswasthya-CDAC, CycleTel, mDiabetes, Evoz, MAMA, My Fitness Pal, Zoojoo.be. Adverse health consequences of using mobile phones.</p> <p>Overview of Artificial Intelligence (AI) and its applications in the field of nutrition. AI-powered tools and methods for dietary assessment and analysis. Automated food recognition and portion estimation using image recognition and machine learning algorithms. AI-based tools and platforms for delivering nutrition education and information.</p> <p>ICT in Food and Nutrition:</p> <p>ICT and food security. Use of ICT for dietary assessment: 24-hour recall, use of a personal digital assistant, digital photography, smart cards. ICT in counselling..</p>	15 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
To learn importance of ICT in nutrition									✓				✓		
To learn utilization of social media platform for nutrition communication									✓				✓		
To learn the importance of AI in nutrition									✓				✓		
To understand utilization of ICT in diet assessment									✓		✓		✓		

Pedagogy

Lecture, demonstration, hands on learning through projects, experiments, hospital dietary visits, case studies, workshops.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1	Artificial Intelligence: A Modern Approach - Stuart Russell and Peter Norvig (2016)
2	Digital Communications: Fundamentals and Applications- Bernard Sklar (2016)
3	Data Communications and Networking - Behrouz A. Forouzan (2017)
4	Computer Organization and Design: The Hardware/Software Interface - David A. Patterson and John L. Hennessy (2017)
5	Computer Security: Principles and Practice - William Stallings and Lawrie Brown (2017)
6	Enterprise Systems for Management -Luvai F. Motiwalla and Jeffrey Thompson (2018)
7	Information Systems: A Manager's Guide to Harnessing Technology - John Gallaugher (2018)
8	Information Technology for Management: Digital Strategies for Insight, Action, and Sustainable Performance- Efraim Turban, Linda Volonino, Gregory R. Wood (2020)
9	Database System Concepts - Abraham Silberschatz, Henry F. Korth, and S. Sudarshan (2020)
10	Computer Networking: A Top-Down Approach - James F. Kurose and Keith W. Ross (2020)
11	Information Technology Project Management - Kathy Schwalbe (2021)

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Clinical Nutrition and Dietetics		Semester	Sixth Sem
Course Title	Food Entrepreneurship (Theory)			
Course No.	CNDT 6.4	DSE- 2B	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ul style="list-style-type: none"> To enable students to acquire necessary knowledge to become self-employed. To understand various dimensions of entrepreneurship. To learn about food product development. To understand financial management in entrepreneurship. 	
Content	45 Hrs
Unit – 1 Introduction to Food Entrepreneurship	
<p>Understanding Food Entrepreneurship: Definition and scope of food entrepreneurship, Importance of food entrepreneurship in the food industry, Characteristics and skills required to become a successful food entrepreneur.</p> <p>Identifying Food Business Opportunities: Market research and analysis for food business opportunities, Identifying target markets and customer segments, Assessing competition and trends in the food industries, Concept Development, and Business Planning</p> <p>Generating innovative food product ideas: Concept development and refinement, Business planning process for food entrepreneurship.</p> <p>Legal and Regulatory Considerations: Understanding legal requirements and regulations for food businesses, Licensing, permits, and certifications needed for food entrepreneurship, Food safety and quality standards compliance.</p>	15 Hrs
Unit – 2 Launching and Managing a Food Business	
<p>Developing a Business Model: Defining the business model for a food venture, Value proposition and competitive advantage, Revenue streams, cost structure, and pricing strategies.</p> <p>Product Development and Production: Product design and development considerations, Sourcing ingredients and raw materials, Food production processes, quality control, and packaging.</p> <p>Marketing and Branding: Creating a unique brand identity for a food business, Marketing strategies and tactics for food entrepreneurship, Building customer relationships and implementing effective marketing campaigns.</p>	15 Hrs

Sales and Distribution: Developing sales channels and distribution networks, Sales techniques and strategies for food products, Managing distribution logistics and supply chain for food businesses.	
Unit -3	
Sustainable sourcing and ethical considerations, Waste reduction and environmentally friendly practices, Social responsibility in the food industry, Growth and Scaling Strategies, Scaling up a food business, Franchising and licensing opportunities, Managing growth challenges, and expanding into new markets. Financial management for growth and expansion, Securing investment and financing for food ventures, Exit strategies, and succession planning, Developing entrepreneurial skills, such as creativity, problem-solving, and resilience, Overcoming challenges and managing risk in the food industry, Networking, and building industry connections.	15 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
To enable students to acquire necessary knowledge to become self-employed														✓	✓
To understand various dimensions of entrepreneurship														✓	✓
To learn about food product development														✓	✓
To understand financial management in entrepreneurship															✓

Pedagogy

Lecture, demonstration, hands on learning through projects, experiments, hospital dietary visits, case studies, workshops.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1	Entrepreneurship: Theory, process and practices- DF Kuratko, 2016
2	Researching entrepreneurship – P Davidsson, 2004
3	Innovation and entrepreneurship – P Drucker, 2014
4	Concepts in strategic management and business policy – TL Wheelen, 2011
5	Quality and safety standards in the food industry, developments and challenges- J Trienekens, P Zuurbier- International Journal of Production Economics, 2008
6	Exploring consumer attitude and behavior towards green practices in the lodging industry in India- K Manaktola, V Jauhari, 2007

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Clinical Nutrition and Dietetics		Semester	Sixth Sem
Course Title	Nutrition Counselling (Theory)			
Course No.	CNDT 6.5 – VOC2A	VOC	No. of Credits	2+1
Contact hours	30 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ul style="list-style-type: none"> • To learn the skills of diet counselling. • To understand various levels of counselling techniques. • To learn designing counselling plans. • To understand nutritional counselling for different conditions. 	
Content	30 Hrs
Unit – 1 Components of nutrition counselling	
<p>Assessment component: Methods of review (verbal and non-verbal techniques).Dietary Data Analysis: Usage of standard cups and measurement, 24 hour dietary recall method, 3 days dietary recall method, Food Frequency Questionnaire (FFQ), Food log.</p> <p>Counselling process: Techniques for obtaining relevant information – General profile, medical history, clinical information, lifestyles, physical activity, stress, nutritional status.</p> <p>Planning component: Designing of counselling plans- goals and objectives, client care plan and designing evaluation instruments.</p> <p>Implementation component: counselling the patient.</p> <p>Evaluation component: Measuring the success of performance of client and evaluating the counselling process, counselling strategies for behaviour modification, the OARS technique.</p>	15 Hrs
Unit – 2	
<p>Counselling spectrum: Individual and group counselling.</p> <p>Nutrition counselling for adolescent eating disorder- Anorexia nervosa, Bulimia nervosa, Binge eating disorder. Nutrition counselling for weight management during adulthood- Lifestyle modification strategies. Nutrition Counselling for pregnant women with respect to pre pregnancy, prenatal and ante natal care. Nutrition counselling for mothers on weaning. Nutrition counselling for geriatrics- Definition of ageism, geriatrics.</p>	15 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
To learn the skills of diet counselling										✓				✓	
To understand various levels of counselling techniques										✓				✓	
To learn designing counselling plans														✓	
To understand nutritional counselling for different conditions												✓		✓	

Pedagogy

Lecture, demonstration, hands on learning through projects, experiments, hospital dietary visits, case studies, workshops.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Nutrition Counseling (Practical)	Practical Credits	1
Course No.	CNDP 6.5 -1	Contact Hours:	60 Hrs
Practical Topics - 2 credits		13 - 15 weeks	
<ul style="list-style-type: none"> Preparation of counseling aids for all stages of life (Vulnerable group) Complementary feeding Child nutrition during preschool and school years. Preparation of counseling aids for a given condition Adolescence-Importance of breakfast, Importance of five food group Pregnancy Lactation 			

<p>Geriatrics Preparation of data sheet, questionnaire, client care plan Setting up counseling centre and conducting counseling sessions for obesity, diabetes mellitus, hypertension, CVD and cancer Evaluation and report writing.</p>

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Internal Assessment	25
Summative Assessment (ESE)	25
Total	25 marks + 25 marks = 50 marks

References:	
1	Nutrition Counseling and Communication Skills: 1,000 Strategies for Success- Kathleen D. Bauer and Carol Sokolik (2009)
2	Motivational Interviewing in Nutrition and Fitness - Dawn Clifford and Laura Curtis (2015)
3	"Nutrition Counseling and Education Skills for Dietetics Professionals" by Betsy Holli, Judith Beto, and Sara Long (2011)
4	Medical Nutrition Therapy: A Case Study Approach" by Marcia Nahikian Nelms, Sara Long Roth, and Karen Lacey (2012)
5	Counseling and Therapy Skills - David G. Martin (2014)
6	Clinical Nutrition Counseling Skills- Susan B. Roberts (2017)
7	Counseling in Communication Disorders: A Wellness Perspective" by Audrey L. Holland and Ryan L. Nelson (2017)
8	Nutrition Counseling Skills for the Nutrition Care Process" by Linda Snetselaar and Mark L. Hackett (2018)
9	"Nutrition Counseling and Education Skill Development" by Kathleen Bauer, Doreen Liou, and Carol Sokolik (2018)
10	"Motivational Interviewing in Nutrition and Dietetics" by Dawn Clifford and Laura Curtism (2020)

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Clinical Nutrition and Dietetics	Semester	Sixth Sem
Course Title	Diabetes Management (Theory)		
Course No.	CNDT 6.5 - VOC2B VOC	No. of Credits	2+1
Contact hours	45 Hrs	Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40	Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ul style="list-style-type: none"> To learn about diabetes and its types. To understand management of diabetes. To learn dietary management for diabetes conditions. To understand complications of diabetes. 	
Content	45 Hrs
Unit – 1	
Understanding Diabetes Mellitus (DM), glucose utilization in the body, Physiology of glucose absorption, insulin and pancreas, blood glucose homeostasis, glucose metabolism. Types of DM -Type I, Type II, Gestational DM. Modifiable and non- modifiable risk factors of Type II DM. Other types of DM. Impaired Glucose tolerance. Etiology of DM, Indian diabetes risk score, Symptoms of DM. Understanding diagnostic tests for DM : urine glucose testing, Commercially available HbA1c meter, urine ketone testing, blood ketone monitoring, Diabetes monitoring: self-monitoring of blood glucose using glucometer, continuous glucose monitoring system.	15 Hrs
Unit – 2 Management of DM	
Pharmacological-oral glucose lowering drugs, other agents, Insulin therapy-Types Non pharmacological (lifestyle management)- MNT, Physical activity, weight management MNT -Objectives, principles, assessment prior to MNT. Food and blood sugars-Macro and micronutrients, functional foods in DM. Menu planning, dietary exchanges, healthy eating plate carbohydrate counting, Glycaemic index, Glycaemic load, portion control. Role of Exercise in DM-importance of exercise, types of exercise (Aerobic, resistance, flexibility), blood sugars and exercise. Complications of Diabetes: Acute -hypoglycaemia, diabetic ketoacidosis, hyperglycaemic syndrome. Chronic-Microvascular (Neuropathy, Nephropathy, Retinopathy) and Macro vascular (Cardiovascular, cerebrovascular, peripheral vascular disease). Diabetic Neuropathy and foot care guide for diabetics.	15 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
To learn about diabetes and its types							✓	✓							
To understand management of diabetes								✓							
To learn dietary management for diabetes conditions															✓
To understand complications of diabetes	✓														

Pedagogy

Lecture, demonstration, hands on learning through projects, experiments, hospital dietary visits, case studies, workshops.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	15
Test 2	15
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Diabetes Management (Practical)	Practical Credits	2
Course No.	CNDP 6.5 -2	Contact Hours:	60 Hrs
Practical Topics - 2 credits		13 - 15 weeks	
Diet in Diabetes management			
<ul style="list-style-type: none"> • Demonstrate weights and measures of food ingredients of different food groups (raw ingredients and cooked food weight) and learn concept of portion size. • Use of Food exchange list and carbohydrate count • Prepare a list Low , Medium and High GI foods from different food groups • Planning low GI recipes and calculation of glycemic load • Planning and preparation of day's diet for IDDM (individual case profile) • Planning and preparation of day's diet for NIDDM (individual case profile) 			

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Internal Assessment	25
Summative Assessment (ESE)	25
Total	25 marks + 25 marks = 50 marks

References:

1	Srilakshmi, B. (2014) Dietetics, 4 th and 7 th edition, New Age International Publications, New Delhi
2	Clinical Dietetics Manual, January 2018 by Indian Dietetic Association (Author)
3	Diet Metrics: Hand Book of Food Exchanges by Meenakshi Bajaj
4	Dietary Guidelines For Indians a manual colour full, 2 nd edition by Dr Laxmaiah
5	Nutrient Requirements for Indians Recommended Dietary Allowances Estimated Average Requirements - A Report of the Expert Group, 2020 ICMR, NIN, Ministry of Health and Family Welfare
6	Shubhangini A Joshi (2011) Nutrition and Dietetics, with Indian Case Studies, 3 rd edn Tata McGraw Hill Publication, New Delhi
7	Mahan, L.K. & Ecott-Stump, S. (2000): Krause's Food, Nutrition and Diet Therapy, 12 th Edition, W.B. Saunders Ltd
8	Modern Nutrition in Health and Disease 10 th edition by Maurice E. Shils
9	Alfred H. Katz, Prevention and health, the Haworth, Press, New York 1999
10	Textbook of Nutrition and Dietetics by Ranjana Mahna & Seema Puri Kumud Khanna, Sharda Gupta, Santosh Jain Passi, Rama Seth, Elite publishing house, India
11	International Life Sciences Institute Present Knowledge in Nutrition – latest edition.
12	Clinical and therapeutic nutrition-IGNOU school of continuing education
13	Normal and Therapeutic Nutrition September 1990 by Corinne Hogden Robinson, Marilyn Lawler, Macmillan USA

Date**Course Coordinator****Subject Committee Chairperson**

**Model Curriculum
of
B. A/B.Sc. with Care and Welfare
as
5th and 6th Semester
(Model I C)**

KARNATAKA STATE HIGHER EDUCATION COUNCIL

Sub-committee members of B.Sc. Care and Welfare

1.	Dr. Venkat Lakshmi H.
2.	Dr. Shobha.G
3.	Dr. Indiramma. B. S
4.	Dr. Manjula G Kadapatti
5.	Dr. Marie Kavitha Jayakaran
6.	Smt. Vijaya U Patil

**Contents of Courses for B.Sc. with Human Development / Care and Welfare & B.A./B.Sc. Human Development/Care and Welfare
Model IC**

Sem	Course code	Category of course	Theory/ Practical	Credits	Paper Title	Marks	
						SA	IA
1	HDCWT1.1	DSC	Theory	3	Fundamentals of Human Development	70	30
	HDCWP1.1	DSC	Practical	2	Fundamentals of Human Development	35	15
	HDCWT1.2	DSC	Theory	3	Prenatal and Infant care	70	30
	HDCWP1.2	DSC	Practical	2	Prenatal and Infant care	35	15
	HDCWT1.3	DSC	Theory		Stimulation and Assessment	70	30
	HDCWT1.4	OE	Theory	3	Crèche Management	35	15
2	HDCWT2.1	DSC	Theory	3	Early Childhood Years	70	30
	HDCWP2.1	DSC	Practical	2	Early Childhood Years	35	15
	HDCWT2.2	DSC	Theory	3	Early Childhood Care and Welfare	70	30
	HDCWP2.2	DSC	Practical	2	Early Childhood Care and Welfare	35	15
	HDCWT2.3	DSC	Theory	3	Basics of Food and nutrition	70	30
	HDCWT2.4	OE	Theory	3	Teaching Learning Materials	70	30
3.	HDCWT3.1	DSC	Theory	3	Children with Special Needs	70	30
	HDCWP3.1	DSC	Practical	2	Children with Special Needs	35	15
	HDCWT3.2	DSC	Theory	3	Care and Welfare of Special Children	70	30
	HDCWP3.2	DSC	Practical	2	Care and Welfare of Special Children	35	15
	HDCWT3.3	DSC	Theory	3	Early Childhood Education	70	30
	HDCWT3.4	OE	Theory	3	Special Education	35	15

4.	HDCWT4.1	DSC	Theory	3	School Years	70	30
	HDCWP4.1	DSC	Practical	2	School Years	35	15
	HDCWT4.2	DSC	Theory	3	Care and Welfare of School Children	70	30
	HDCWP4.2	DSC	Practical	2	Care and Welfare of School Children	35	15
	HDCWT4.3	DSC	Theory	3	Child Health and Guidance	70	30
	HDCWT4.4	OE	Theory	3	Behavioural Problems and Management	70	30
5.	HDCWT5.1	DSC	Theory	3	Adolescence	70	30
	HDCWP5.1	DSC	Practical	2	Adolescence	35	15
	HDCWT5.2	DSC	Theory	3	Adolescent Care and Welfare	70	30
	HDCWP5.2	DSC	Practical	2	Adolescent Care and Welfare	35	15
	HDCWT5.3	DSC	Theory	3	Career and Vocational guidance	70	30
	HDCWT5.4	DSE	Theory	3	Sexual and Reproductive Health Education	70	30
	HDCWT5.5	Voc	Theory	3	Adolescent Counselling	70	30
6.	HDCWT6.1	DSC	Theory	3	Adulthood and Aging	70	30
	HDCWP6.1	DSC	Practical	2	Adulthood and Aging	35	15
	HDCWT6.2	DSC	Theory	3	Adult Care and Welfare	70	30
	HDCWP6.2	DSC	Practical	2	Adult Care and Welfare	35	15
	HDCWT6.3	DSC	Theory	3	Parenting	70	30
	HDCWT6.4	DSE	Theory	3	Human Resource Management	70	30
	HDCWT6.5	VOC	Theory	3	Entrepreneurship in Human Development	70	30



Government of Karnataka

Model Curriculum

Program Name	B.Sc. HDPCW		Semester	Fifth Sem
Course Title	Adolescence (Theory)			
Course No.	DSC-5.1	DSC	No. of Credits	3+2
Contact hours	52 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Physical and psychological developmental processes that occur during adolescence. 2. The cognitive development during adolescence and youth. 3. Importance of social development. 4. Influence of family and importance of parent adolescent relationship. 5. Role of Self and role of culture in adolescent development. 	
Content	52 Hrs
Unit – 1 Adolescence, Physical development	12 Hrs
Chapter No. 1: Meaning, definition, classification and characteristics.	2 Hrs
Chapter No. 2: Developmental tasks, Adolescent in India..	2 Hrs
Chapter No. 3: Changes in physical development, puberty, development of primary and secondary sexual characteristics.	4 Hrs
Chapter No. 4: Male and Female body clocks, Psychological responses to puberty.	4 Hrs
Unit – 2: Intellectual and Emotional development	20 Hrs
Chapter No. 5: Piaget’s Cognitive Theory - formal operations, reasoning, problem solving.	5 Hrs
Chapter No. 6: Memory, abstract reasoning, critical thinking, moral reasoning.	5 Hrs

Chapter No. 7: Components of emotions, Emotional Intelligence-need and its importance during adolescence.	5 Hrs
Chapter No. 8: Mental health of adolescents - Issues and concerns, positive mental attitude.	5 Hrs
Unit -3: Social Development	20 Hrs
Chapter No. 9: Intimate Contexts for Adolescents: Family Relationships, influence of family, parent adolescent relationships.	5 Hrs
Chapter No. 10: Reciprocal socialization, autonomy, and role of parents in guiding adolescents.	5 Hrs
Chapter No. 11: Peers – Cliques, crowds, social behaviour and adjustments, social deviations and Sexuality.	5 Hrs
Chapter No. 12: Role of self, role of school, gender family and influence of culture in adolescent development.	5 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Physical and psychological developmental processes that occur during adolescence	x											
Make the learners understand the cognitive development during adolescence and youth.	x			x	x							
Importance of social development								x				
Influence of family and importance of parent adolescent relationship.					x		x					
Role of Self and role of culture in adolescent development.										x	x	

Pedagogy

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Adolescence (Practical)	Practical Credits	2
Course No.	DSC A2	Contact Hours:	26 Hrs
Practical Topics - 2 credits		13 - 15 weeks	
<ol style="list-style-type: none">1. Conduct a case study on needs /problems of adolescents.2. Develop an educational aid on the influence of media on adolescents.3. Plan and organize an awareness program on physical changes during adolescence.4. Visit an organization/ counseling center catering to the needs of adolescents. Write a report.5. Conduct workshop to foster self -concept/ critical thinking/ moral reasoning of adolescents.			

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Internal Assessment	25
Summative Assessment (ESE)	25
Total	25 marks + 25 marks = 50 marks

References:	
1.	Csikszentmihalyi, M., Larson, R. (1984). Being Adolescent. Basic Books, New York.
2.	Mukherjee Dilip (2002) Course Manual for Adolescent Health, Part-II, Indian perspective, Indian Academy of Paediatrics, Cambridge Press, Delhi.
3.	Nair. M. K. C and Ranjan Kumar Pejaver (2001) Adolescent Care 2000 and Beyond, Prism Books Pvt Ltd. Bangalore.
4.	Nakamura, J., Shernoff, D.J., and Hooker, C. (In Press) The meaning of supporting positivementoring relationships. In J. Nakamura, D. Shernoff, & C. Hooker, Good Mentoring: How Ethics and Excellence Survive.
5.	Santrock, J. W. (2005). Adolescence (10th ed.), McGraw Hill, Boston.
6.	Santrock, J. W. (2007). Adolescence, (11th ed.), McGraw Hill, Boston.
7.	Shernoff, D. J. (2001). The Individual-Maker: A Master Teacher and His Transformational Curriculum. Palm Desert, CA: William & Sons.
8.	Shulenberg (1997), Health risks and developmental transitions during adolescence, 3rd edition, Cambridge University Press, UK.
9.	WHO (1992), WHO AIDS Series 10-School health education to prevent AIDS and Sexually Transmitted Diseases, Geneva.
10.	WHO (1995), Strategies for Adolescent Health and Development in South- East Asia Region, New Delhi.

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. HDBCW		Semester	Fifth Sem
Course Title	Adolescent Care and Welfare (Theory)			
Course No.	DSC-5.2	DSC	No. of Credits	3+2
Contact hours	52 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Concept of care and welfare of adolescents. 2. Sensitization with the societal influences on adolescents. 3. Different welfare services available for adolescents. 4. Importance and understanding services for personal safety 	
Content	52 Hrs
Unit – 1 Physical and physiological care, Nutritional care	12 Hrs
Chapter No. 1: Physical care- Self care, personal hygiene, menstrual hygiene.	2 Hrs
Chapter No. 2: Physiological care- <i>Nutritional care</i> , - balanced diet, foods to be avoided, obesity, anemia, anorexia nervosa , bulimia body image perception and concerns and health care.	4 Hrs
Chapter No. 3: Reproductive health-Need and importance, sexuality education. HIV/AIDS.	3 Hrs
Chapter No. 4: Psychosocial care- Care of adolescents -use of drug and substance abuse, tobacco and alcohol. Impact of associated factors and its effects on health of adolescents.	3 Hrs
Unit – 2: Role of Family, School and Neighbourhood	20 Hrs
Chapter No. 5: Family- Importance of relationship, family environment, communication, socio economic condition and etiquette.	4 Hrs

Chapter No. 6: <i>School</i> -academic success and achievement, care required to address the scholastic and co - scholastic challenges.	4 Hrs
Chapter No. 7: <i>Neighbourhood</i> -distressed neighbourhood. Delinquency, risky behaviour. Impact of Urbanization, modernization and Globalization.	6 Hrs
Chapter No. 8: Gadgets -appropriate use and the effect of electronic gadgets, cyber safety, and social media networking.	6 Hrs
Unit -3: Psychological care, Adolescent- friendly and youth welfare services	20 Hrs
Chapter No. 9: Stress, Anxiety, Depression, teenage pregnancy, low self-esteem, need for resilience and conflict resolutions.	4 Hrs
Chapter No. 10: Rajiv Gandhi Scheme for Empowerment of Adolescent Girls – Sabla Sneha clinic, Nutrition component of Prime Minister GramodyaYojana and Nutrition Programme for Adolescent.	8 Hrs
Chapter No. 11: Reproductive and Child Health Programme (RCH), Rastriya Kishori Swasthya Karyakrama (RKSK).	4 Hrs
Chapter No. 12: Weekly Iron & Folic Acid Supplementation Programme (WIFS), Distribution of sanitary napkins.	4 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Concept of care and welfare of adolescents.	x								x	x		
Sensitization with the societal influences on adolescents.				x								
Different welfare services available for adolescents.		x							x			
Importance and understanding services for personal safety									x	x		x

Pedagogy

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Adolescent Care and Welfare (Practical)	Practical Credits	2
Course No.	DSC A2	Contact Hours:	26 Hrs
Practical Topics - 2 credits		13 - 15 weeks	
<ol style="list-style-type: none">1. Conduct a case study on knowledge, attitude and practice of balanced diet among adolescent boys and girls in their daily life.2. Develop a resource file/ booklet on menstrual hygiene for female adolescents.3. Plan and organize an awareness program on combating common health problems during adolescence period.4. Design and develop a poster/ software on influence of social networking sites/mass media on adolescents.5. Develop a directory on different welfare programs available for adolescent in Bangalore.			

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Internal Assessment	25
Summative Assessment (ESE)	25
Total	25 marks + 25 marks = 50 marks

References:	
1.	Nair. M. K. C and Ranjan Kumar Pejaver (2001) Adolescent Care 2000 and Beyond, Prism Books Pvt Ltd. Bangalore.
2.	Nakamura, J., Shernoff, D.J., and Hooker, C. (In Press) The meaning of supporting positive mentoring relationships. In J. Nakamura, D. Shernoff, & C. Hooker, Good Mentoring: How Ethics and Excellence Survive.
3.	Santrock, J. W. (2007). Adolescence, (11th ed.), McGraw Hill, Boston.
4.	Shernoff, D. J. (2001). The Individual-Maker: A Master Teacher and His Transformational Curriculum. Palm Desert, CA: William & Sons.
5.	Shulenberg (1997), Health risks and developmental transitions during adolescence, 3rd edition, Cambridge University Press, UK.
6.	WHO (1992), WHO AIDS Series 10-School health education to prevent AIDS and Sexually Transmitted Diseases, Geneva.
7.	WHO (1995), Strategies for Adolescent Health and Development in South- East Asia Region, New Delhi.

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. HDPCW		Semester	Fifth Sem
Course Title	Career and Vocational Guidance (Theory)			
Course No.	DSC-5.3	DSC	No. of Credits	3+2
Contact hours	52 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Need for career and vocational guidance. 2. Importance of knowledge, interest and aptitude in making a career choice. 3. Need for career readiness and decision making in career. 4. Role of organizations in promoting career opportunities. 5. Need to develop the prerequisites skills for a successful career. 	
Content	52 Hrs
Unit – 1 Guidance, Career guidance, roles and responsibilities of stakeholders	16 Hrs
Chapter No. 1: Guidance: Meaning, need, objectives, importance and principles of guidance.	3 Hrs
Chapter No. 2: Career guidance: Meaning, need, importance, influence of career on development of self and identity.	5 Hrs
Chapter No. 3: Career choice, factors influencing career choice, career readiness, skills required, types of career.	4 Hrs
Chapter No. 4: Roles and responsibilities: Family, peers teachers and professionals in influencing the career decision.	4 Hrs
Unit – 2: Vocational Guidance, factors influencing vocational guidance, theories, overview of international labour organization	18 Hrs
Chapter No. 5: Vocational guidance -Meaning, need, objectives, functions, principles and advantages of vocational guidance.	2 Hrs

Chapter No. 6: Factors influencing vocational guidance: Intelligence, interest, aptitude, influence of parental attitude, financial condition and socio-economic factors.	6 Hrs
Chapter No. 7: Theories of vocational guidance: Ginzberg's and Super's Developmental theory, Holland's Theory of Vocational Types, Bandura's Social theory, Cognitive theory, Parson's Trait and Factor Theory.	6 Hrs
Chapter No. 8: International Labour Organization (ILO), Skills for trade and economic diversification.	3 Hrs
Unit -3: Overview of National organizations, communication skills, personality development and career skills.	18 Hrs
Chapter No. 9: National organizations: National Institute for Career Service and National skill development corporation.	2 Hrs
Chapter No. 10: Communication Skills: Meaning, importance, need for effective communication skills, listening skills, group discussion, interview skills.	6 Hrs
Chapter No. 11: Personality development: Motivational skills, leadership skills, interpersonal skills, management of stress, conflict and time management.	5 Hrs
Chapter No. 12: Career Skills: importance of soft skills, etiquette, effective email correspondence, resume writing and telephone and interview etiquette.	5 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Need for career and vocational guidance.	x				x	x						
Importance of knowledge, interest and aptitude in making a career choice.				x		x						
Need for career readiness and decision making in career.	x				x	x						
Role of organizations in promoting career opportunities.				x			x	x				
Need to develop the prerequisites skills for a successful career.				x						x	x	x

Pedagogy

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Anatasi Anne(1982), : Psychological tesing, New York, Mac Millan.
2.	Burnard, P. (1999), Counseling skills training. New Delhi: Viva Books. Company, Delhi.
3.	Gupta. S.K. Guidance and Counseling in Indian Education, Mittal Publication Pvt. Ltd. Delhi
4.	Patterson, H. C.(1986), Theories of Counseling and psychotherapy. New York: Harper.
5.	Rao, S.N: Counseling and Guidance, Tata Mc Graw Hill, Delhi.
6.	Jones, R.N. (2002), Basic Counseling skills –A helper"s manual.
7.	Shertzer,B. & Stone, S.C.(1981), Fundamentals of Guidance
8.	Crow, L. and Crow, A. (1962), An Introduction to Guidance IInd Ed. Eurasia Publishing House (P) Ltd.

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. HDPCW		Semester	Fifth Sem
Course Title	Sexual and Reproductive Health Education (Theory)			
Course No.	DSC-5.1	DSC	No. of Credits	3+2
Contact hours	52 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. The overview of growth and development during adolescence. 2. The concept of sexual and reproductive health education 3. Understand the causes and management of STDs. 4. Sexual and Reproductive Health Education Services available for adolescent and young people. 5. Plan and implement an education programme on sexual and reproductive health education for adolescents. 	
Content	52 Hrs
Unit – 1 Overview of Adolescent Development, Sexual and Reproductive Health Education	16 Hrs
Chapter No. 1: Adolescence: Definition, Characteristics, significance of the period, classification -early, middle and late adolescence	4 Hrs
Chapter No. 2: Importance of Growing up years: over view of biological, psychosocial, cognitive and emotional changes.	4 Hrs
Chapter No. 3: Sexual and Reproductive Health Education: Concept, meaning, objectives, need, principles, approaches and guidelines (SIECUS).	4 Hrs
Chapter No. 4: Benefits of sexual and reproductive health education for adolescents and young people.	4 Hrs
Unit – 2: Sexual and Reproductive Health Education	18 Hrs
Chapter No. 5: Human reproductive system: Male and Female reproductive organs, functions, primary and secondary sexual characteristics, Overview of Reproduction Process: coitus, conception, pregnancy-signs and symptoms, care, labour and child birth.	5 Hrs

<p>Chapter No. 6: Puberty: Pubertal changes, early and late maturation -implications on development, Menarche, Menstruation-phases of menstruation, hygiene and care, Spermarche – wet dreams, genital hygiene and care for boys</p>	4 Hrs
<p>Chapter No. 7: Adolescent sexuality: meaning, concept, sexual orientation, sexual behaviour-masturbation, infatuation, love and sexuality urges. Gender: concept, gender roles and responsibilities, concept of healthy opposite gender relationships, need for assertiveness and effective communication</p>	4 Hrs
<p>Chapter No. 8: Common problems related to adolescent sexuality: sexual experimentation, teenage pregnancy, negative body image, Sexually Transmitted Diseases (STDs), Preventive measures-ABC approach</p>	5 Hrs
<p>Unit -3: Planning and implementation of sexual and reproductive health education programs</p>	18 Hrs
<p>Chapter No. 9: Planning of programs: Factors to be considered in planning of developmentally appropriate and need based education programs, school based and out of school programs, Implementation of the programs: audio -visual aids, question box, role play, case studies, group discussion/activities, expert talks and peer educators</p>	8 Hrs
<p>Chapter No. 10: Digital Sexuality Education: meaning, need and importance of developing digital Sexuality Educational resources</p>	2 Hrs
<p>Chapter No. 11: Role of organizations: WHO, UNICEF, Women and Child welfare department, ministry of Health and Family Welfare- Rastriya Kishor Swasthya Karyakrama, Adolescent Reproductive Sexual Health Program and FPAI.</p>	4 Hrs
<p>Chapter No. 12: Sexual health and reproductive health rights, Role of family, educational institutions, professionals in creating awareness about sexual and reproductive rights and education</p>	4 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
The overview of growth and development during adolescence.	X				X							
The concept of sexual and reproductive health education.				X			X					
Understand the causes and management of STDs.				X				X	X			

Sexual and Reproductive Health Education Services available for adolescent and young people.				X								
Plan and implement an education programme on sexual and reproductive health education for adolescents.	X			X						X	X	X

Pedagogy

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Dhun Panthaki (1998), „Education in Human Sexuality-A source book for educators“, Family Planning Association of India, Mumbai.
2.	Girish Bala Choudhry (2014), „Adolescence Education“, PHI Learning Private Limited, Delhi.
3.	Sexuality Information and Education Council of the United States (2004),“Guidelines for Comprehensive Sexuality Education: Kindergarten-12th Grade“, The National Guidelines Task Force Third Edition Fulton Press
4.	Gyanendra Kumar Rout (2018), „Adolescence Education“, APH Publishing Corporation, Delhi.
5.	Status of human rights in the context of sexual health and reproductive health rights in India (2018), SAMA Resource Group for Women and Health, New Delhi.
6.	United Nations Children’s Fund (2019.) „The Opportunity for Digital Sexuality Education in East Asia and the Pacific“. Review Report , UNICEF East Asia and Pacific, Bangkok

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. HDPCW		Semester	Fifth Sem
Course Title	Adolescent Counseling (Theory)			
Course No.	DSC-5	DSC	No. of Credits	3+2
Contact hours	52 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

<p>Course Outcomes (COs): At the end of the course the student should be able to</p> <ol style="list-style-type: none"> 1. Physical and psychological developmental processes that occurs during adolescence. 2. Cognitive, emotional and social development during adolescence. 3. Principles and skills needed for counseling adolescents. 4. Process and techniques of counseling. 5. Problems of adolescents and they learn to plan and implement the interventions for different difficulties through counseling process to adolescents. 	
Content	52 Hrs
Unit – 1 Adolescent development	16 Hrs
<p>Chapter No. 1: Adolescence- Definition, Classification, characteristics, developmental tasks.</p>	2 Hrs
<p>Chapter No. 2: Physical development-Changes in physical development, Psychological responses to puberty. Intellectual development-Piaget Theory of formal operation.</p>	3 Hrs
<p>Chapter No. 3: Emotional development- Common emotional traits of an adolescent, emotional problem of adolescents, strategies to overcome emotional problems. Need for emotional Intelligence. Mental health of adolescents - Psychosocial causes, common issues and concerns - Role of family, school and community, Need and importance of positive mental attitude. Social Development: Importance of socialization during adolescent years, social behaviour, influence of family, parent adolescent relationships, role of parents in guiding adolescents. Role of self, school, peers.</p>	8 Hrs
<p>Chapter No. 4: Interest and hobbies of adolescents. Common problems of adolescents.</p>	3 Hrs

Unit – 2: Counseling	16 Hrs
Chapter No. 5: Concept and definition of counseling, guidance, difference between guidance and counseling.	3 Hrs
Chapter No. 6: Scope, principles and need for counseling	4 Hrs
Chapter No. 7: Process of counseling, role, qualities and skills of a good counselor	4 Hrs
Chapter No. 8: Methods and Techniques of adolescent counseling	5 Hrs
Unit -3: Areas in adolescent Counseling, Approaches to adolescent counseling	20 Hrs
Chapter No. 9: Adolescent Counseling: educational, vocational, personal, social, premarital and marital counseling	8 Hrs
Chapter No. 10: Approaches to adolescent counseling- client-centred or person-centred approach, rational-emotive approach, psychodynamic approach to counseling, behavioural counseling approach	5 Hrs
Chapter No. 11: Role of family, school and peers in counseling.	4 Hrs
Chapter No. 12: Ethical consideration in counseling	3 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Physical and psychological developmental processes that occurs during adolescence.	X			X	X							
Cognitive, emotional and social development during adolescence.	X				X						X	
Principles and skills needed for counseling adolescents.					X			X				X
Process and techniques of counseling.						X						
Problems of adolescents and they learn to plan and implement the interventions for different difficulties through counseling process to adolescents.	X			X		X				X	X	X

Pedagogy

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Asch M (2000) Principles of guidance and counselling (1sted) New Delhi: Sarup & Sons
2.	Bowe Frank G (2000). Birth to five – early Childhood special education, New York Delmar Publishers Inc
3.	Cohen, L.G., & Spenciner, L.J (2003). Assessment of Children and Youth with Special Needs. Boston: Allyn & Bacon.
4.	Mangal S.K (2008) Essentials of Educational Psychology, New Delhi, Prentice Hall of India Pvt ltd
5.	Mukherjee Dilip (2002) Course Manual for Adolescent Health, Part-II, Indian perspective, Indian Academy of Paediatrics, Cambridge Press, Delhi.
6.	Nair. M. K. C and Ranjan Kumar Pejaver (2001) Adolescent Care 2000 and Beyond, Prism Books Pvt Ltd. Bangalore.
7.	Santrock, J. W. (2005). Adolescence (10th ed.), McGraw Hill, Boston.
8.	Santrock, J. W. (2007). Adolescence, (11th ed.), McGraw Hill, Boston.
9.	Satir.V.(2008) Satir Transformational Systemic Therapy. Publisher: Science & Behavior Books
10.	Shernoff, D. J. (2001). The Individual-Maker: A Master Teacher and His Transformational Curriculum. Palm Desert, CA: William & Sons.

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. HDPCW		Semester	Sixth Sem
Course Title	Adulthood and Aging (Theory)			
Course No.	DSC-5	DSC	No. of Credits	3+2
Contact hours	52 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Developmental aspects of adults. 2. Importance of health during adults' years. 3. Need for adjustment during old age. 4. Importance of marriage, family and parenthood across adult years. 5. Changing trends during adult years. 	
Content	52 Hrs
Unit – 1 Introduction to adult years, early adulthood, changing roles and trends in early adulthood	18 Hrs
Chapter No. 1: Introduction to Adult years: Meaning, concept, classification, stages of adulthood, life span approach.	2 Hrs
Chapter No. 2: Early adulthood: Definition, Characteristics, developmental tasks, Physical changes, Social, Emotional, Cognitive and Emotional development.	5 Hrs
Chapter No. 3: Changing roles in early adulthood: education, career, vocational, marriage and marital adjustment, pregnancy and child birth, roles and responsibilities in family, work place and society. Use of social media.	7 Hrs
Chapter No. 4: Changing trends during early adult years: Singlehood. Live in relationship, LGBTQ+ relationships. Divorce and remarriage.	4 Hrs
Unit – 2: Middle and Late adulthood	18 Hrs
Chapter No. 5: Middle adulthood: Definition, Characteristics, developmental tasks, development of self, changing roles and responsibilities. Maintaining family relationship and friendships. Importance of social life. Work life balance.	3 Hrs

<p>Chapter No. 6: Health and life style diseases, female climacteric and menopause in women, myths and facts about menopause. Work and career development – unemployment and job satisfaction, emptiness syndrome, stressful events. Importance of exercise, yoga and meditation. Marital conflicts and sexual abuse. Adult sexuality. Hardiness, resilience and coping. Parenting adult offspring and their marriage. Inter-generation relationships</p>	5 Hrs
<p>Chapter No. 7: Late adulthood–Physical aspects of aging; health and disease; continuity and change in personality; changes in family life cycle and social relationships</p>	4 Hrs
<p>Chapter No. 8: Work and Retirement; alternative life styles and leisure time activities; denial and thoughts of death, dying and bereavement, attitude towards death and dying, leading causes of death, grief and coping with the situation</p>	6 Hrs
<p>Unit -3: Late adulthood, changing roles, adjustment patterns and alternative arrangements for living</p>	16 Hrs
<p>Chapter No. 9: Late adulthood: Definition, characteristics, developmental tasks, population ageing, demographic trends in India - implications of ageing population at micro and macro levels.</p>	4 Hrs
<p>Chapter No. 10: Changing roles and the ageing family, husband-wife relations in old age, adjustment during old age. Capacity building and skills. Importance of recreational activities.</p>	5 Hrs
<p>Chapter No. 11: Intergenerational family relations, grand parenthood; widowhood / Single-hood, second marriage in the later life.</p>	4 Hrs
<p>Chapter No. 12: Support care services /Alternative arrangements– old age homes, sheltered homes for senior citizens and community care</p>	3 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Developmental aspects of adults.	X		X									
Importance of health during adults' years.				X				X				
Need for adjustment during old age.						X		X				
Importance of marriage, family and parenthood across adult years.	X							X		X		
Changing trends during adult years.								X			X	X

Pedagogy

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Adulthood and Aging (Practical)	Practical Credits	2
Course No.	DSC A2	Contact Hours:	26 Hrs
Practical Topics - 2 credits		13 - 15 weeks	
<ol style="list-style-type: none">1. Conduct a case study on Career / Vocational / social networking of an early adult.2. Prepare an educational aid on changing roles and responsibilities/ stress management/work life balance in middle adulthood and report the same.3. Develop activities to foster social participation for the senior citizens.4. Conduct the activities developed in Exercise – 3 in an institution for the elderly/ day care centre.5. Organize a programme on importance of marriage and marital adjustments/ maintaining family relationship and friendships/ exercise, yoga and meditation /Work life balance.			

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Internal Assessment	25
Summative Assessment (ESE)	25
Total	25 marks + 25 marks = 50 marks

References:	
1.	Bakshi, S.R. and KiranBala (2000) Welfare and Development of Women. Deep publication pvt. Ltd, New Delhi.
2.	Baradha G,(2007) “Basics of Human Development”, Sarvodalaya Press, Avinashilingam Education Trust Institutions, Coimbatore.
3.	Dhaar, G.M. and Robbani, I (2008) Foundations of community medicine. 2nd Edition, Reed Elsevier India pvt Ltd, Noida India.
4.	Feldman R.S.(2014) Development across the life span, pearson education, Inc., publishers
5.	Mathur. J.S. (2008) A comprehensive text book of community medicine. Preventive and social medicine, First edition, CBS publishers and distributors, New Delhi.
6.	Neil J. salkind, (2004), An introduction to Human Development, 5th edition, University of Kansas, Sage Publications, London.
7.	Papalia, Olds and Feldman, (2005), Human Development, Tata McGraw Hill, New Delhi.
8.	Park, K. (2006) Text book of Preventive and Social Medicine M/s Bhanarasi Bhanot, Jabalpur.
9.	Rice Philip. K (2001) Human development, Prentice Hall, New Jersey.
10.	Rice, F. P. (1992), Human Development – A life span approach – Prentice Hall New Jersey.

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. HDPCW		Semester	Sixth Sem
Course Title	Adult Care and Welfare (Theory)			
Course No.	DSC-6.2	DSC	No. of Credits	3+2
Contact hours	52 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Importance of care and welfare during adult years. 2. Understand the types of care required during adult years. 3. Develop Skills for promoting better health across the life span 	
Content	52 Hrs
Unit – 1 Physical care and physiological care	10 Hrs
Chapter No. 1: Personal hygiene, holistic health.	2 Hrs
Chapter No. 2: Pregnancy- antenatal care, care of self, clothing, feet, skin, sleep, exercise, nutrition during pregnancy.	3 Hrs
Chapter No. 3: Physical transitions-change in the body's capabilities, Height, weight, strength, the senses.	3 Hrs
Chapter No. 4: Female climacteric and menopause, exercise, yoga, meditation.	2 Hrs
Unit – 2: Care of Nutrition and Psychological care	20 Hrs
Chapter No. 5: Nutritional care - Importance of nutrition, meal planning, Care of adults- addiction: alcohol, tobacco, drugs, unprotective sex, illness and life style diseases (Hypertension, diabetes, thyroid etc).	6 Hrs
Chapter No. 6: Fitness and wellness in adulthood – Life style changes. Myths and facts about menopause. Management of stress and anxiety	4 Hrs
Chapter No. 7: Care of psychological needs, Habits, cultural health beliefs, Work life balance.	2 Hrs

Chapter No. 8: Care and adjustment with workplace, home, new roles, new responsibilities, parenthood, future plans, financial matters, mid life challenges. Marital conflicts and sexual abuse. Hardiness, resilience and coping.	8 Hrs
Unit -3: Socialization, Social Participation and Welfare Programs	20 Hrs
Chapter No. 9: Care of social clocks of adulthood- husband wife relation, Having children, receiving a promotion, becoming a grandparent, widowhood/single hood.	6 Hrs
Chapter No. 10: Preparation for retirement and social participation – volunteerism - paid and free social participation, capacity building and skills Improvement.	6 Hrs
Chapter No. 11: Constitutional provisions – policies, schemes, support care services. Health programs, policies.	4 Hrs
Chapter No. 12: Schemes for women and senior citizen. Emergency helpline services, citizens helpline services	4 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Importance of care and welfare during adult years.	X			X	X							
Understand the types of care required during adult years.				X				X	X			
Develop Skills for promoting better health across the life span.	X							X		X	X	X

Pedagogy

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Adult Care and Welfare (Practical)	Practical Credits	2
Course No.	DSC A2	Contact Hours:	26 Hrs
Practical Topics - 2 credits		13 - 15 weeks	
<ol style="list-style-type: none">1. Conduct a case study on the awareness of physical fitness during a middle age years.2. Conduct a survey on the awareness of helpline services.3. Develop activities to foster social participation for the senior citizens.4. Conduct the activities developed in Exercise – 3 in an institution for the elderly/ day care centre.5. Plan and organize programme / conduct a camp on Health and wellness in adulthood.			

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Internal Assessment	25
Summative Assessment (ESE)	25
Total	25 marks + 25 marks = 50 marks

References:	
1.	Bakshi, S.R. and KiranBala (2000) Welfare and Development of Women. Deep publication pvt. Ltd, New Delhi.
2.	Burnard, P. (1999), Counseling Skills Training, Viva Books, New Delhi.
3.	Country Report (2009), Department of women and child development, Government of India; New Delhi
4.	Dhaar, G.M. and Robbani, I (2008) Foundations of community medicine. 2nd Edition, Reed Elsevier India pvt Ltd, Noida India.
5.	Feldman R.S.(2014) Development across the life span, pearson education, Inc., publishers.
6.	ICDS- An Evaluation (2000) NIPCCD, New Delhi.
7.	Mathur. J.S. (2008) A comprehensive text book of community medicine. Preventive and social medicine, First edition, CBS publishers and distributors, New Delhi.
8.	National Health Program for India (1996) Ministry of Health and family welfare, government of India.
9.	Park, K. (2006) Text book of Preventive and Social Medicine M/s Bhanarasi Bhanot, Jabalpur
10.	Rice, F. P. (1992), Human Development – A life span approach – Prentice Hall New Jersey
11.	Sachadeva, D.R (2003) Social Welfare Administration in India, 4th Edition Kitabmahal, Allahabad.
12.	Santrock, J.W. (2007), Life Span Development, Third edition, Tata Mc Grow-Hill Publishing Company Ltd., New Delhi. UNICEF Yearly reports.
13.	Yearly Reports of State Government and Central Government Departments. World Bank Reports

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. HDBCW		Semester	Sixth Sem
Course Title	Parenting (Theory)			
Course No.	DSC-6.2	DSC	No. of Credits	3+2
Contact hours	52 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. The concept of parenthood and parenting 2. The significance of the role of parents across childhood and adolescence 3. Developmental interactions in infancy, childhood and adolescence period 4. Ways of nurturing children's skills and abilities and to understand the importance of working with vulnerable children. 5. Need, importance and techniques of parent Education and Support 	
Content	52 Hrs
Unit – 1 Parenthood and Parenting	16 Hrs
Chapter No. 1: Parenthood: Meaning, concept, significance of parenthood, adjustments during parenthood.	2 Hrs
Chapter No. 2: Changed concept of parenthood and childhood- factors contributing to changed concept of parenthood and childhood, issues emerging from the complexities of modern life / social practices.	5 Hrs
Chapter No. 3: Parenting: Concept, meaning, determinants of parenting behaviour, Diana Baumrind's parenting models, alternative types of parenting.	4 Hrs
Chapter No. 4: Characteristics of parenting roles – Roles and responsibilities of fathers, mothers and grandparents in child rearing. Components of effective parenting- care control and development, Five C's of parenting behaviour.	5 Hrs
Unit – 2: Developmental Interactions during infancy, childhood and adolescence	18 Hrs
Chapter No. 5: Parent-Child Relationships (PCR)- characteristics of good PCR, factors influencing PCR, need of promoting healthy PCR, Maslow's hierarchy of needs, meeting children's needs.	4 Hrs

Chapter No. 6: Habit formation in young children-need, importance and principles of developing sleeping, eating and toilet training habits in children, Establishing daily routines for children.	5 Hrs
Chapter No. 7: Emotional coaching for children-concept, importance, steps and strategies of helping the children to learn to express and control emotions.	5 Hrs
Chapter No. 8: Common behavioural problems- Infancy, childhood and adolescence—causes, early identification and parents’ role in prevention and management.	4 Hrs
Unit -3: Parent Education	18 Hrs
Chapter No. 9: Need and importance, characteristics of an effective parent education programme, types -primary, secondary and tertiary, techniques of parent education , Planning, Conducting, and Evaluating parent education programme.	6 Hrs
Chapter No. 10: Parental involvement in educational setting-need and benefits for children, parents and teachers.	2 Hrs
Chapter No. 11: Working with vulnerable children: concept of vulnerability, causes, understanding the characteristics and strategies of working with vulnerable children- deprived, maltreated, abused, addicted, maladjusted, victims of social evil practices and juvenile delinquents.	5 Hrs
Chapter No. 12: Parent Education and Support: Role of professionals, personal development for parents-need and significance, self -development techniques and their benefits in promoting parenting behaviour	5 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
The concept of parenthood and parenting	X							X				
The significance of the role of parents across childhood and adolescence	X			X					X			
Developmental interactions in infancy, childhood and adolescence period	X				X	X						
Ways of nurturing children’s skills and abilities and to understand the importance of working with vulnerable children		X	X	X				X				
Need , importance and techniques of parent Education and Support		X				X				X		X

Pedagogy

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Aarati C Rajarathnam and Brinda Jayaram, (2013), "Parenting-Innocence to InnerSense", Notion Press, Chennai, ISBN 978-93-83185-46-7.
2.	Amitha Govinda (2012), "The Art of Sensitive Parenting", Pustak Mahal Publishers, New Delhi, ISBN: 987-81-223-1380-4.
3.	Bill Lucas, (2006), "Involving Parents in Schools (Teachers' Guide S.) "Pocket Pal, Network Continuum Education, ISBN 978-1855391055
4.	Devdas, Rajammal (1978), "Methods of Teaching Home Science", NCERT, New Delhi
5.	Dhama, O.P and Bhatnagar, O.P., (1980), "Education & Communication for Development", Oxford and IEM Publishing Co., New Delhi.
6.	Girijamma H (2016), "Makkalu, Manassu mattu Belavanige", Sapna Book House, Bangalore, ISBN: 978-93-86116-51-2.
7.	Pankajam G (2005), "Know your Child", Concept Publishing Company, New Delhi, ISBN: 81-8069-213-2(PB).
8.	S K Mangal and Shubhra Mangal (2019), "Child Psychology and Development", Sterling Publishers Pvt. Ltd., New Delhi, ISBN: 978-93-86245-54-0.
9.	Suresh Keshan (2012), "A Parent's guide to Child Care", Pustak Mahal Publishers, New Delhi, ISBN: 978-81-223-0001-7.
10.	Vasundara Bhupati (2018), "Makkala Aaraike Anubhanda", Vasantha Prakashana, Bangalore, ISBN:93-86756-35-8

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. HDBCW		Semester	Sixth Sem
Course Title	Human Resource Management (Theory)			
Course No.	DSC-6.2	DSC	No. of Credits	3+2
Contact hours	52 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to

1. Importance of human resource in the present day organizations and its subsequent management as a „resource”.
2. Overview of various HRM concepts functions and practices.
3. The elements of the HR function (e.g. – recruitment, selection, training and development, etc.)
4. Effectiveness of recruiting methods & selection procedures.
5. Various training methods and design a training program.
6. Knowledge to Design a job description and job specification for various levels of employees and gain an insight into the various statutory provisions.

Content	52 Hrs
Unit – 1 HRM, Job analysis, Planning, Recruitment	18 Hrs
Chapter No. 1: Human Resource Management: Introduction, meaning, nature, scope, importance and Evolution of the concept of HRM, Principles and major functions of HRM	6 Hrs
Chapter No. 2: Job Analysis: Meaning, process of Job Analysis, methods of collecting job analysis data, Job Description and Job Specification.	5 Hrs
Chapter No. 3: Planning- Objectives, Importance and process of Human Resource Planning, Effective HRP.	3 Hrs
Chapter No. 4: Recruitment- Definition, Constraints and Challenges, Sources and Methods of Recruitment, New Approaches to recruitment.	4 Hrs
Unit – 2: Selection, Placement, Training and development, Performance Appraisal	18 Hrs
Chapter No. 5: Selection: Definition and Process of Selection.	3 Hrs

Chapter No. 6: Placement: Meaning, Induction/Orientation, Internal Mobility, Transfer, Promotion, Demotion and Employee Separation.	5 Hrs
Chapter No. 7: Training and development: Training v/s development, Training v/s Education, Systematic Approach to Training, Training Methods.	5 Hrs
Chapter No. 8: Performance Appraisal: Concept of Performance Appraisal, the Performance Appraisal Process, Methods of Performance Appraisal	5 Hrs
Unit -3: Compensation, Employee Welfare, Employee Grievances, Discipline	16 Hrs
Chapter No. 9: Compensation: Objectives of Compensation Planning, Job Evaluation, Principles of Wage and Salary Administration, Current Trends in Salary Administration.	5 Hrs
Chapter No. 10: Employee Welfare: Introduction, Types of Welfare Facilities and Statutory Provisions.	4 Hrs
Chapter No. 11: Employee Grievances: Employee Grievance procedure, Grievances Management in Indian Industry.	3 Hrs
Chapter No. 12: Discipline: Meaning, approaches to discipline, essential of a good disciplinary system, managing difficult employees.	4 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Importance of human resource in the present day organizations and its subsequent management as a „resource”.	X											X
Overview of various HRM concepts functions and practices.					X	X				X		
The elements of the HR function (e.g. – recruitment, selection, training and development, etc.)						X		X		X	X	
Effectiveness of recruiting methods & selection procedures						X	X			X	X	
Various training methods and design a training program.									X			

Knowledge to Design a job description and job specification for various levels of employees and gain an insight into the various statutory provisions.											X	X	X	X
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Pedagogy

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Human Resource Management- Rao V.S.P, Excel books, 2010.
2.	Human Resource Management- Cynthia D. Fisher, 3/e, AIPD, Chennai
3.	Human Resource Management: A South Asian Perspective, Snell, Bohlander & Vohra, 16th Rep., Cengage Learning, 2012
4.	Human Resource Management- Lawrence S Kleeman, Biztantra, 2012
5.	Human Resource Management- Aswathappa K, HPH

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. HDPCW		Semester	Sixth Sem
Course Title	Entrepreneurship in Human Development (Theory)			
Course No.	DSC-6.5	DSC	No. of Credits	3+2
Contact hours	52 Hrs		Duration of SEA/Exam	2 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Need for entrepreneurs and entrepreneurship 2. Importance of Entrepreneurial Development Programme 3. Role of financial institutions in supporting entrepreneurs and entrepreneurial ventures 4. Importance of setting up entrepreneurial ventures in the field of Human development 5. Significance of self help groups and setting up of small scale units 	
Content	52 Hrs
Unit – 1 Entrepreneur, Entrepreneurship, Types of entrepreneurship and Entrepreneurial Development Programme (EDP)	12 Hrs
Chapter No. 1: Entrepreneur – concept, definition, types, qualities, functions and challenges. Role of entrepreneurs in the economic development	2 Hrs
Chapter No. 2: Entrepreneurship - Concept, Definition, need and characteristics of entrepreneurship, difference between an entrepreneur and an entrepreneurship.	2 Hrs
Chapter No. 3: Types of entrepreneurship: intrapreneurship, technopreneurship, cultural entrepreneurship, ecopreneurship, netpreneurship, agripreneurship and social entrepreneurship.	3 Hrs
Chapter No. 4: Entrepreneurial Development Programme (EDP) – concept, importance and programs. Factors affecting the entrepreneurial growth. Phases of EDP	5 Hrs
Unit – 2: Business plan, market techniques, project management and financial planning	20 Hrs
Chapter No. 5: Preparation of Business Plan – Introduction, purpose of business plan, ways to generate business opportunity, guidelines in preparation of business plan, steps in preparation of	6 Hrs

business plan, procedure for setting up an enterprise. SWOT analysis.	
Chapter No. 6: Market Techniques – market survey, marketing plan, marketing strategies, resource mobilization, Programme Evaluation Review Technique (PERT) -advantages and limitations, monitoring, quality assurance, Total quality control (TQM).	5 Hrs
Chapter No. 7: Project management: introduction, phases of project management, investment project proposal.	3 Hrs
Chapter No. 8: Financial planning: Importance of project financing, pricing, preparation of balance sheet, ledger entry, break – even analysis, benefit –cost ratio, methods of raising finance for a new venture – bootstrapping, angel investors, venture capital, debt financing, term loans, banks. Financial assistance from various financial institutions. Micro, Small, Medium Enterprises (MSME): concept, role, importance and schemes	6 Hrs
Unit -3: Women entrepreneurs, institutions supporting entrepreneurs, entrepreneurial ventures in Human Development	20 Hrs
Chapter No. 9: Women Entrepreneurs: definition, functions, challenges, strategies for development of women entrepreneur, Grassroots entrepreneurship through SHGs, benefits of SHG. Small Scale Units – objectives of setting promoting small scale units and major steps involved in setting up a small scale unit.	6 Hrs
Chapter No. 10: Institutions supporting women entrepreneurs in India: Consortium of Women Entrepreneurs of India (CWEI), Federation of Indian Women Entrepreneurs (FIWE), Federation of Indian Chambers of Commerce and Industry (FICCI) National Bank for Agriculture and Rural Development (NABARD), Small Industries Development Bank of India (SIDBI), The Khadi and Village Industries Commission (KVIC) and Association of Women Entrepreneurs of Karnataka (AWAKE).	4 Hrs
Chapter No. 11: Entrepreneurial ventures in Human development: Health care providers for expectant and nursing mothers. Master trainer for child care and development, establishment of- early childhood centres, special schools, inclusive preschool centres, crèche. Development of innovative, indigenous and age appropriate educational aids, program developer & coordinator, early childhood curriculum/ content coordinator/consultant, special needs services and children’s library. Therapist, life skills trainer, nutritional consultant and coordinator, school lunch boxes. Day care centre for senior citizens, soft skills trainer, peer educators, personality development consultant/ coordinator, establishment of recreational clubs, old age homes, and home based services. Puppeteer, art and craft associate, software developer and story writer.	6 Hrs
Chapter No. 12: Human Development experts as Counsellor: expectant and lactating mothers, early	4 Hrs

childhood years, school age children, special children, adolescents, marriage, adult years, and family counsellor.	
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Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Need for entrepreneurs and entrepreneurship.					X	X			X			
Importance of Entrepreneurial Development Programme.									X	X	X	
Role of financial institutions in supporting entrepreneurs and entrepreneurial ventures.						X		X	X	X		
Importance of setting up entrepreneurial ventures in the field of Human development.										X	X	
Significance of self help groups and setting up of small scale units.									X	X		X

Pedagogy

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Charantimath M P (2019), Entrepreneurship Development and Small Business Enterprises, Pearson India Education Services Pvt.Ltd
2.	Gupta C.B. and Khanka S.S. (2017), Entrepreneurship and Small Business Management, Sultan Chand & Sons, New Delhi
3.	Irani, L. (2019). Chasing Innovation: Making Entrepreneurial Citizens in Modern India (Vol. 22). Princeton University Press
4.	Kumar, A. (2012). Entrepreneurship: Creating and leading an entrepreneurial organization. Pearson Education India
5.	Kuratko, D. F., & Rao, T. V. (2012). Entrepreneurship: A South-Asian Perspective. Cengage Learning
6.	Masouras, A., Maris, G., & Kavoura, A. (Eds.). (2020). Entrepreneurial Development and Innovation in Family Businesses and SMEs. IGI Global
7.	McAdam, M., & Cunningham, J. A. (Eds.). (2019). Entrepreneurial behaviour: Individual, contextual and microfoundational perspectives. Springer
8.	Mitra, J. (2019). Entrepreneurship, innovation and regional development: an introduction. Routledge.
9.	Sergi, B. S., & Scanlon, C. C. (Eds.). (2019). Entrepreneurship and Development in the 21st Century. Emerald Publishing Limited.
10.	Singh, A., & Reji, E. M. (Eds.). (2020). Social Entrepreneurship and Sustainable Development. Taylor & Francis

Date

Course Coordinator

Subject Committee Chairperson

**Model Curriculum
of
B.A/B.Sc.
with
Human
Development
5th and 6th Semester
(Model II A)**

KARNATAKA STATE HIGHER EDUCATION COUNCIL

Sub-committee members of B.Sc. Human Development

1.	Dr. Sujata Gupta Kedar
2.	Dr. Vijayalaxmi A.H.M
3.	Dr. Savitha L

B1. Model: Undergraduate Program with two core subjects (both with practical) in the first two years and choosing one of them in the third year - Human Development

Sem.	Discipline Core (DSC) (Credits) (L+T+P)	Discipline Elective(DSE) /Open Elective (OE) (Credits) (L+T+P)	Ability Enhancement Compulsory Courses (AECC), Languages (Credits)(L+T+P)	Skill Enhancement Courses (SEC)		Total Credits
				Skill based (Credits) (L+T+P)	Value based (Credits) (L+T+P)	
I	DSC-HD 1 :Fundamentals of Child Development (4+2)	OE-1 Elements of Human Behaviour (3:0:0)	L1-1 (3), L2-1(3) (4+0+0 each)	SEC-1:DigitalFluency (2) (1+0+2)/ Environmental Studies (3)	Health, Wellness, and Yoga (2) (1+0+2)	25/26
II	DSC-HD 2: Early Childhood Careand Education (4+2)	OE-2 Family Relationship and management. (3) (3:0:0)	L1-2(3), L2-2(3) (4+0+0 each)	Environmental Studies(3)/ SEC-1: DigitalFluency (2) (1+0+2)	Sports/NCC /NSS /R&R (2)(S&G/Cultural1(0+0+4)	26/25
III	DSC-HD 3: Development in Adolescence and Adulthood (4+2)	OE 3 Fundamental of Guidance and counseling (3)	L1-3 (3), L2-3(3) (4+0+0 each)	SEC-2: Financial Edu.& Inv. Aw. (2) (1+0+2)	Sports/NCC /NSS /R&R (S&G/Cultural (2)(0+0+4)/ SEC (2)	25
IV	DSC-HD 4:Guidance in Child Development(4+2)	India and Indian Constitution (3) / OE- 3 Early childhood care and Education (3)	L1-4 (3), L2-4(3) (4+0+0 each)	SEC-3: Financial Edu.& Inv.Aw./ AI (2) (1+0+2)	Sports/NCC /NSS /R&R (S&G)/Cultural (2)(0+0+4)/ SEC(2)	25
V	DSC-HD 5: Children with Special needs and Inclusive Education (4+2)	Vocational 1: Basics of toy Making (3)		SEC 4: Cyber Security(2)/ Soft skills andCommunication (1+0+2)		24

	<p>DSC-HD 6: Adolescent Health and Development (4+2)</p> <p>DSC-HD 7: Theoretical perspectives in Human Development. (4)</p> <p>DSE- E1: Crime and Violence / Development of Self and Personality (3)</p>					
VI	<p>DSC-HD 8: Development and Aging (4+2)</p> <p>DSC-HD 9: Programs and policies for vulnerable Groups. (4+2)</p>	Vocational Entrepreneurship		SEC-5: General Aptitude(2) (1+0+2)/ Internship (2)		24



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Human Development		Semester	Fifth Sem
Course Title	Children with special needs and inclusive education (Theory)			
Course No.	DSC 9	DSC	No. of Credits	4+2
Contact hours	60 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Understand the concept, causes, needs of special children and the programs and policies for special children 2. Gain knowledge on physically, mentally, educationally, developmentally sensory challenged children 3. Gain competence in making IEP and providing intervention programs to children with special needs 4. Apply the knowledge learnt in identifying and assessing the children with special needs. 5. Analyze the importance of inclusive education for special children. 	
Content	60 Hrs
Unit – 1 Introduction to children with special needs	
Chapter No. 1: Meaning, causes, needs, various terminologies related to children with special needs, Multi-disciplinary view of children with special needs	10 Hrs
Unit – 2: Classifications of Children with Special Needs	
Chapter No. 2: Developmentally challenged-Mentally challenged, physically challenged, sensory challenged, educationally challenged children, Gifted children	12 Hrs
Unit – 3: Identification and Assessment	
Chapter No. 3: Identification and assessment for developmentally challenged children - Mentally challenged, physically challenged, sensory challenged, educationally challenged children, Gifted children.	8 Hrs
Unit – 4: Interventions and Rehabilitation	
	12 Hrs

Chapter No. 4: Remedial intervention and rehabilitation programmes for different types of challenges- physical and learning ,mental, sensory, social, emotional, Intellectual, Language.	
Unit – 5: Programs and Policies	
Chapter No. 5: Empowering children through the range of programs and policies, Government provisions, Concessions, Facilities and Legislations, Special programmes for the gifted	9 Hrs
Unit – 6: Emerging trends in Special and Inclusive Education	
Chapter No.6: <ul style="list-style-type: none"> • Concepts and principles of inclusion. • Inclusive Education a rights based model • Community linkages and partnership of inclusion • Role of special schools and special teachers/educators in facilitating inclusive education 	9 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-4)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4
Understand the concept, causes, needs of special children and the programs and policies for special children.	X			
Gain knowledge on physically, mentally, educationally, developmentally sensory challenged children.	X			
Gain competence in making IEP and providing intervention programs to children with special needs.		X		
Apply the knowledge learnt in identifying and assessing the children with special needs.				X
Analyze the importance of inclusive education for special children.			X	

Pedagogy

Lecture, Audio visual aids, case study discussion, content review.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Children with special needs and inclusive education (Practical)	Practical Credits	2
Course No.	DSC 10	Contact Hours:	60 Hrs
Practical Topics - 2 credits		13 - 15 weeks	
<ol style="list-style-type: none"> 1. Visit to institutions that cater to the needs of children with special needs and present it 2. Planning and implementation of intervention program for children with any one type of developmental delay (IEP) 3. A report on prevalence of children with disability in the mainstream schools using survey method 4. Preparation of case study on a special needs child 5. Prepare teaching learning materials to foster language/ cognitive/physical/socio emotional development. 			

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Internal Assessment	25
Summative Assessment (ESE)	25
Total	25 marks + 25 marks = 50 marks

References:	
1.	Choudhury, [2014], Behavioral Problems In Children & Adolescents, Jaypee publishers
2.	Durand V Mark , Meme Hieneman (2008), Helping Parents with Challenging Children, Parent Workbook: Positive Family Intervention, USA , Oxford University Press.
3.	Hunt Nancy (2012), Exceptional Children and Youth, US, Wadsworth Publishing and Reetavenugopal, (2013), Effect of Training on Psychomotor Components in Challenged Children, Germany, LAP Lambert Academic Publishing
4.	Jena S. P. K. , [2013], Learning Disability : Theory to Practice, SAGE India, New Delhi
5.	Johnson Elle Olivia , [2012], The Parent's Guide to In-Home ABA Programs, Jessica Kingsley Publishers.
6.	Kar Chintamani (1994) Exceptional Children: Their Psychology and Education Reprint Edition, New Delhi, Sterling Publishers
7.	Meena Kumari [2009], Education for the Children with Special Needs, Anmol Publications Pvt. Ltd.
8.	Mohammad Shazia , M Mudasir Naqsh bandi, Wakar Amin (2012), Intellectually Challenged Children and Their Families, Germany, LAP Lambert Academic Publishing
9.	Rao D B and Jampala Madhubala (2004), Methods of Teaching Exceptional Children, New Delhi, Discovery Publishing House Pvt. Ltd
10.	Susan Victoria, [2012], Autism Spectrum Disorders, Atlantic Publisher
11.	William L. Heward, William Howard, [1999], Exceptional Children - An Introduction to Special Education, 6th Edition, Prentice Hall- Gale

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Human Development		Semester	Fifth Sem
Course Title	Adolescent health and development (Theory)			
Course No.	DSC 11	DSC	No. of Credits	4+2
Contact hours	60 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to

1. Understand the health and development in adolescent years
2. Demonstrate an understanding of physiological and psychological process experienced by adolescents
3. Have an insight about the problems faced by adolescents
4. Develop and awareness of different factors affecting adolescent health and development
5. Gain an ability to analyse the policies and programs related to adolescent health and development

Content	60 Hrs
Unit – 1 Introduction to Adolescence	
Chapter No. 1: Definition, Characteristics Chapter No. 2: Developmental tasks Chapter No. 3: Different perspectives regarding the period, Areas of development- physical-motor, cognitive- language, socio- emotional, personality and moral development	12 Hrs
Unit – 2: Physiology	
Chapter No. 4: Transition from childhood to adulthood- Puberty and its consequences; Physical changes- sexual and reproductive health Chapter No. 5: Gender Differences – Sexuality, sexual needs and sex education Chapter No. 6: Body image and its impact, physical activity etc.,	12 Hrs
Unit – 3: Psychological Changes	
Chapter No. 7: Identity formation Chapter No. 8: Emotions and behavior problems Chapter No. 9: Psychosocial changes- peer and family relationships	12 Hrs

Unit – 4: Problems in adolescence	
Chapter No. 10: Substance abuse, alcohol, delinquency, violence, eating disorders, STIs and pregnancy, Media influence.	12 Hrs
Unit – 5: Prevention and protective measures	
Chapter No. 11: Programs, policies, and other strategies for preventing problems and improving adolescent health.	12 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-4)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4
Understand the health and development in adolescent years	X			
Demonstrate an understanding of physiological and psychological process experienced by adolescents	X			
Have an insight about the problems faced by adolescents	X			
Develop and awareness of different factors affecting adolescent health and development			X	
Gain an ability to analyse the policies and programs related to adolescent health and development			X	

Pedagogy

Lecture, Audio visual aids, case study discussion, content review.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Adolescent health and development (Practical)	Practical Credits	2
Course No.	DSC 12	Contact Hours:	60 Hrs
Practical Topics - 2 credits		13 - 15 weeks	
<ol style="list-style-type: none"> 1. Plan and conduct an awareness campaign to address the mental health issues faced by adolescents 2. Panel discussion/Interactive session with adolescents to address their needs and challenges. 3. Visits to centers/NGOs working for adolescents 4. Conduct a street play to create awareness about the programs and policies for adolescents. 5. Conduct a study on peer relationships among adolescents. 			

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Internal Assessment	25
Summative Assessment (ESE)	25
Total	25 marks + 25 marks = 50 marks

References:	
1.	Choudhury Jaydeep [2014], Behavioral Problems In Children & Adolescents, Publisher: Jaypee, New Delhi.
2.	Mehta Manju, [2000], Adolescent Psychology, Published by Pointer Publishers.
3.	Santrock John [2006], Adolescence, 11th edition, Tata McGraw-Hill publication, New York
4.	David and David (2013) The Problem of Vocational Education, Hard press Publishing
5.	Olson Ginny (2006), Teenage Girls: Exploring Issues Adolescent Girls Face and Strategies to Help Them, Zondervan Publishing Company
6.	Simiyu Violet (2014), Sexual Reproductive Health Challenges Facing Adolescent Girls, LAP Lambert Academic Publishing
7.	Steinberg Laurence D (2013), Adolescence, New York, McGraw-Hill Education
8.	Dostoyevsky Fyodor , Richard Pevear (2004), The Adolescent, Vintage Books

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Human Development		Semester	Fifth Sem
Course Title	Theoretical perspectives in human development (Theory)			
Course No.	DSC 13	DSC	No. of Credits	4
Contact hours	60 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Demonstrate an understanding of the theories of personality in human development 2. Understand ethological, attachment, and ecological theory of human development 3. Analyze new trends in human development theory 4. Gain a perspective on learning theories 5. Comprehend theories of personality in the Indian context 	
Content	60 Hrs
Unit – 1 Introduction to different perspectives and approaches of personality	
Chapter No. 1: Theory- definition, characteristics, significance, types	16 Hrs
Chapter No. 2: Psychoanalytic theory of Sigmund Freud, Psychosocial theory of Erick H Erickson	
Unit – 2: Ethological and ecological theories	
Chapter No. 3: Darwin, Lorenz and Tinbergen	8 Hrs
Chapter No. 4: Bronfen Brenner Ecological theory	
Unit – 3: Humanistic theories	
Chapter No. 5: Abraham Maslow, Carl R. Rogers, Carl Jung	8 Hrs
Unit – 4: Learning theories and New trends in Human development Theory	
Chapter No. 6: Pavlovs- classical conditioning, B.F. Skinner- Operant Conditioning, Bandura- Observation learning.	14 Hrs
Chapter No. 7: Emotional intelligence, Gardner’s Multiple intelligence	
Unit – 5: Indian theories	
Chapter No. 8: Aurobindo’s personality theory. Vivekananda’s theory on personality Buddha’s philosophy	14 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-4)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4
Demonstrate an understanding of the theories of personality in human development			X	
Understand ethological, attachment, and ecological theory of human development			X	
Analyze new trends in human development theory			X	
Gain a perspective on learning theories			X	
Comprehend theories of personality in the Indian context			X	

Pedagogy

Lecture, Audio visual aids, case study discussion, content review.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:

1.	Feist Jess and Gregory Feist (2013), Theories of Personality 7E (English) 7th Edition, McGraw Hill Education (India) Private Limited, New Delhi.
2.	Crandell Thomas L, et al. (2013), Human Development – ninth edition, Tata McGraw Hill Education
3.	Freud Sigmund (2015), A General Introduction to Psychoanalysis- a classic reprint series, Forgotten books
4.	Feist Jess , Gregory Feist (2013), Theories of Personality, 7th edition, New Delhi, McGraw-Hill Education
5.	Green Michael G. Theories Of Human Development: A Comparative Approach, 2Nd Edition, pearson publication
6.	Newman Barbara M. and Philip R. Newman (2007), Theories of Human Development, UK, Psychology Press
7.	Crowne Douglas P (2009), Personality Theory, USA, Oxford University Press.
8.	Freud Sigmund (2001), Complete Psychological Works Of Sigmund Freud, The Vol 23, New Delhi, Vintage Classics- Penguin
9.	Jones N. Blurton (1974), Ethological Studies of Child Behaviour, USA, Cambridge University Press

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Human Development		Semester	Fifth Sem
Course Title	Crime and violence (Theory)			
Course No.	DSE 1	DSE	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

<p>Course Outcomes (COs): At the end of the course the student should be able to</p> <ol style="list-style-type: none"> 1. Understand the concept of crime and violence. 2. Identify the different types of violence and their prevalence. 3. Recognize the common characteristics of criminal and different types of crime. 4. Comprehend violence throughout life span. 5. Analyze means to overcome violence 6. Identify the consequences and associated laws of cybercrime. 	
Content	45 Hrs
Unit – 1 Understanding Crime and Violence	
<p>Chapter No. 1: Understanding Crime and Violence: Definition and causes, determinants of crime and violence</p>	7 Hrs
Unit – 2: Types of violence and prevalence	
<p>Chapter No. 2: Types of violence and prevalence - domestic violence, sexual violence, violence against women and children, Youth Violence, Abuse of Elders and Disabled, political violence</p>	10 Hrs
Unit – 3: Characteristics of crime and criminals	
<p>Chapter No. 3: General characteristics of crime and criminals, Types of crimes, Chapter No. 4: Analyzing Crime Problems - habitual Offenders -impact of Criminogenic Commodities: use and abuse</p>	10 Hrs

Unit – 4: Role of family and society in overcoming violence	
Chapter No. 5: Role of family and society in overcoming violence – means of ways to overcome (strengthening families, imparting values, counselling, creating healthy neighbourhoods). Chapter No. 6: The impact of violence and crime on children Chapter No. 7: Exploring the legal and emotional entanglements that trap victims of violence. Overview of the laws relating to crime and Violence	10 Hrs
Unit – 5: Cyber crime	
Chapter No. 8: Cybercrime, : meaning , types, and trends and associated laws	8 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-4)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4
Understand the concept of crime and violence.	X			
Identify the different types of violence and their prevalence.	X			
Recognize the common characteristics of criminal and different types of crime.	X			
Comprehend violence throughout life span.	X			
Analyse means to overcome violence		X		
Identify the consequences and associated laws of cyber crime			X	

Pedagogy

Lecture, Audio visual aids, discussions, visits etc.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Dostoyevsky Fyodor (2002). Crime and Punishment-3rd edition. Penguin Classics.
2.	Frank E. Hagan (2008). Introduction to Criminology, 6th edition. Thousand Oaks, CA: Sage Publishing.
3.	Hickman Tommie N (2010). From Violence to the Violin: Disturbing Information about Violence and Crime in Chicago. Publisher: America Star Books.
4.	Johnson Wayne (2014). A History of Violence: An Encyclopedia of 1400 Chicago Mob Murders. 1st edition. On Demand Publishing, LLC-Create Space
5.	Moore Mark H., Susan Estrich, Daniel McGillis, and William Spelman (1984), Dangerous Offenders: The Elusive Target of Justice. Cambridge Harvard University Press, Ch. 2: Dangerous Offenders, pp.23-62
6.	Willbur Mike (2012) More Than Domestic Violence: The Insidious Story. Tate Publishing & Enterprises

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Human Development		Semester	Fifth Sem
Course Title	Development of self and personality (Theory)			
Course No.	DSE 1	DSE	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Understand the concept of self and personality 2. Know the factors that contribute the development of self and personality 3. Learn different approaches to development of self and personality 4. Understand the role of family and society in development of self and personality 5. Ability to demonstrate self-improvement techniques. 	
Content	45 Hrs
Unit – 1 Concept of Self and Personality	
Chapter No. 1: Concept of self and personality; self-esteem, definitions and domains / types of personality Chapter No. 2: Resilience theory -Kirby and Bernard. Theories of personality - Jung, Roger	9 Hrs
Unit – 2: Approaches to development of self and personality	
Chapter No. 3: Self enquiry and introspection, memories of childhood and their influence, Family history and its impact on individuals. Biographies of significant persona as illustration.	10 Hrs
Unit – 3: Development of self and personality across the life span	
Chapter No. 4: Significance of birth, Early experiences and its influence, the sense of self at adolescence, changing roles and responsibilities during early, middle and late adulthood.	8 Hrs
Unit – 4: Self and personality in the context of community	

<p>Chapter No. 5: Understanding self; SWOT Analysis, Concept of multiple intelligence.</p> <p>Chapter No. 6: Influence of family, school, college, peers and culture on development of self and personality</p> <p>Chapter No. 7: Role of community in the development of self and personality.</p>	9 Hrs
Unit – 5: Self-improvement Techniques	
<p>Chapter No. 8: Recent trends, Confidence building, stress management, motivation, communication skills, conflict resolution and decision making</p> <p>Fostering psychosocial competence through life skills education, relaxation techniques</p>	9 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-4)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4
Understand the concept of self and personality	X			
Know the factors that contribute the development of self and personality	X			
Learn different approaches to development of self and personality	X			
Understand the role of family and society in development of self and personality	X			
Ability to demonstrate self-improvement techniques		X		

Pedagogy

Lecture, Audio visual aids, discussions, visits etc.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Bee, H. (1989). The developing child, Harper and Row, New York
2.	Friedman H.S.,and Miriam W.S.(2006). Personality Classic Theories and Modern Research, Second edition,Dorling Kindersley Pvt. Ltd.,New Delhi
3.	Mead, M. (1976)). Male and Female , Penguin, United Kingdom.
4.	Papalia, D.E., Sally Wendkos olds (1996), Human Development, Fifth edition, Tata McGraw-Hill Publishing Company Ltd., New Delhi.
5.	Rice, F.P. (2001), Human Development – A.Life Span Approach, Fourth Edition, Prentice Hall Inc., New Jersey

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Human Development		Semester	Fifth Sem
Course Title	Basics of toy making (Theory)			
Course No.	VOC 1	VOC	No. of Credits	3 (1 + 2 Practical)
Contact hours	15 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Know the importance of play and play materials. 2. Understand the concept of handmade designs, product development and marketing. 3. Demonstrate the skills required for design making, production and marketing. 	
Content	15 Hrs
Unit – 1 Play during Childhood	
Chapter No. 1: Play Definition, concept, importance of play during childhood, types of play, characteristics of children’s play, stages.	5 Hrs
Unit – 2: Toys and its Importance	
Chapter No. 2: Toys: Definition, concepts, importance of toys in child development, types of children’s toys, history of toy making.	4 Hrs
Unit – 3: Design making	
Chapter No. 3: Hand designs, Definition, concept, importance, procedure, child ergonomics, Safety issues, and developmental appropriateness.	6 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-4)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4
Know the importance of play and play materials.	X			
Understand the concept of handmade designs, product development and marketing.		X		
Demonstrate the skills required for design making, production and marketing.		X		

Pedagogy

Lecture, Audio visual aids, discussions, visits etc.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Basics of toy making (Practical)	Practical Credits	2
Course No.	VOC 1	Contact Hours:	60 Hrs
Practical Topics - 2 credits		13 - 15 weeks	
<ol style="list-style-type: none"> 1. Visit to toy making industry 2. Market survey: Analyzing different toys based on different criteria. (age appropriateness, multipurpose, utility, aesthetics, safety) 3. Conducting a survey on parents and teachers regarding their selection of toys (things they consider) 4. Designing a toy for preschoolers / infants/school children/adolescence (domain specific) and testing the efficacy of the toys. 5. Development of the designed product, administration and getting feedback. 			

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Internal Assessment	25
Summative Assessment (ESE)	25
Total	25 marks + 25 marks = 50 marks

References:	
1.	Singer D., 2010, Play = Learning: How Play Motivates and Enhances Children's Cognitive and Social-Emotional Growth
2.	Frost J, Wortham S, Reifel, 2011, Play and Child Development by , 4th edition, Pearson Publishers, New Delhi
3.	Brown. S and Vaughan. C., 2010, Play: How it Shapes the Brain, Opens the Imagination, and Invigorates the Soul, Avery; Reprint edition.
4.	Stowe D., 2016, Making Classic Toys That Teach: Step-by-Step Instructions for Building Froebel's Iconic Developmental Toys , Spring House Press Publishers
5.	Ashby, Michael, and Kara Johnson (2002) Materials and Design: The Art and Science of Material Selection in Product Design. Boston, MA: Butterworth-Heinemann.
6.	Sutton-Smith Brian (1986) Toys as Culture. New York, NY: Gardner Press
7.	Bee, Helen L., and Denise Roberts Boyd (2003) The Developing Child. 10th ed. Boston, MA: Allyn& Bacon
8.	Brandow-Faller M, Yonan M., (2019) Childhood by Design: Toys and the Material Culture of Childhood, 1700-present (Material Culture of Art and Design), Bloomsbury Visual Arts.

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Human Development		Semester	Sixth Sem
Course Title	Development and Aging (Theory)			
Course No.	DSC 14	DSC	No. of Credits	4+2
Contact hours	60 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

<p>Course Outcomes (COs): At the end of the course the student should be able to</p> <ol style="list-style-type: none"> 1. Understand the process of ageing 2. Develop an ability to understand the implications of theories related to ageing 3. Understand the lifestyle changes and adjustments to aging 4. Learn and be aware about the problems faced by the elderly 5. Acquire knowledge on the importance of preparation for retirement. 	
Content	60 Hrs
Unit – 1 Introduction to Aging	
<p>Chapter No. 1: Concept, Meaning and Phenomenon of Aging Chapter No. 2: Facts, Myths and Realities Chapter No. 3: Demographics of aging</p>	10 Hrs
Unit – 2: Theories of Aging	
<p>Chapter No. 4: Biological theories –wear and tear theory, free radical theory, cellular reproduction theory Disengagement theory, activity theory, Human Development theory, Continuity theory, Age Stratification theory, Labeling theory, Clinker’s theory.</p>	14 Hrs
Unit – 3: Changes in Lifestyle	
<p>Chapter No. 5: Family pattern, Changing roles and the aging family-conjugal, Husband - wife relations. Chapter No. 6: Sexual adjustment; marital adjustment; Chapter No. 7: Intergenerational family relations-Grandparenthood, Singlehood, life styles, factors influencing quality of life.</p>	12 Hrs
Unit – 4: Problems in Aged Population	
<p>Chapter No. 8: Elder abuse, Mental Disorders, Physical deterioration and problems, Societal Attitude.</p>	12 Hrs

Unit – 5: Work, Leisure, Retirement, Bereavement	
Chapter No. 9: Work-meaning of work, individual motivation; Leisure; Chapter No. 10: Retirement benefits, Attitude towards retirement, bereavement, issues related to death.	12 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-4)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4
Understand the process of ageing	X			
Develop an ability to understand the implications of theories related to ageing			X	
Understand the lifestyle changes and adjustments to aging	X			
Learn and be aware about the problems faced by the elderly	X			
Acquire knowledge on the importance of preparation for retirement	X			

Pedagogy

Lecture, Audio visual aids, discussions, visits etc.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Development and Aging (Practical)	Practical Credits	2
Course No.	DSC 15	Contact Hours:	60 Hrs
Practical Topics - 2 credits		13 - 15 weeks	
<ol style="list-style-type: none"> 1. Visit to elderly care centres /NGOS. 2. Case study presentation – on two elderly living in an old age home 3. Old age : interactive session/ workshops for the elderly population 4. Review newspaper and magazine articles related to elderly abuse 5. Debates on issues and perspectives related to different aspects of the elderly population. 			

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Internal Assessment	25
Summative Assessment (ESE)	25
Total	25 marks + 25 marks = 50 marks

References:

1.	Hooyman Kiyak, [1999], Social Gerontology - A Multidisciplinary Perspective (English) 5th Edition, Allyn & Bacon.
2.	Ramamurti P.V. Et Al., [2004], Handbook of Indian Gerontology (English) 01 Edition, Serial Publication
3.	Sanwal Krishnanand [2008], Fundamentals of Gerontology (English) 01 Edition, Akansha Publishing House
4.	DanneferDale, Chris Phillipson (2010),The SAGE Handbook of Social Gerontology, SAGE Publications Ltd
5.	Paltasingh Tattwamasi(2015), Caring for the Elderly: Social Gerontology in the Indian Context, SAGE India
6.	Bhai Thara L, (2002),Ageing: Indian Perspective,1 st edition, D.K. Print World Ltd
7.	Ekeanyanwu Chukwuma (2011), The Theories of Aging, LAP Lambert Academic Publishing
8.	Mohapatra Tanuja(2011), Problems of Elderly in Families Problems: Care & Support

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Government of Karnataka

Model Curriculum

Program Name	B.Sc. Human Development		Semester	Sixth Sem
Course Title	Programs and Policies for the Vulnerable Groups (Theory)			
Course No.	DSC 16	DSC	No. of Credits	4+2
Contact hours	60 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Understand different forms of vulnerability in India. 2. Gain knowledge about the issues and challenges faced by vulnerable groups in India and apply the same to sensitize the public. 3. Analyze the programs and policies related to vulnerable groups 4. Identify different means to eradicate vulnerability 5. Able to appreciate the role of various organizations in uplifting the vulnerable groups. 	
Content	60 Hrs
Unit – 1 Understanding vulnerable groups	
Chapter No. 1: <ol style="list-style-type: none"> a) Concept and definition of vulnerable groups. b) Role of culture in vulnerability. c) Trends and forms of vulnerability: socio-economic and political discrimination, poverty and livelihood deprivation, exploitation, segregation. d) Global scenario of vulnerable groups 	12 Hrs
Unit – 2: Vulnerable groups in India	
Chapter No. 2: <ol style="list-style-type: none"> a) Vulnerable groups facing structural discrimination (women, scheduled castes, Dalit's, scheduled tribes) b) Vulnerability of children and aged c) Vulnerability due to disability d) Vulnerability due to migration e) Vulnerability due to stigma and discrimination (people living with HIV/AIDS, sexual minorities). 	12 Hrs
Unit – 3: Policies and regulations	
Chapter No. 3:	12 Hrs

a) Role of state and central government in upliftment of Vulnerable groups b) Constitutional Provisions for the upliftment of vulnerable groups.	
Unit – 4: Role of organizations and schemes for vulnerable group	
Chapter No. 4: a) National and International Organizations working for the welfare of vulnerable groups –Vimochana, Ondede, Accept Society, Solidarity Foundation, Aneka, Karnataka Sexual Minorities Forum, etc. b) Schemes and programs in national and international level for the vulnerable groups	12 Hrs
Unit – 5: Means of Eradicating the Situation of vulnerability	
Chapter No. 5: a) Education, employment and political participation b) Access to health and civic amenities c) Socio-cultural assimilation and absorption	12 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-4)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4
Understand different forms of vulnerability in India	X			
Gain knowledge about the issues and challenges faced by vulnerable groups in India and apply the same to sensitize the public.	X			
Analyze the programs and policies related to vulnerable groups			X	
Identify different means to eradicate vulnerability		X		
Able to appreciate the role of various organization in uplifting the vulnerable groups			X	

Pedagogy

Lecture, Audio visual aids, discussions, visits etc.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Programs and Policies for the Vulnerable Groups (Practical)	Practical Credits	2
Course No.	DSC 17	Contact Hours:	60 Hrs
Practical Topics - 2 credits		13 - 15 weeks	
<ol style="list-style-type: none"> 1. Case studies of the vulnerable groups 2. Newspaper Article review on the issues related to vulnerability and Challenges faced by the vulnerable group 3. Interface with NGOs and visits 4. Awareness and Sensitizing the community on vulnerable groups 5. Write a term paper on constitutional provisions for vulnerability of women/ children/aged. 			

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Internal Assessment	25
Summative Assessment (ESE)	25
Total	25 marks + 25 marks = 50 marks

References:	
1.	Gajanafar Alam_ (2014), Sociology of Marginalized Communities, Globus Press.
2.	ChalamK S (2011), Economic Reforms and Social Exclusion Impact of Liberalization on Marginalized Groups in India, Sage publications, New Delhi.
3.	OOMMEN T. K. (2010), Social Movements I : Issues of Identity, Oxford University press, USA.
4.	<u>Rahman</u> Hakikur (2005), Empowering Marginal Communities with Information Networking, Idea Group publishing.
5.	Sahni Rohini et al. (2008), Prostitution and Beyond: An Analysis of Sex Workers in India, New Delhi, SAGE India;
6.	GathiaJoseph (1999), Child Prostitution in India, Concept Publishing Co
7.	Marie Tashia (2009) Rape. . . Survivor Not Victim, Trafford Publishing
8.	Russell Josse and Ronald Cohn (2013), Transgender, Book on Demand Ltd.
9.	Nietzsche Friedrich Wilhelm , Thomas Common (2006),The Gay Science, Dover Publications

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Human Development		Semester	Sixth Sem
Course Title	Family and Community Dynamics (Theory)			
Course No.	DSC 18	DSC	No. of Credits	4+2
Contact hours	60 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Understand the components of family and marriage 2. Gain knowledge of the family relationship, family processes and family life cycles. 3. Understand how to manage family system, functions of family in India. 4. Recognize the different approaches to family study. 5. Understand the impact separation on education and employment of women outside the family 6. Knowledge of the laws pertaining to marriage and divorce. 	
Content	60 Hrs
Unit – 1 Marriage	
<p>Chapter No. 1: Meaning, Strengths and Needs, Dynamics and Diversity of Families, Contemporary Gender Roles, Issues discussed before marriage, factors which contribute to a successful marriage.</p> <p>Chapter No. 2: Changing concept of marriage and family</p> <p>Chapter No. 3: Friendship, Love, and Commitment, Communication and Conflict Resolution, Singlehood, Pairing, and Co-Habitation, Understanding Sexuality, Pregnancy and Parenting.</p>	16 Hrs
Unit – 2: Family	
<p>Chapter No. 4: Meaning, Types, Functions, Adjustments, Changing trends, Family Life Cycle.</p>	12 Hrs
Unit – 3: Management of Family Systems	
<p>Chapter No. 5: Changing structural and functional aspects of Indian family.</p>	14 Hrs

Chapter No. 6: Different approaches to family study- Biological, Historical, Sociological, Anthropological, Developmental, structural and functional approach.	
Chapter No. 7: Marriage, Work, and Economics, demands of responsible parenting. Coping techniques for individuals dealing with crisis in the family. Family Violence and Sexual Abuse.	
Unit – 4: Separation and Divorce	
Chapter No. 8: Remarriage, Single-Parent Families and Stepfamilies – rural & Urban perspectives, modern society and its influence on the family.	12 Hrs
Unit – 5: Marriage and Divorce laws	
Chapter No. 9: Marriage and Divorce laws and Inheritance laws in Indian perspective	6 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-4)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4
Understand the components of family and marriage	X			
Gain knowledge of the family relationship, family processes and family life cycles.	X			
Understand how to manage family system, functions of family in India.		X		
Recognize the different approaches to family study.			X	
Understand the impact separation on education and employment of women outside the family	X			

Pedagogy

Lecture, Audio visual aids, discussions, visits etc.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:

1.	Augustine, J.N. (Ed.) (1982): The family in Transition, New Delhi: Vikas Publishing House
2.	Benokraitis Nijole V (2014), Marriages and Families, 8th edition, Pearson
3.	Berg-Cross (2000), Basic Concepts in Family Therapy, Haworth Press.
4.	Coleman, J.C. (1986): Intimate Relationships, Marriage and the Family, Chicago: Macmillan Publishing Co
5.	Dole Dawn Cooperrider , Jen Hetzel Silbert , Ada Jo Mann (2008), Positive Family Dynamics: Appreciative Inquiry Questions to Bring Out the Best in Families, Taos Institute Publications
6.	Jenkins Suzanne (2012) Family Dynamics, Create Space Independent Publishing Platform
7.	Mahapragya Acharya (2009), Happy and Harmonious Family, Harper Collins-India.
8.	Ratra Amiteshwar (2009), Marriage and family, Deep & Deep Publication.
9.	Singh Shailendra Kumar (2009), Encyclopedia of Indian Marriage and Family-1 Edition, Anmol Publications Pvt. Ltd.
10.	Strong, Bryan (2001), The Marriage and Family Experience, Eighth Edition, Wadsworth Thomson Learning

Date**Course Coordinator****Subject Committee Chairperson**



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Human Development		Semester	Sixth Sem
Course Title	Alternative Health Strategies and Therapies (Theory)			
Course No.	DSE 2	DSC	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Conceptualize alternative health strategies and therapies 2. Understand the types and use of different alternative health strategies 3. Learn about different types of therapies to heal health issues 4. Know the recent research trends and development in utilization and impact of alternative health strategies and therapies. 5. Understand the other methods of healing and wellbeing and scope of the same. 	
Content	45 Hrs
Unit – 1 Alternative health strategies	
Chapter No. 1: Definition, concept, types, need or scope of alternative health strategies (AHS), Emergence of AHS and therapies in India.	8 Hrs
Unit – 2: Alternative health strategies across lifespan	
Chapter No. 2: Alternative health strategies across lifespan – need and importance in childhood, adolescents, adulthood, pregnant women, health problems, special children.	9 Hrs
Unit – 3: Ancient techniques	
Chapter No. 3: Biofeedback, Reflexology, Energy Healing, Yoga, Pranayam, Meditation, visual imagery, mindfulness, Acupuncture, Reiki and Acupressure.	10 Hrs
Unit – 4: New trends in Therapies	
Chapter No. 4: Definition, types, effectiveness, benefits and techniques: Music Therapy/ Sound Therapy, Art-Based Therapy, Laughter Therapy, Play therapy, Massage therapy,	12 Hrs

Movement Therapy. Chapter No. 5: Definition, types, effectiveness, benefits and techniques: Talking therapy, Beauty therapy, Bibliotherapy, Equine therapy, Light therapy Hypnotherapy, Colour Therapy, Crystal Therapy, Aroma therapy, Aqua therapy and Magnetic therapy, Tai chi, JPMR, NLP, TA.	
Unit – 5: Research trends	
Chapter No. 6: Research trends and cross-cultural trends in alternative health strategies and therapies and their effect on health and wellbeing.	6 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-4)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4
Conceptualize alternative health strategies and therapies	X			
Understand the types and use of different alternative health strategies	X			
Learn about different types of therapies to heal health issues			X	
Know the recent research trends and development in utilization and impact of alternative health strategies and therapies.			X	
Understand the other methods of healing and wellbeing and scope of the same.		X		

Pedagogy

Lecture, Audio visual aids, discussions, visits etc.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Arleen McCarty Hynes(2020) Bibliotherapy The Interactive Process: A Handbook. Routledge.
2.	Faber Birren,(1950) Color Psychology and Color Therapy: A Factual Study of the Influence of Color on Human Life. Ingram short title.
3.	Hibbs Martin J(2018) Alternative/Complementary Therapies and Self-Help Techniques: 2 (You and Your Health). Create space Independent Publishing Platform
4.	Rosalind Boyd (2022) Reflexology: Quick Guide to Easy Reflexology Techniques (The Complete Guide to Reflexology Relieve Pain and Reduce Tension) Rosalind Boyd

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Human Development		Semester	Sixth Sem
Course Title	Human Sexuality Across Life Span (Theory)			
Course No.	DSE 2	DSC	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Understand the concept of human sexuality 2. Know the concerns and issues related to sexuality 3. Recognize the problems and challenges associated with sexuality 4. Understand and identify the concerns and challenges of transgenders. 5. Understand the importance of sexuality education across ages. 	
Content	45 Hrs
Unit – 1 Understanding Human sexuality	
Chapter No. 1: Concept of sexuality, perspectives on human sexuality, sexual development and changes across lifespan. Chapter No. 2: Female and Male anatomy	10 Hrs
Unit – 2: Issues and concerns related to sexuality	
Chapter No. 3: Body image, Sexual health, Sexual behavior, Sexual identity, Sexual orientation, Theories of sexual orientation, Sexual response, Alternate sexual behaviour. Chapter No. 4: Myths and Misconceptions about sexuality	10 Hrs
Unit – 3: Women and sexuality	
Chapter No. 5: Birth control and contraception, Reproductive tract infections and prevention, abortion. Chapter No. 6: Menopause - stages and its consequences.	10 Hrs

Unit – 4: Men and sexuality	
Chapter No. 7: Problems and challenges: Male fertility, Andropause and its consequences: premature ejaculation, erectile dysfunction, reduced libido.	5 Hrs
Unit – 5: Transgender and sexuality	
Chapter No. 8: Transgender Problems, challenges and concerns. Chapter No. 9: Sexual violence and consequences- Sexual abuse, Incest, Rape, Sexual manipulation, Sexual harassment, Harmful practices.	5 Hrs
Unit – 6: Community Education across age group	
Chapter No. 10: Genital care and hygiene, Menstrual hygiene, STDs, HIV and AIDS, Organisations working on issues related to sexuality.	5 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-4)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4
Understand the concept of human sexuality	X			
Know the concerns and issues related to sexuality	X			
Recognise the problems and challenges associated with sexuality	X			
Understand and identify the concerns and challenges of transgenders.	X			
Understand the importance of sexuality education across ages.		X		

Pedagogy

Lecture, Audio visual aids, discussions, visits etc.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Baggott L M (1997) , Human Reproduction, Cambridge University Press
2.	Jones Richard E and Kristin H Lopez (2006), Human Reproductive Biology Academic Press
3.	Kumar Raj, et al. (2000), Women and Sexuality, Anmol Publications Pvt. Ltd.
4.	Sharma Vinod Kumar (2009), Sexually Transmitted Diseases and HIV and AIDS, second edition, Anshan Ltd
5.	Holmes King K., et al. (2008), Sexually Transmitted Diseases, 4 th edition, Mc Graw Hill Education/Exclusively distd. By Jaypee
6.	Russell Josse and Ronald Cohn (2013), Transgender, Book on Demand Ltd.
7.	Nietzsche Friedrich Wilhelm , Thomas Common (2006),The Gay Science, Dover Publications
8.	Sexuality Over the Life Span- http://virgil.azwestern.edu/~dag/SexNotes1d.html

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Human Development		Semester	Sixth Sem
Course Title	Entrepreneurship in Human Development (Theory)			
Course No.	VOC 2	VOC	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Outcomes (COs): At the end of the course the student should be able to	
<ol style="list-style-type: none"> 1. Knowledge of the concept of entrepreneurship. 2. Ability to create a business plan and manage a project. 3. Understanding of the scope for women as entrepreneurs and knowledge about institutions supporting women entrepreneurs. 4. Develop entrepreneurial competencies and setup, manage entrepreneurial ventures in the field of human development. 	
Content	45 Hrs
Unit – 1 Entrepreneur and Entrepreneurship	
<p>Chapter No. 1: Concept, definition, types, qualities, functions and challenges; concept, definition, need and characteristics of entrepreneurship, difference between an entrepreneur and an entrepreneurship, types of entrepreneurship: intrapreneurship, technopreneurship, cultural entrepreneurship, ecopreneurship, netpreneurship and social entrepreneurship.</p> <p>Chapter No. 2: Entrepreneurial Development Programme (EDP) – concept, importance and programmes, Factors affecting the entrepreneurial growth.</p>	7 Hrs
Unit – 2: Preparation of Business Plan and financial plan	
<p>Chapter No. 3: Introduction and purpose of business plan, ways to generate business opportunity, guidelines in preparation of business plan, procedure for setting up an enterprise. Market survey, resource mobilization, Programme Evaluation Review Technique (PERT) - advantages and limitations, monitoring, quality assurance, Total quality control (TQM).</p> <p>Chapter No. 4: Project management and financial planning - Introduction, phases of project management, investment project proposal; Importance of project financing, pricing,</p>	12 Hrs

preparation of balance sheet, ledger entry, break – even analysis, benefit –cost ratio, methods of raising finance for a new venture – bootstrapping, angel investors, venture capital, debt financing, term loans, banks; Financial assistance from various financial institutions, Micro, Small, Medium Enterprises (MSME): concept, role, importance and schemes.	
Unit – 3: Women Entrepreneurs	
Chapter No. 5: Definition, functions, challenges, strategies for development of women entrepreneur, Grassroots entrepreneurship through SHGs, benefits of SHG; Small Scale Units – objectives of setting promoting small scale units and major steps involved in setting up a small scale unit.	6 Hrs
Unit – 4: Institutions supporting women entrepreneurs in India	
Chapter No. 6: Consortium of Women Entrepreneurs of India (CW EI), Federation of Indian Women Entrepreneurs (FIWE), Federation of Indian Chambers of Commerce and Industry (FICCI) National Bank for Agriculture and Rural Development (NABARD), Small Industries Development Bank of India (SIDBI), The Khadi and Village Industries Commission (KVIC) and Association of Women Entrepreneurs of Karnataka (AWAKE).	8 Hrs
Unit – 5: Entrepreneurial ventures in Human development	
Chapter No. 7: Health care providers for expectant and nursing mothers. Master trainer for child care and development, establishment of early childhood centres, special schools, inclusive preschool centres, crèche, development of innovative, indigenous and age appropriate and educational aids, program developer & coordinator, early childhood curriculum/ content coordinator/consultant, special needs services and children’s library. Therapist, life skills trainer, nutritional consultant and coordinator of school lunch box. Day care centre for senior citizens, soft skills trainer, peer educators, personality development consultant/ coordinator, establishment of recreational clubs, old age homes, and home based services, Puppeteer, art and craft associate, software developer and story writer. Chapter No. 8: Counsellor for Expectant and Lactating mothers, early childhood years, school age children, special children, adolescents, marriage and family counsellor.	12 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-4)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4
Knowledge of the concept of entrepreneurship.		X		
Ability to create a business plan and manage a project.		X		
Understanding of the scope for women as entrepreneurs and knowledge about institutions supporting women entrepreneurs.			X	
Develop entrepreneurial competencies and setup, manage entrepreneurial ventures in the field of human development.		X		

Pedagogy

Lecture, Audio visual aids, discussions, visits etc.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Charantimath M P (2019), Entrepreneurship Development and Small Business Enterprises, Pearson India Education Services Pvt. Ltd.
2.	Gupta C.B. and Khanka S.S. (2017), Entrepreneurship and Small Business Management, New Delhi, Sultan Chand & Sons
3.	Irani, L. (2019). Chasing Innovation: Making Entrepreneurial Citizens in Modern India (Vol. 22). Princeton University Press
4.	Kumar, A. (2012). Entrepreneurship: Creating and leading an entrepreneurial organization. Pearson Education India
5.	Kuratko, D. F., and Rao, T. V. (2012). Entrepreneurship: A South-Asian Perspective. Cengage Learning. 6. Masouras, A., Maris, G., and Kavoura, A. (Eds.). (2020). Entrepreneurial Development and Innovation in Family Businesses and SMEs. IGI Global
6.	McAdam, M., and Cunningham, J. A. (Eds.). (2019). Entrepreneurial behaviour: Individual, contextual and microfoundational perspectives. Springer
7.	Mitra, J. (2019). Entrepreneurship, innovation and regional development: an introduction. Routledge. 9. Sergi, B. S. & Scanlon, C. C. (2019). Entrepreneurship and Development in the 21st Century. Emerald Publishing Limited
8.	Singh, A., & Reji, E. M. (2020). Social Entrepreneurship and Sustainable Development. Taylor & Francis

Date

Course Coordinator

Subject Committee Chairperson

**Model Curriculum
of
B.A / B.Sc. in
Family Resource Management
5th and 6th Semester
(Model II C)**

KARNATAKA STATE HIGHER EDUCATION COUNCIL

Sub-committee members of BA/B.Sc. Family Resource Management

1.	Dr Mamatha B
2.	Smt. Suchetha Prasad
3.	Dr Asha Jyothi U H
4.	Dr Rebecca John

Home Science: Family Resource Management (Model B1-IIc)

Semester	Course No.	Course Category	Theory/ Practical	Credits	Paper Title	Marks	
						S.A	I.A
I.	HSFRMT1.1	DSC-A1	Theory	4	Introduction to Family Resource Management	60	40
	HSFRMP1.1	DSC-A2	Practical	2	Introduction to Family Resource Management	25	25
	B1	DSC-B1	Theory	4			
	B2	DSC-B2	Theory	2			
	HSFRM1.2	OE-1	Theory	3	Basics of Art and Design	60	40
II.	HSFRMT2.1	DSC-A3	Theory	4	Family finance and Consumer Economics	60	40
	HSFRMP2.1	DSC-A4	Practical	2	Family finance and Consumer Economics	25	25
	B3	DSC-B3		4			
	B4	DSC-B4		2			
	HSFRMT2.2	OE-2		3	Fundamentals of Resource Management	60	40
III.	HSFRMT3.1	DSC-A5	Theory	4	Architectural Drafting	60	40
	HSFRMP3.1	DSC-A6	Practical	2	Architectural Drafting	25	25
	B5	DSC-B5		4			
	B6	DSC-B6		2			
	HSFRMT3.2	OE-3		3	Consumer Economics	60	40
IV.	HSFRMT4.1	DSC-A7	Theory	4	Art of Entertainment and Etiquette	60	40
	HSFRMP4.1	DSC-A8	Practical	2	Art of Entertainment and Etiquette	25	25
	B7	DSC-B7		4			
	B8	DSC-B8		2			
	HSFRMT4.2	OE-4		3	Front office Management and house keeping	60	40
V.	HSFRMT5.1	DSC-A9	Theory	4	Interior Decoration	60	40
	HSRMP5.1	DSC-A10	Practical	2	Interior Decoration	25	25
	HSFRMT5.2	DSC-A11	Theory	4	Fundamentals of CAD	60	40
	HSRMP5.2	DSC-A12	Practical	2	Fundamentals of CAD	25	25
	HSRMP5.3	DSC- A13	Theory	4	Building materials and components	60	40
	HSFRMT5.3	DSE-E1	Theory	3	Advertising and labelling information	60	40
	HSFRMT5.4	VOC1	Theory	3	Energy conservation	60	40
VI.	HSFRMT6.1	DSC-A14	Theory	4	Hospitality Management	60	40
	HSRMP6.1	DSC-A15	Practical	2	Hospitality Management	25	25
	HSFRMT6.2	DSC-A16	Theory	4	Event Management	60	40
	HSRMP6.2	DSC-A17	Practical	2	Event Management	25	25
	HSRMT6.3	DSC-A18	Theory	4	Human Resource Management	60	40
	HSFRMT6.3	DSE-E2	Theory	3	Product development and packaging	60	40
	HSFRMT6.4	VOC2	Theory	3	Waste Management	60	40



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Home Science - FRM		Semester	Fifth Sem
Course Title	Interior Decoration (Theory)			
Course No.	DSC-A9	DSC	No. of Credits	4+2
Contact hours	52 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Diploma and its equivalence with minimum 45%

Course Outcomes (COs): At the end of the course the student should be able to

- Understand the Basics of Art and Design.
- An insight on elements and Principles of design
- To know the concept of colours and colour application in interiors.
- Understand the types of furniture and their use in interiors.
- Application of lighting in interiors.

Content	52 Hrs
Unit – I Introduction to Art and Design	15 Hrs
Chapter No. 1: Meaning of Art and Design, Types of Design –Structural Design, Decorative Design – Naturalistic Design ,Stylized Design ,Geometric Design, Abstract Design.	4 Hrs
Chapter No. 2: Elements of Art – Line, Form, Texture, Pattern, Colour, Light, Space..	5 Hrs
Chapter No. 3: Principles of Design –Proportion ,Balance , Emphasis ,Rhythm ,Harmony	6 Hrs
Unit – II Colour and Colour Application	18 Hrs
Chapter No. 4: Concept of Colour ,Perception of Colour , Prang Colour Wheel –Primary ,Secondary and Tertiary Colours .Characteristics of Colours –Hue Value and Intensity, Warm and Cool Colours ,Advancing and Receding effect of Colours.	8 Hrs

Chapter No. 5: Colour Schemes –Related Colour Schemes – Monochromatic Colour Scheme, Analogous colour Scheme. Neutral Colour Scheme, Accented Neutral Colour Scheme.	5 Hrs
Chapter No. 6: Contrasting Colour Scheme -Complementary Colour Scheme, Double Complementary Colour Scheme, Split Complementary Colour Scheme, Triad Colour Scheme, Tetrad Colour Scheme, and Poly chromatic Colour Scheme.	5 Hrs
Unit – III Furniture and Lighting	19 Hrs
Chapter No. 7: Meaning of Furniture, Types of Furniture –Based on materials, Based on Style .Furniture Arrangement, Factors to be considered in selecting Furniture.	7 Hrs
Chapter No. 8: Lighting –Terminologies, Sources of Light in Buildings –Natural Light, Artificial Light. Methods of Artificial Lighting in Buildings –General Light, Task Light, Accent Light	6 Hrs
Chapter No. 9: Lighting Fixtures - Types of lighting Fixtures. Types of Light provided by different Lighting Fixtures- Direct, Indirect, Semi Direct, Semi Indirect, Diffused light	4 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Able Understand the Basics of Art and Design		×				×			×			
An insight on Elements and Principles of design		×					×					×
Able to understand the concept of colours and colour application in interiors	×						×			×		
Able to understand the types of furniture and their use in interiors							×	×		×		×
Application of lighting in interiors							×	×	×			×

Pedagogy

Lecture, Demonstration, Group discussion, Field visit.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Interior Decoration (Practical)	Practical Credits	2
Course No.	HSFRMP5.2, DSC –A10	Contact Hours:	52 Hours
Practical Topics - 2 credits		13 - 15 weeks	
Unit 1: Illustrate different type Designs			3
Unit 2: Illustrate Elements of Art and Principle of Design.			3
Unit 3: Illustrate –primary colours, Secondary Colours, Tertiary Colours, Colour Wheel, Characteristics of Colours and Colour Schemes.			4
Unit 4: Draw a Living and Dining Room to Scale and using Furniture Templates Create a furniture Layout.			3
Unit 5: Using Pictures Illustrate Methods of Artificial Lighting, Lighting Fixtures.			3

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Test 1	5
Test 2	5
Project/Record	15
Total	25 marks + 25 marks = 50 marks

References:	
1.	Premavathy Seetharam Praveen Pannu (2019) Interior Design and Decoration, CBS Publishers and Distributors Pvt Ltd Bengaluru.
2.	Steven .B.Webber (2019) “Interior Design Fundamentals “Fairchild Books, India
3.	Athena Calderone, (2020) Live Beautiful, Abrams and Chronical Books New York.
4.	Henry Wilson (2020) –Decoration Interior Design, Timeless Books, India.
5.	Ruth Pretty (2021) Interior Design: 20 readymade schemes for your home, Ward lock Ltd
6.	Nikita Mittal (2021) The Key of Interior Design, Standard Book house Publishers, India

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Home Science - FRM		Semester	Fifth Sem
Course Title	Fundamentals of CAD (Theory)			
Course No.	DSC-A11	DSC	No. of Credits	4+2
Contact hours	52 Hrs		Duration of SEA/Exam	3 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Diploma and its equivalence with minimum 45%

Course Outcomes (COs): At the end of the course the student should be able to

- Understand the Basics tools of Auto CAD and its application in drawings.
- To learn drawing setting and object editing.
- To know the Special Features and its applications.
- Application of layouts and plotting.
- To learn to create layers and draw plans.

Content	52 Hrs
Unit – I Introduction to CAD	18 Hrs
Chapter No. 1: Introduction: Introduction to AutoCAD, importance and application of AutoCAD in interiors. Fundamentals of computers, file menu-saving closing files, importing and exporting files, saving files in different formats.	6 Hrs
Chapter No. 2: Basic tools and Application: undo/redo, matching properties & its application.	6 Hrs
Chapter No. 3: Introduction to object drawing, different types of lines - pline, construction lines, splines, multiline, types of objects, circles and curves arc, polygon, ellipse, donut and its application and use in interiors.	6 Hrs
Unit – II Edit Tools and Application	16 Hrs
Chapter No. 4: Introduction to drawing setting: Types of setting drawing limits units, object selection, drafting, setting, polar tracking, grid and snap, its application advantages and uses.	6 Hrs

Chapter No. 5: Introduction to object editing: types in editing the drawing with different command trim, extend, stretch, erase delete.	6 Hrs
Chapter No. 6: Introduction to viewing, types of viewing – zoom, pan, hatch boundary.	4 Hrs
Unit – III Layer State manager and Plotting	18 Hrs
Chapter No. 7: Introduction to layers: Layer creation and uses in interiors, Shortcut Keys in layer drawings. Line Types and Line weight and introducing colour in layers.	10 Hrs
Chapter No. 8: Layouts and Plotting- Using Layouts, Using Page Setups.	4 Hrs
Chapter No. 9: Layouts and Plotting: Using Viewports, Plotting of drawings	4 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Understand the Basics tools of Auto CAD and its application in drawings	x					x						
To know the Special Features and its applications							×					
Able to understand the concept of colours and colour application in interiors	×						×					
Application of layouts and plotting.							×					
To learn to create layers and draw plans							×					

Pedagogy

Lecture, Demonstration, Group discussion, Field visit.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Fundamentals of CAD (Practical)	Practical Credits	2
Course No.	HSFRMP5.2, DSC –A12	Contact Hours:	52 Hours
Practical Topics - 2 credits		13 - 15 weeks	
Unit 1: Creating new files and saves as with different names, creating objects with types of lines drafting of Doors windows representation of materials.			3
Unit 2: Drawing a floor plan with settings, layers and dimensions ,and to scales'			3
Unit 3: Drawing elevation, cross-sectional view for the floor plan.			4
Unit 4: Generate a design and hatch with appropriate design			3
Unit 5: Prepare at two working drawing sets, one for a residence and one for a commercial building.			3

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Test 1	5
Test 2	5
Project/Record	15
Total	25 marks + 25 marks = 50 marks

References:	
1.	Alavala Chennakesava R (2008), CAD/CAM: Concepts and Applications, Prentice Hall India Learning Private Limited, ISBN-10 : 8120333403, ISBN-13 : 978-8120333406, India
2.	Bernd S Palm (2020), Introduction to AutoCAD 2020: 2D and 3D Design, Rout ledge; 1st edition, ISBN-10 : 0367417391, ISBN-13 : 978-0367417390, India
3.	Jaiprakash Pandey and Yasser Shoukry (2022), Practical Autodesk AutoCAD 2023 and AutoCAD LT 2023: A beginner's guide to 2D drafting and 3D modeling with Autodesk AutoCAD, Packt Publishing Limited; 2nd edition, ISBN-10 : 1801816468, ISBN-13 : 978-1801816465, India.
4.	Shameer S (2021), AutoCAD Exercises for Beginners: Designers Work Book For Practice, Independently Published, ISBN-13 : 979-8599663805, India.
5.	Sandeep Dogra (2021), AutoCAD 2022: A Power Guide for Beginners and Intermediate Users, CAD Artifex Publishers, ISBN-10 : 8195345212, ISBN-13 : 978-8195345212, India

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Home Science - FRM		Semester	Fifth Sem
Course Title	Building Materials and Components (Theory)			
Course No.	DSC-A13	DSC	No. of Credits	4
Contact hours	52 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Diploma and its equivalence with minimum 45%

Course Outcomes (COs): At the end of the course the student should be able to

- To Understand the Basics building materials used in construction.
- An insight into different types of paints
- To know about types of foundation for buildings
- To gain knowledge on wall roof and floor
- To know about openings and other structures in a building.

Content	52 Hrs
Unit – I Building Materials	15 Hrs
Chapter No. 1: Stones and Bricks – General properties, Stone Masonry Types. Bricks: Properties and brick masonry. Cement: Types. Mortar: Types. Concrete: Types.	6 Hrs
Chapter No. 2: Timber: Plywood and related products. Plastic and related products. Glass and related products.	5 Hrs
Chapter No. 3: Paints: Types, Low VOC paints. Ferrous and Non-ferrous metals.	4 Hrs
Unit – II Building Components	18 Hrs
Chapter No. 4: Sub structure: Foundation – Meaning, Purpose and Types of foundations.	5 Hrs

Chapter No. 5: Super structure: Walls: Load bearing – Precast concrete, Retaining, Brick wall, Stone wall, Pre panellised load bearing and metal stud wall. Non-load bearing walls – Hollow concrete blocks, Facade brick wall, Partition wall and Panel wall.	8 Hrs
Chapter No. 6: Roofs: Meaning and function, Types of roofs. Floor: Meaning, function and types of floors.	5 Hrs
Unit – III Openings and other Structures	19 Hrs
Chapter No. 7: Arches and Lintels: Classification – According to shape, materials and number of centres. Lintels: Wood, Stone, Steel, Brick, Reinforced concrete.	7 Hrs
Chapter No. 8: Doors and Windows: Classification of doors – According to materials, and based of operation. Windows – Types of windows based on materials and methods.	7 Hrs
Chapter No. 9: False Ceilings and Staircases: Types of staircases- Straight, Dog legged, Circular, spiral, and continuous staircases. False Ceiling: Types and materials used for false ceiling – Wooden and gypsum board, Plaster of Paris, PVC and decorative sheets.	5 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Able Understand the Basics building materials used in construction.		×				×			×			
An insight into different types of paints		×					×					×
Able to know about types of foundation for building	×						×			×		
Able to gain knowledge on wall roof and floor							×	×		×		×
Able to know about openings and other structures in a building							×	×	×			×

Pedagogy

Lecture, Demonstration, Group discussion, Field visit.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Kumaraswamy and Kameshwara Rao (2017). Building, Planning and Drawing. Charoter Publishing House, Anand. ISBN: 81-85594-74-0
2.	Pratap Rao M. (2019). Interior Design – Principles and Practice. Standard Publishers distributors, New Delhi
3.	Ravi Kumar Sharma (2022), I K International Publishers, ISBN: 9789386768667, India
4.	Srivastava R.D. (2012). School Building Design and Construction. Tata McGraw-Hill Publishing Company limited, New Delhi
5.	Sanjay Mahajan (2014). Building Construction I and II, Satya Prakashan, New Delhi.
6.	Subramanian N (2019), Building Materials, Oxford University Press; First Edition, ISBN-10 : 0199497214, ISBN-13 : 978-0199497218, India.

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Home Science - FRM		Semester	Fifth Sem
Course Title	Advertising and Labelling Information (Theory)			
Course No.	DSE-AE1	DSE	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Diploma and its equivalence with minimum 45%

Course Outcomes (COs): At the end of the course the student should be able to

- Understand the Concept of Advertising and Advertising programme
- To learn about Media profile and Media selection.
- To know the basic concept of Labelling.
- To understand Labelling requirements
- To learn about Characteristics of labelling.

Content	45 Hrs
Unit – I Advertising	12 Hrs
Chapter No. 1: Concept of Advertising -Definition and Importance, Objectives and Features of Advertising.	4 Hrs
Chapter No. 2: Advertising Programme: Creation of advertisement: Head line, Illustrations, Colour, Body copy or text and slogan. Steps in advertising programme: Market, Motive, Media, Message and measurement, Advertising goals.	8 Hrs
Unit – II Role of Media in Advertising	15 Hrs
Chapter No. 3: Media Profile: Types: Print electronic, outdoor media and direct mail with Merits and Demerits.	5 Hrs
Chapter No. 4: Media Selection: Role of media in advertising process. Categories of media selection: Main and secondary media, Criteria in the selection of various media.	10 Hrs

Unit – III Labelling and Labelling Information	18 Hrs
Chapter No. 5: Labelling: Meaning, Importance, Objectives and Functions.	6 Hrs
Chapter No. 6: Labelling Information: Types of Labels: Brand, Informative, Descriptive and Grade labels. Labelling requirements: Characteristics of product labelling, Label format and design.	12 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Able to Understand the Concept of Advertising and Advertising programme.	x					x						
Able to learn about Media profile and Media selection.							×					
Able to know the basic concept of Labelling.	×						×					
Able to understand Labelling requirements.							×					
Able to learn about Characteristics of labelling.							×					

Pedagogy

Lecture, Demonstration, Group discussion, Field visit.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Rajeev Batra, John G Myres, David A Aaker, (2019) Advertising Management, 5 th Edition, Pearson Publishers. New Delhi.
2.	Daniel Starch (2020), Advertising-Its Principles, Practice and Technique, Forgotten Books Publishers.
3.	Dr Ruchi Gupta (2020) Advertising, Scholar Tech Press, India.
4.	Ashutosh Mishra (2021) Labelling and Advertising: Under Legal Metrology Law in India, Bloomsbury India.
5.	R S N Pillai, Bagavathi, (2021) Modern Marketing- Principles and Practices, S Chand Publishers

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Home Science - FRM		Semester	Fifth Sem
Course Title	Energy Conservation (Theory)			
Course No.	HSFRMT5.4	VOC 1	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Diploma and its equivalence with minimum 45%

Course Outcomes (COs): At the end of the course the student should be able to

- Understand the kinds and forms of energy.
- An insight on Sources of energy.
- An insight on Renewable energy sources
- Understand the need and ways of energy conservation
- Application of energy conservation through energy audit.

Content	45 Hrs
Unit – I Energy	12 Hrs
Chapter No. 1: Energy- Kinds – Kinetic and Potential energy, Forms – Light, Heat, Chemical, Mechanical, Electrical, Gravitational and Nuclear energy.	4 Hrs
Chapter No. 2: Classification – Primary, Secondary and intermediate, Commercial and Non-Commercial, Conventional and Non -Conventional, Renewable and Non- renewable. Sources of energy: Fossil fuels – Coal, Petroleum and Natural gas, Hydro, Solar, Bio-energy, Wind, OTEC, Tidal and Wave energy.	8 Hrs
Unit – II Solar Energy	15 Hrs
Chapter No. 3: Solar Energy: Characteristics – Beam, Diffuse and Total Radiation, Application of Solar Energy.	4 Hrs

Chapter No. 4: Solar Devices –Solar Cookers, Solar water heater, Solar lantern and Solar home lighting. Bio energy: Biomass energy, Biogas - Materials used in biogas generation, Classification- Floating and Fixed dome type, merits and Demerits, Energy plantation – Definition, Objectives, Advantages of energy plantation.	10 Hrs
Unit – III Energy Conservation	18 Hrs
Chapter No. 5: Energy Audit: Definition, Importance, Types – Preliminary and Detail energy audit, Steps in energy audit at household level.	8 Hrs
Chapter No. 6: Conservation: Definition, need, importance, Energy conservation at household level.	5 Hrs
Chapter No. 7: Conservation: Carbon foot print, Programmes of MNES and KREDL	5 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Able Understand the kinds and forms of energy		×				×			×			
An insight on Sources of energy		×					×					×
An insight on Renewable energy sources	×						×			×		
Able to understand the need and ways of energy conservation							×	×		×		×
Application energy conservation through energy audit							×	×	×			×

Pedagogy

Lecture, Demonstration, Group discussion, Field visit.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Simantee Sen (2010), Energy Management - An Overview SBS Publishers and Distributors Pvt Ltd, ISBN:9788131412466
2.	Mirjana Radovanovic Golusin (2022). Sustainable Energy Management Planning, Implementation, Control, and Security, 2nd Edition, Elsevier Publishers, ISBN: 9780128210864, India
3.	Godfrey Boyle (2010). Renewable Energy, Oxford University Press, UK
4.	<u>S P Sukhatme</u> and <u>J K Nayak</u> (2017). Solar Energy, 4 th Edition, McGraw Hill Education, New Delhi
5.	G. D. Rai (2019). Non-conventional Sources of Energy, Khanna Publishers, India
6.	Sanjeev Singh and Umesh Rathore (2023). Energy Management, S.K. Kataria & Sons, New Delhi.

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Home Science - FRM		Semester	Sixth Sem
Course Title	Hospitality Management (Theory)			
Course No.	DSC-A14	DSC	No. of Credits	4+2
Contact hours	52 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Diploma and its equivalence with minimum 45%	
Course Outcomes (COs): At the end of the course the student should be able to	
<ul style="list-style-type: none"> • To know the Genesis of hospitality industry. • To learn the functions of the Front Office. • To understand the organization of Housekeeping Department and its practices • To learn about Guest room Management. • To get an insight into room cleaning and Linen management. 	
Content	52 Hrs
Unit – I Introduction to Hospitality Industry	18 Hrs
Chapter No. 1: Introduction: Genesis of hospitality industry, Institutions offering Hospitality services, Hotel grading and career prospects.	6 Hrs
Chapter No. 2: Front Office Management: Organization of front office management, qualities of front office staff, sequence of receptionist task, methods of reservation and cancellation.	6 Hrs
Chapter No. 3: Guest cycle, guest history, accounting for guest-billing and folio, night audit, back office accounting system.	6 Hrs
Unit – II Housekeeping Practices and Guest Room Management	18 Hrs
Chapter No. 4: Housekeeping practices- importance of control desk, responsibilities and functions of housekeeping department. Type of registers and files maintained, safety, first-aid and security procedure, pest control.	7 Hrs

Chapter No. 5: Guest Room Management –Importance, types of guest room, Guest floor rules, and standard contents of a guest room. Cleaning of Guest rooms: Cleaning of guest room, maid chart, cleaning of public areas, guest supplies.	7 Hrs
Chapter No. 6: Guest Room Management – Cleaning of Guest rooms: Cleaning of guest room, maid chart, cleaning of public areas, guest supplies.	4 Hrs
Unit – III Linen Management and Safety	16 Hrs
Chapter No. 7: Linen Management: Types of linen, location of linen room, responsibilities of linen room, Linen hire, linen par stock, linen control.	5 Hrs
Chapter No. 8: Linen Management: Inventory, uniform exchange procedure, functions of uniform room and tailoring room, Guest laundry.	5 Hrs
Chapter No. 9: Safety and Security: Work-environment safety, safety awareness, fire prevention, crime prevention, dealing with emergencies, scanty baggage, lost and found articles	6 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
To know the Genesis of hospitality industry	x					x						
To learn the functions of the Front Office.							x					
To understand the organisation of Housekeeping Department and its practices.	x						x					
To learn about Guest room Management.							x					
To get an insight into room cleaning and Linen management.							x					

Pedagogy

Lecture, Demonstration, Group discussion, Field visit.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Hospitality Management (Practical)	Practical Credits	2
Course No.	HSFRMP6.1, DSC-A15	Contact Hours:	52 Hours
Practical Topics - 2 credits		13 - 15 weeks	
Unit 1: Illustrate different hotel grading systems			3
Unit 2: Illustrate Front office layout in small, Medium and Large Hotel			3
Unit 3: Draw Housekeeping Layout in Small. Medium and large hotel			4
Unit 4: List the Books and Registers maintained by housekeeping Department			3
Unit 5: Functions of Linen room			3

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Test 1	5
Test 2	5
Project/Record	15
Total	25 marks + 25 marks = 50 marks

References:	
1.	Malini Singh, Jaya. B. George, Housekeeping, Operation, design & Management, Jaico Publishing House.
2.	Sudhir Andrews, Text book of Hotel housekeeping Management & Operation, The McGraw Hill Publishing.
3.	Chakravarthi B. K, Hotel Management Theory, Vol. 1 &2, APH Publishing.
4.	David. K. Hayes, Jack D Ninemeier, Hotel operation Management, Pearson Prentice Hall
5.	Yogendra K Sharma, Hotel Management Education and Environment Aspect, Kanishka Publishers
6.	JagmohanNegi, Hotel Management, Himalaya Publishers.
7.	SunithaSrinivasan, Theory and Practices of professional Housekeeping, Anmol Publications Pvt. Ltd.

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Home Science - FRM		Semester	Sixth Sem
Course Title	Event Management (Theory)			
Course No.	DSC-A16	DSC	No. of Credits	4+2
Contact hours	52 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Diploma and its equivalence with minimum 45%

Course Outcomes (COs): At the end of the course the student should be able to

- To understand the meaning of event, need, and purpose.
- To know the Scope of event management as career.
- To learn the principles of an event.
- To learn the marketing strategies of an events.
- To learn about Interpersonal skills for the success of an event.

Content	52 Hrs
Unit – I Introduction to Event Management	18 Hrs
Chapter No. 1: Introduction: Meaning of event, need, and purpose of event. Types of events, event planning.	5 Hrs
Chapter No. 2: Introduction: Key elements of events – event infrastructure, core concept, core people, talent and structure. Concept of markets in events. 5 Cs of events.	6 Hrs
Chapter No. 3: Event Analysis and Principles: Scope of event management as career, Planning, organizing, staffing, leading, coordination and controlling. Budget of events, Event Accounting. Permissions and Licensing for event.	7 Hrs
Unit – II Strategic Market Planning	18 Hrs
Chapter No. 4: Market Planning: Concept of market in event, Setting objectives.	6 Hrs

Chapter No. 5: Market Planning: Developing marketing plans. Problem analysis, environmental and competitive assessment.	5 Hrs
Chapter No. 6: Staging an Event: Choosing an event site, developing the theme, conducting rehearsals, Catering, Budgeting and Account keeping.	7 Hrs
Unit – III Interpersonal skills and Public Relations	16 Hrs
Chapter No. 7: Interpersonal skills: Communication skills – types of communication, and Human resource management.	6 Hrs
Chapter No. 8: Interpersonal skills: Human resource management.	4 Hrs
Chapter No. 9: Public Relations: Importance and limitations, Promotions and media – Printing, Internet, TV, and Radio.	6 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Able to understand the meaning of event, need, and purpose.	x					x						
Able to know the Scope of event management as career.							x					
Able to learn the principles of an event.	x						x					
Able to learn the marketing strategies of events.										x		
Able to learn about Interpersonal skills for the success of an event.							x					

Pedagogy

Lecture, Demonstration, Group discussion, Field visit.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

Course Title:	Event Management (Practical)	Practical Credits	2
Course No.	HSFRMP6.2, DSC-A17	Contact Hours:	52 Hours
Practical Topics - 2 credits		13 - 15 weeks	
Unit 1: Types of events.			3
Unit 2: Permissions and Licences from Government and Local agencies			3
Unit 3: Preparation of an event schedule – Planning, assigning responsibilities and organising.			3
Unit 4: Market planning for an event.			4
Unit 5: Interpersonal skills and Public relations.			3

Assessment

Formative +Summative Assessment = 25+25=50 marks	
Formative Assessment	Weightage in Marks
Test 1	5
Test 2	5
Project/Record	15
Total	25 marks + 25 marks = 50 marks

References:	
1.	Anukrati sharma and Shruti Arora (2018), Event Management and Marketing: Theory, Practical Approaches and Planning, Bharti Publications; 1st, New edition, ISBN-10 : 9386608618, ISBN-13 : 978-9386608611, India.
2.	Deepak Swaminathan (2018), The Art of Building Experiential Events, Notion Press; 1st edition, ISBN-10 : 164249075X , ISBN-13 : 978-1642490756, India.
3.	Hoshi Bhiwandiwala (2017), Event Management, Nirali Prakashan, Educational Publishers, ISBN-10 : 9351648370, ISBN-13 : 978-9351648376, India.
4.	John Beech, Robert Kaspar and Sebastian Kaiser (2019), The Business of Events Management, Pearson Education; First Edition, ISBN-10 : 9353940346, □ ISBN-13 : 978-9353940348, India.
5.	Vineet Gera (2017), Art of Event Management, Gurucool Publishing; second edition, ISBN-10 : 8193098919, □ ISBN-13 : 978-8193098912, India.

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Home Science - FRM		Semester	Sixth Sem
Course Title	Human Resource Management (Theory)			
Course No.	DSC-A18	DSC	No. of Credits	4+2
Contact hours	52 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Diploma and its equivalence with minimum 45%

Course Outcomes (COs): At the end of the course the student should be able to

- To understand the meaning, nature and objectives of Human Resource Management.
- To know the Typical organization setup of HRM.
- To learn the importance of Human Resource planning.
- To learn the process of recruitment, selection and placement
- To learn about Interpersonal skills and the importance of induction and training.

Content	52 Hrs
Unit – I Introduction to Human Resource Management	18 Hrs
Chapter No. 1: Introduction to Human Resource Management: Meaning, Nature, Importance, Objectives and Function, Process of HRM.	5 Hrs
Chapter No. 2: Human Resource Management: Role of HR manager, duties and responsibility, Inter and Intra personal Relationship. Typical organization setup of HRM.	6 Hrs
Chapter No. 3: Human Resource Planning: Meaning and importance, benefits, Factors affecting HRP..	7 Hrs
Unit – II Recruitment, Selection and Placement	18 Hrs
Chapter No. 4: Recruitment: Nature and purpose, Factors governing recruitment- External and Internal factors. Methods of recruitment – Internal and External recruitment.	6 Hrs

Chapter No. 5: Selection and Placement: Nature of selection, Uses of tests in selection. Placement: Meaning and purpose, Problems involved in placement.	5 Hrs
Chapter No. 6: Induction and Training: Meaning, objectives and purpose, Need and benefits of training, Identifying training needs, Methods of training.	7 Hrs
Unit – III Performance appraisal, Compensation, Promotions and Transfers	16 Hrs
Chapter No. 7: Performance appraisal: Meaning and objectives, Methods of Performance appraisal.	6 Hrs
Chapter No. 8: Compensation: Meaning and objectives, Fringe benefits- Provident fund, Gratuity, Medical care, Health Insurance, Recreation.	4 Hrs
Chapter No. 9: Promotions and Transfers: Meaning, Purpose and basics of promotion. Types and reasons for transfer.	6 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Able to Understand the meaning, nature and objectives of Human Resource Management.	×					x						
Able to Know the Typical organization setup of HRM.			×				×					
Able to Learn the importance of Human Resource planning	×						×					
Able to Learn the process of recruitment, selection and placement							×					
Able to Learn about Interpersonal skills and the importance of induction and training.										×		

Pedagogy

Lecture, Demonstration, Group discussion, Field visit.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	10 + 10
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Aswathappa K(2019) Human Resource Management, eighth edition, Tata Mc Graw-Hill Publishing Company Limited, New Delhi
2.	Ivancevich J M (2009), Managing for Performance, Business Publication, New Delhi
3.	Prasad L (2018) Human Resource Management, Sultan Chand and Co, New Delhi.
4.	Rao P Subha (2020) Personal and Human Resource management, Himalaya Publishing House, Mumbai.

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Home Science - FRM		Semester	Sixth Sem
Course Title	Product Development and Packaging (Theory)			
Course No.	DSE-E2	DSE	No. of Credits	3
Contact hours	52 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Diploma and its equivalence with minimum 45%

Course Outcomes (COs): At the end of the course the student should be able to

- To understand Product Development and Media selection
- To know the Special Features and its applications
- To know about product life cycle
- Understand the concept of packaging.
- Learn about Features of packaging, types of packaging design.

Content	45 Hrs
Unit – I Product Development	12 Hrs
Chapter No. 1: Product Development: Meaning, Steps in new product development: Idea generation, screening ideas, business analysis, developing the product and testing the products.	7 Hrs
Chapter No. 2: Product life cycle: Introduction of product, growth, maturity, saturation and decline of the product.	5 Hrs
Unit – II Product and packaging	15 Hrs
Chapter No. 4: Classification of products: Convenience, Shopping, Specialty and Unsought Goods, Importance of product classification.	10 Hrs
Chapter No. 5: Packaging: Concept, importance, Characteristics of good packing, functions of packaging, Factors affecting packaging- Purpose, Nature of product, Distance, Material handling system and Product sensitivity.	5 Hrs

Unit – III Packaging types and Design	18 Hrs
Chapter No. 6: Types of packaging: Types of packaging material, Primary, Secondary and Tertiary packaging. Types of packaging according to materials- paper and carton, film, foam, textile packaging, plastic boxes and containers.	8 Hrs
Chapter No. 7: Packaging Design: Meaning, Features of packaging, elements of packaging design, steps in packaging design process. Green packaging: meaning, importance and benefits.	10 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Able to Understand Product Development and Media selection	×					x						
Able to Know the Special Features and its applications							×					
Able to Know about product life cycle	×						×					
Able to Understand the concept of packaging.							×			x		
Able to Learn about Features of packaging, types of packaging design							×					

Pedagogy

Lecture, Demonstration, Group discussion, Field visit.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Varshney R L and Gupta S L (2000) Marketing Management –An Indian Perspective, Sultan Chand and Sons, New Delhi.
2.	Srinivasa Prakash Regalla (2014) Product Design and manufacturing, Ist Edition, Newage International Ltd.
3.	Bharti Pawan Kumar (2021)Product Development and waste Recycling ,Discovery Publishing House Ltd Mumbai
4.	Christopher A Mattson, Carl Sorensen (2020) Product Development, Springer Publishers.
5.	Sola Somade and Tunji Adegboye, (2021) The essentials of Packaging, I Universe.
6.	Kristine De Maria (2021) The Packaging Development process, CRC press.

Date

Course Coordinator

Subject Committee Chairperson



Government of Karnataka

Model Curriculum

Program Name	B.Sc. Home Science - FRM		Semester	Sixth Sem
Course Title	Waste Management (Theory)			
Course No.	VOC 2	VOC	No. of Credits	3
Contact hours	45 Hrs		Duration of SEA/Exam	2.30 Hours
Formative Assessment Marks	40		Summative Assessment Marks	60

Course Pre-requisite(s): Diploma and its equivalence with minimum 45%

Course Outcomes (COs): At the end of the course the student should be able to

- Understand the different types and classification of waste.
- An insight on municipal solid waste.
- An insight on Disposal of waste
- Understand the need for composting
- Application of waste management.

Content	45 Hrs
Unit – I Waste	12 Hrs
Chapter No. 1: Waste- Definition, Types of waste – Solid, Liquid and Gaseous waste, Solid waste generation. Sources of Municipal solid waste, Characteristics and Composition.	4 Hrs
Chapter No. 2: Classification of waste: Sources –Industrial, Commercial, Domestic and agricultural waste. Types –Biodegradable and Non-biodegradable waste. Characteristics – Hazardous and Non-hazardous waste.	8 Hrs
Unit – II Waste Management	15 Hrs
Chapter No. 3: Waste Management: Definition, Waste hierarchy, 4'R principles, Waste segregation. : Collection of MSW- Types – Community bins, Door to Door, Block and Communal Collection, Transportation, Ways of reducing waste at household level.	5 Hrs

Chapter No. 4: Disposal of solid waste: Methods of disposal of waste – open dump, Sanitary landfills, Incineration, Composting and Vermi composting. Processing of MSW- Recycling and Energy recovery.	10 Hrs
Unit – III Composting and Vermi composting	18 Hrs
Chapter No. 5: Composting: Meaning, Benefits of composting, Composting methods – Aerobic composting-Static pile, Windrow and in- vessel composting, Factors affecting aerobic composting, Merits and Demerits, Anaerobic composting- Bokashi method and Trench method, Merits and Demerits.	9 Hrs
Chapter No. 6: Vermi composting: Meaning,–Types, materials, steps – Selection of place, Container - Small barrel/ drum composter, Large barrel/drum composter, Bedding material, organic waste,Aeration, Moisture, Ph, Earth worm, Covering materials, Harvesting and storing Vermi compost,	9 Hrs

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Able to Understand the types and classification of waste.		×				×			×			
An insight on municipal solid waste.		×					×					×
An insight on disposal of waste.	×						×			×		
Able to understand the need for composting.							×	×		×		×
Application of waste management.							×	×	×			×

Pedagogy

Lecture, Demonstration, Group discussion, Field visit.

Assessment

Formative Assessment + Summative assessment = 40+60=100 marks	
Formative Assessment	Weightage in Marks
Test 1	10
Test 2	10
Assignment + Project	5 + 5
Summative Assessment	60
Total	40 marks + 60 marks = 100 marks

References:	
1.	Amrita Chakraborty (2010). Waste Management – An Overview, SBS Publishers Pvt. Ltd.
2.	Bhatia H.S. (2019). Solid Waste Management with Applications, Misha Books
3.	Himadri Panda (2022). Vermiculture and Vermicompost (Earthworm), Asia Pacific Business Press Inc.
4.	WilliamMervel and Ayesha Dardam (2022). Gardening and Composting, Authors Republic
5.	Herbert Berry (2022). Vermicomposting (Worm Farming), Maria Antonietta Apicella Publishers

Date

Course Coordinator

Subject Committee Chairperson