KURUKSHETRA UNIVERSITY, KURUSKHETRA
('A+' Grade NAAC Accredited)
Department of Home Science

Programme: M.Sc. Home Science (Food, Nutrition and Dietetics)
under CBCS-LOCF Pattern
W.e.f. 2020-21

KURUKSHETRA UNIVERSITY, KURUSKHETRA
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Department of Home Science
M.Sc. Home Science (Food, Nutrition and Dietetics)

INTRODUCTION

The Department of Home Science, Kurukshetra University, Kurukshetra, offers M.Sc. in Food, Nutrition and Dietetics. The aim of the programme is to foster a team of experts who can generate nutrition awareness to promote healthy lifestyle among the masses. The courses in the programme are planed so as to augment the fundamental aptitude of learners in the fields of human nutrition, food service management, public health nutrition and clinical dietetics etc. The curriculum offers a robust theoretic background and experimental learning is also promoted through field trainings and practicals. This programme targets to reinforce the research expertise of learners to allow them to grow into academicians and researchers in the field of food science, nutrition and dietetics.

Program Outcomes (POs) for PG courses of Faculty of Life Sciences

PO1. To acquaint students with recent knowledge and techniques in basic and applied biological sciences.
PO2. To develop understanding of organismal, cellular, biochemical and environmental basis of life.
PO3. To provide insight into ethical implications of biological research for environmental protection and good laboratory practices and bio safety.
PO4. To develop problem solving innovative thinking with robust communication and writing skills in youth with reference to biological,environmental and nutritional sciences.
PO5. To understand application of biotic material in health, medicine, food security for human wellbeing and sustainable development.
PO6. To impart practical and project based vocational training for preparing youth for a career in research and entrepreneurship in fields of life sciences for self-reliance.

Programme Specific Objectives:

The objectives of M.Sc. Food, Nutrition and Dietetics programme are:

- To make the students comprehend the theories of nutritional biochemistry, food science, clinical dietetics and public health nutrition.
- To assist the learners in acquiring the methods of assessment of human nutrition requirements and diet planning.
- To relate the application of concepts of the above-mentioned areas to laboratory settings.
- To comprehend the implementation of clinical nutrition, to communicate the health promotion, food science and food service management.

- To advance knowledge and improve abilities for monitoring, planning and management of public health nutrition programmes executed by the government.
- To gain expertise to carry out methodical investigation in the areas of public health nutrition, food science and clinical nutrition.

Programme Specific Outcomes:

The programme equips students to grow into experts who can work as nutritionists, dieticians and researchers. After completing this programme the learner will be able to:

PSO1. Evaluate nutrition status and design suitable diets.

PSO2. Use the information about nutrition in clinical conditions and health promotion communications.

PSO3. Work in the arena of public health nutrition as program organizers and supervisors.

PSO4. Work as nutrition experts and quality assurance specialists.

PSO5. Run a food service institution.

PSO6. Apply theoretic knowledge and practical exercises for investigation in the arena of public health nutrition, food science and clinical nutrition.

Home Science M.Sc. (Food, Nutrition and Dietetics)

Eligibility (Passed one of the following examinations from this University or any other recognized University)

Candidate who has passed one of the following examinations with any field of specialization, obtaining at least 50% marks in aggregate: B.Sc. (Home Science)/B.Sc. (Home Science) with Honours /B.Sc. Clinical Nutrition and Dietetics/B.Sc. Human Nutrition & Dietetics/B.Sc. Nursing.
OR

Bachelor of Science with Home Science/ Botany/ Zoology/ Genetics/ Biochemistry/ Microbiology/ Biotechnology/ Food Technology/ Food Microbiology/ Food Sc./ Food Processing as one of the main subjects.

Note: A candidate who has passed B.Sc. (Agriculture) or B.A. with Home Science as one of the main subjects or B.A. with any subject combination is not eligible for admission to M.Sc. (HomeScience) course for any field of specialization

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Scheme of Examinations for M.Sc. Home Science (Food, Nutrition and Dietetics) under CBCS-LOCF w.e.f. 2020-21 in Phased Manner for UTD only

Semester-1

Paper Code	Title of Paper	Type of Paper	Hours/ Week	Credits	Marks(Ext+Int)	Total	Duration of exam
FND-101	Advanced Human Nutrition–I	Core	4	4	80+20	100	3
FND-102	Advanced Nutritional Biochemistry-I	Core	4	4	80+20	100	3
FND-103	Food Science-I	Core	4	4	80+20	100	3
FND-104	Food Service Management-I	Core	4	4	80+20	100	3
FND-105	Practical:Advanced Human Nutrition and Advanced Nutritional Biochemistry -I	Core	8	4	80+20	100	3
FND-106	Practical: Food Science and Food Service Management-I	Core	8	4	80+20	100	3
Total				**24**		**600**	

Semester-2

Paper Code	Title of Paper	Type of Paper	Hours/ Week	Credits	Marks (Ext+Int)	Total	Duration of exam
FND-201	Advanced Human Nutrition-II	Core	4	4	80+20	100	3
FND-202	Advanced Nutritional Biochemistry-II	Core	4	4	80+20	100	3
FND-203	Food Science-II	Core	4	4	80+20	100	3
FND-204	Food Service Management-II	Core	4	4	80+20	100	3
FND-205	Seminar	Core	1	1	25	25	1
FND-206	Nutrition for Holistic Health/Any other MOOC Course available on SWAYAM Portal	Open* elective	2	2	40+10	50	3
FND-207	Practical: Advanced Human Nutrition and Advanced Nutritional Biochemistry-II	Core	8	4	80+20	100	3
FND-208	Practical: Food Science and Food Service Management-II	Core	8	4	60+20 +20**	100	3
Total				**27**		**675**	

*will be offered to the students within faculty.
**Viva-voice of the training of one month in Food Processing unit & its report.

Semester-3

Paper Code	Title of Paper	Type of Paper	Hours/ Week	Credits	Marks (Ext+Int)	Total	Duration of exam
FND-301	Clinical Dietetics-I	Core	4	4	80+20	100	3
FND-302	Public Health Nutrition-I	Core	4	4	80+20	100	3
FND-303	Research Methods, Statistics and Computer Applications	Core	4	4	80+20	100	3
FND-304	Food Microbiology	Elective	4	4	80+20	100	3
FND-305	Food Safety & Quality Control						
FND-306	Human Physiology						
FND-307	Nutrition During Life Cycle/Any other MOOC Course available on SWAYAM Portal	Open* elective	2	2	40+10	50	3
FND-308	Seminar	Core	1	1	25	25	1
FND-309	Clinical Dietetics-I	Core	8	4	80+20	100	3
FND-310	Public Health Nutrition-I	Core	8	4	80+20	100	3
Total				**27**		**675**	

*will be offered to the students within faculty.

Semester4

Paper Code	Title of Paper	Type of Paper	Hours/Week	Credits	Marks (Ext+Int)	Total	Duration of exam
FND-401	Clinical Dietetics-II	Core	4	4	80+20	100	3
FND-402	Public Health Nutrition-II	Core	4	4	80+20	100	3
FND-403	Physical Fitness & Sports Nutrition	Core	4	4	80+20	100	3
FND-404	*Dissertation	Elective	4	4	80+20	100	3
FND-405	Food Toxicology						
FND-406	Food Processing and Technology						
FND-407	Clinical Dietetics -II	Core	8	4	60 +20+20**	100	3
FND-408	Public Health Nutrition-II	Core	8	4	80+20	100	3
Total				**24**		**600**	

*Dissertation subject to the condition that the student has obtained 70% or more marks after IInd Semester (M.ScIst year).

** Viva-voice of the training of 45 days in hospitals & its report.

Total Credits =102

Total Marks =2550

M. Sc. (Food, Nutrition& Dietetics) CBCS
Semester -I
Core
Paper -FND-101
AdvancedHuman Nutrition –I

Total Marks: 100
External: 80
Internal: 20
Duration of Exam: 3 hrs
Credit- 4

Note:

- Examiner will set nine questions in all.
- All the questions will carry equal marks.
- Question No.-1 will be compulsory consisting of 5-10 short type questions(havingno internal choice) and spread over the entire syllabus.
- Eight questions, two questions from each unit (I, II, III & IV) will be set.
- The candidates are required to attempt five questions in all. Question No -1 willbe compulsory, remaining four questions will be attempted by selecting onequestion from each unit.

Objectives:

- To familiarize the student about physiological and metabolic role of various nutrients,
- To learn the requirement & interaction of various nutrients.

Course Outcomes:

After successful completion of this course students will be able to know about**:**

FND101 1. Physiological and metabolic role of various nutrients and their interactions in human nutrition.
FND101 2. Understand the basis of human nutritional requirement and recommendations through the life cycle.
FND101 3. Learn the actions of nutrients and their implications.
FND101 4. Familiarize with the recent advances in nutrition.

Unit-I

1. **Carbohydrates:** Types, classification, digestion, absorption andtransport- review. Chemical composition and physiological effect ofdietary fiber, fructo-oligosaccharides and resistance starch. Glycemic indexof foods. Sweeteners- nutritive and non-nutritive. Role of carbohydratesin health and disease, health significance of carbohydrates.

2. **Lipids**: Classification, digestion, absorption, transport – review.Functions of EFA. Role of n-3, n-6 fatty acids in health and disease.Requirements of total fat and fatty acids. Trans fatty acids.Prostaglandins, health significance of lipids.

UNIT- II

3. **Proteins:** Classification, digestion, absorption and transport - review. Proteinquality, methods of evaluating protein quality. Protein and amino acidrequirements. Protein as an energy source. Therapeutic applications of specific amino acids: Branchedchain, glutamine, arginine, homocysteine, cysteine, taurine, health significance of proteins.

4. **Interaction of Nutrition, Immunity &Infection:** Hostdefense mechanism and nutrients essential in the development of immune system. Effect of infection on the nutritional status of an individual, impact of malnutrition on immunity and occurrence of infection, effect of infection on nutritional status.

UNIT III

5. **Vitamins:** Historical background, food sources, absorption and transport,biochemical function, RDA, physiological,pharmacological and therapeutic effects, toxicity and deficiency with respectto the following:

a) Fat solublevitamins: A, D, E & K.
b) Water soluble vitamin: Thiamine, riboflavin, niacin, biotin, pyridoxine, folic acid,pantothenic acid, ascorbic acid, cyanocobalamin, choline, inositol.

UNIT- IV

6. **Minerals:** (Note: For each nutrient sources bioavailability, function, requirements, RDI/ESADDI, deficiency and toxicity, interactions with othernutrients are to be discussed).

a) Macro minerals: calcium, phosphorus, magnesium, sodium, potassium andchloride.
b) Micro minerals: Iron, copper, zinc, manganese, iodine, fluoride.
c) Trace minerals: Selenium, cobalt, chromium, vanadium, silicon, boron,nickel.

Books Recommended:

1. Modern Nutrition in; Health and Disease – Goodhearth, R. S.
2. Recommended dietary allowance for Indian – I.C.M.R., 1980
3. Nutrition and Development- Winick 1973, Univ. of Columbia.
4. Biology of Nutrition – Eclames 1972, Palaniuma Press
5. Foods & Nutrition – Krause 1972, Saunders.
6. Proteins and Human Foods 1970, Lowrie, Avi. Pub. Co.
7. Nut. &Physical;fitness-BoGert L.J.
8. Principles of Nut. – Wilson, L.D. and Fisher. K.H.
9. Standardised diets for Hospital – National Nut. Advisory Committee
10. Nutrition in Health & Disease – Cooper, L. Barher, L. Mitehell, HandRynheraen.
11. Nutrition A comprehensive: Beaton and McHanery, Treatise Vol-1, II, & III.
12. Human Nut. &Dietectics- Davidson S., Passmore, R., Brook, J.E. andTruswell.
13. Foods and Nut. - Rankin, W. Munn. Hildath E.N.
14. Iron deficiency – Holiberth, H.C. Harvorth, vannotti, N.Y.
15. Trace Elements in Human and Animal Nut. – Underwood, N.Y.
16. Essays in Biochemistry – Samul Graff, Tandon Book Dept. Sec. –16
17. Diabetes Mellitus- The Williams and Wilkinas Co., U.S.A.

Attainment of Course Outcomes (COs):

Sr. No.	Course Outcomes	Methods for attainment of COs
1.	Physiological and metabolic role of various nutrients and their interactions in human nutrition.	Power Point Presentations and discussions
2.	Understand the basis of human nutritional requirement and recommendations through the life cycle.	Power Point Presentations and discussions
3.	Learn the actions of nutrients and their implications.	Power Point Presentations and discussions
4.	Familiarize with the recent advances in nutrition.	Power Point Presentations and discussions

CO-PO matrix for the course FND101 (Advanced Human Nutrition-I)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
FND101.1	3	3	3	3	3	3
FND101.2	3	3	2	3	3	3
FND101.3	2	3	3	3	3	3
FND101.4	3	3	3	3	3	3
Average	2.75	3	2.75	3	3	3

CO-PSO matrix for the course FND101 (Advanced Human Nutrition-I)

COs#	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
FND101.1	3	3	3	3	3	3
FND101.2	3	3	3	2	3	3
FND101.3	3	2	3	3	3	3
FND101.4	3	3	3	3	3	3
Average	3	2.75	3	2.75	3	3

M.Sc. (Food, Nutrition & Dietetics) CBCS
Semester –I
Core
Paper - FND-102
Advanced Nutritional Biochemistry –I

Max. Marks: 100
Theory Exam: 80
Int. Assessment: 20
Duration of Exam: 3 hrs
Credit- 4

Note:

- Examiner will set nine questions in all.
- All the questions will carry equal marks.
- Question No.-1 will be compulsory consisting of 5-10 short type questions (having no internal choice) and spread over the entire syllabus
- Eight questions, two questions from each unit (I, II, III & IV) will be set.
- The candidates are required to attempt five questions in all. Question No -1 will be compulsory, remaining four questions will be attempted by selecting one question from each unit.

Objectives: -

- To facilitate the learners about fundamentals of nutritional biochemistry and its other aspects arming them with knowledge for better understanding of food, nutrition and dietetics.

Course Outcomes:

This course will enable the students to:

FND102 1. Expand the nutritional biochemistry knowledge acquired at the undergraduate level.
FND102 2. Understand the fundamentals of energetics of biochemical reactions.
FND102 3. Comprehend the different aspects of carbohydrates, lipids, proteins, enzymes and nucleic acids as biomolecules.
FND102 4. Know the mechanism of action of hormones.
FND102 5. Learn about basic idea about nutrigenomics and nutraceuticals.

Unit-I

1. **PRINCIPALS OF BIOENERGETICS**- Concept of free energy, Oxidation and reduction, concept of cell, high energy compounds (ATP, PEP, and Phosphogens), role of ATP/ADP cycle in transfer of high energy phosphates, concept of coupled reactions, equilibrium & non- equilibrium reactions, committed steps, caloric homeostasis & futile cycles.

2. **CARBOHYDRATES**- Definition, classification. Monosaccharides: Classification, occurrence, structure, stereoisomerism (DL and RS systems),optical isomerism and chemical reactions of the functional groups, derivatives of monosaccharides- deoxy sugars and amino sugars. Disaccharidesof nutritional importance (sucrose, maltose, lactose), Polysaccharides-Homopolysaccharides- starch, glycogen, cellulose, Heteropolysaccharides- glycoprotein, proteoglycans, mucopolysaccharides, pectins.

Unit-II

3. **LIPIDS**- Definition, classification. Structure, properties and functions of fatty acids (including essential fatty acids) Trans fatty acids, prostaglandins,acylglycerols, phospholipids, sphingolipids, glycolipids, steroids (including role of cholesterol). Chemical composition and biological role of lipoproteins, Characterization of fats- saponification, iodine, acid, acetyl and peroxide value.

4. **AMINO ACIDS AND PROTEINS**- Common structural features, classification based on the nature of R group, non-protein amino acids, essential amino acids and titration curves of monoamino-monocarboxilic, monoamino-dicarboxilic and diamino-monocarboxilic acids. Peptide bond, biological role of proteins, classification of proteins, levels of protein structure- primary, secondary (super secondary elements in brief), tertiary and quaternary structure, forces stabilizing protein structure, denaturation of proteins.

Unit-III

5. **ENZYMOLOZY**- General Characteristics, classification and nomenclature, coenzyme, cofactor, prosthetic group, concept of holoenzyme and apoenzyme, units of enzyme activity, Multienzyme systems and multifunctional enzymes with specific examples and significance,Enzyme kinetics- Michaelis-Menten and Lineweaver-Burk equation for monosubstrate reactions, *Km, kcat* (turnover number), bisubstrate reactions.

6. **MECHANISM OF ACTION OF HORMONES-**Classes of hormones, signal transduction and intracellular messengers, chemistry and functions of thyroid, parathyroid, adrenal, pancreatic, gastric and reproductive hormones; hypothalamus and pituitary, hormone replacement therapy

Unit-IV

7. **NUCLEIC ACIDS**- Nitrogenous bases, experimental proof of DNA and RNA as genetic material, Chargaff's rules, double helical model of DNA (A, B and Z), DNA packaging, types of RNA and their functions.

8. **Nutrigenomics and Nutraceuticals.**

Books Recommended

1. Harper's Biochemistry- Robert K. Murray
2. Textbook of Biochemistry- West and Todd
3. Bio chemical aspect of Nutrition – S.X.C.- Okoyo
4. Food Chemistry – O.R. Fennema
5. Biochemistry– Voet and Voet
6. Principles of Biochemistry – A.L. Lehniger
7. Outlines of Biochemistry- E. E. Conn
8. Practical Clinical Biochemistry- Harold Varley

Attainment of Course Outcomes (COs):

Sr. No.	Course Outcomes	Methods for attainment of COs
1.	Expand the nutritional biochemistry knowledge acquired at the undergraduate level.	Class room lectures and discussions
2.	Understand the fundamentals of energetics of biochemical reactions.	PPT presentations and discussions
3.	Comprehend the different aspects of carbohydrates, lipids, proteins, enzymes and nucleic acids as biomolecules.	Class room lectures and power point presentations
4.	Know the mechanism of action of hormones.	PPT presentations and discussions
5.	Learn about basic idea about nutrigenomics and nutraceuticals.	Class room lectures and discussions

CO-PO matrix for the course FND102 (Advanced Nutritional Biochemistry-I)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
FND102.1	3	2	3	3	3	3
FND102.2	3	3	3	2	3	3
FND102.3	3	3	3	3	3	3
FND102.4	3	3	3	3	3	3
FND102.5	3	3	3	3	3	3
Average	3	2.8	3	2.8	3	3

CO-PSO matrix for the course FND102 (Advanced Nutritional Biochemistry-I)

COs#	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
FND102.1	3	3	3	3	3	3
FND102.2	2	3	3	2	3	3
FND102.3	3	3	3	3	3	3
FND102.4	3	3	3	3	3	3
FND102.5	3	3	3	3	3	3
Average	2.8	3	3	2.8	3	3

M.Sc. (Food, Nutrition & Dietetics) CBCS
Semester –I
Core
Paper –FND-103
Food Science-I

Total Marks: 100
External: 80
Internal: 20
Duration of Exam: 3 hrs
Credit- 4

NOTE:

- Examiner will set nine questions in all.
- All the questions will carry equal marks.
- Question No.-1 will be compulsory consisting of 5-10 short type questions (having no internal choice) and spread over the entire syllabus.
- Eight questions, two questions from each unit (I, II, III & IV) will be set.
- The candidates are required to attempt five questions in all. Question No -1 will be compulsory, remaining four questions will be attempted by selecting one question from each unit.

Objectives:

- To learn about the basic concepts and composition of food.
- To provide the knowledge about the principles of food science in various food preparations.

Course Outcomes:

After successful completion of this course students will be able to:

FND103 1. Familiarize with changes occurring in various foodstuffs as a result of processing and cooking.

FND103 2. Use the theoretical knowledge of food science in day-to-day life.

Unit-I

1. **Relation of cookery to colloidal chemistry:** Definition of colloidal system, altering degree of dispersion, Hydrophilic and Hydrophobic colloids, stabilization of colloidal systems, properties i.e. surface tension, adsorption, foam formation, rheology, gel, formation and emulsions.

2. **Fermentation process, merits and demerits, fortification process, merits, types and nutritional importance of fortified foods.**

Unit-II

3. **Starch Cookery:**

a) Sources, types and uses of starch, gelatinization.
b) Flours- Composition and baking qualities. Batters and dough (chapatti and poori), Leavening agents: biologically and chemically leavened products.
c) Cooking and parboiling of rice.

4. **Sugar Cookery:**Introduction, types, uses and properties of crystallization of sugar, stages of sugar cookery, physical and chemical properties of sugar, sweetness index, types of honey and its products, fondant, fudge, caramel and brittles.

Unit- III

5. **Fats and Oils:** Sources, structure and type of fats, physical & chemical properties and cooking uses of fats and oils. Absorption of fat. Changes during storage, fat deterioration and antioxidants.
6. **Nuts and Oilseeds:** Composition, classification, nutritional value, Oil extraction and by-products, uses and storage of oil seeds, toxins in nuts and oil seeds.

Unit –IV

7. **Beverages:** Classification and types of beverages. Some major beverages such as coffee, tea, cocoa, malted drinks.

8. **Spices and Condiments**: Composition, functions of spices, nutritional importance of Indian spices and condiments.

9. **Sensory Evaluation:** Sensory characteristics of food: appearance, colour, flavor, odour, taste, mouth feel and texture, objective and subjective evaluation.

BOOKS RECOMMENDED:

1. Experimental Cookery: Low Bells.
2. Food Selection and Preparation: Sweetman, M.D.
3. Handbook of Food Preparation: A.N. Hime Ec. Asso.
4. Our Food: Swaminathan, M, and Bhagiam, R.K.
5. Experimental Foods: Swaminathan
6. Food Science and Application: L Paul, C. Pauling.
7. Food Science: Mudami, S.R. &Rao, S.M. 1994, Wiley Eastern Ltd. New Delhi
8. Food Facts & Principles: Maney N. S. &ShudarshanSwamy M. 1966. New Age International Pub. N. Delhi

Attainment of Course Outcomes (COs):

Sr. No.	Course Outcomes	Methods for attainment of COs
1.	Familiarize with changes occurring in various foodstuffs as a result of processing and cooking.	Power Point Presentations, discussions and demonstration
2.	Use the theoretical knowledge of food science in day to day life.	Power Point Presentations, discussions and demonstration

CO-PO matrix for the course FND103 (Food Science-I)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
FND103.1	3	3	3	3	3	2
FND103.2	3	3	2	3	3	3
Average	3	3	2.5	3	3	2.5

CO-PSO matrix for the course FND103 (Food Science-I)

COs#	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
FND103.1	2	3	3	3	3	3
FND103.2	3	3	3	3	2	3
Average	2.5	3	3	3	2.5	3

M.Sc. (Food, Nutrition & Dietetics) CBCS
Semester –I
Core
Paper –FND-104
Food Service Management –I

Total Marks: 100
External: 80
Internal: 20
Duration of Exam: 3 hrs
Credit- 4

NOTE:

- Examiner will set nine questions in all.
- All the questions will carry equal marks.
- Question No.-1 will be compulsory consisting of 5-10 short type questions (having no internal choice) and spread over the entire syllabus.
- Eight questions, two questions from each unit (I, II, III & IV) will be set.
- The candidates are required to attempt five questions in all. Question No -1 will be compulsory, remaining four questions will be attempted by selecting one question from each unit.

Objectives:

- To equip the students about basic abilities and necessary expertise in key areas of institutional food administration.
- To impart necessary expertise to function as a food service manager.

Course Outcomes:

After successful completion of this course students will be able to:

FND104 1.Know about field level experience in Institutional Food Administration.
FND104 2. Equip with basic grounding in research techniques.

Unit-I

1. **Introduction to Food Service Systems:**
   - History and development of the food service industry
   - Broad categories of catering services; Commercial and Institutional
   - Characteristics of the various types of food service units – Canteens, Hostels, Hospitals and Restaurants.

2. **Principles of Institutional food Management**
   - Role and functions of management in food service.
   - Management tools: Tangible, Intangible tools

UNIT- II

3. **Personnel Management: Objectives, importance and need.**
   - Principles of manpower planning
   - Recruitment, selection and orientation
   - Training and motivation, theories and approaches of employees

4. **Legal Aspects**
   - National and International Labour Laws
   - Welfare policies and schemes for employees
   - Offences and Penalties

Unit –III

5. **Space Organization**
   - Planning and design consideration for kitchen and service area
   - Space requirements for kitchen and service areas
   -Types of kitchens
   -Layout of service areas

6. **Equipment**
   -Types of equipment
   - Selection of equipment
   - Maintenance of equipment

7. **Time and Energy Management**
   - Importance of time and energy management
   - Types of energy – Human and fuel energy
   - Measures for utilization and conservation

UNIT- IV

8. **Management of Finance**
   - Sources of finance
   - Budgets

9. **Cost Accounting /Analysis**
   - Objectives of food cost control
   - Food cost analysis
   - Labour cost analysis
   - Cost control techniques

BOOKS RECOMMENDED:

1. Food Service in Institutions – Wood
2. Food Service in Institutions – West, Bessin, Brooks.
3. Handbook of Food Preparations – A.M. Home Economics Association.
4. Food Selection and Preparations – Sweetman, M.D., 4, Mackeller.
5. School Lunch Room Service – Oliver B. Watson.
6. Food service Planning: layout Equipment – Lender H. Ketshevar and Marget E. Terrel.
7. Human Nutrition and Dietetics – Davidson and Passmore

Attainment of Course Outcomes (COs):

Sr. No.	Course Outcomes	Methods for attainment of Cos
1.	Know about field level experience in Institutional Food Administration.	Discussions and demonstration
2.	Equip with basic grounding in research techniques.	Power Point Presentations, discussions and demonstration

CO-PO matrix for the course FND104 (Food Service Management-I)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
FND104.1	3	3	3	3	3	3
FND104.2	2	3	3	2	3	3
Average	2.5	3	3	2.5	3	3

CO-PSO matrix for the course FND104 (Food Service Management-I)

COs#	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
FND104.1	3	2	3	2	3	3
FND104.2	3	3	3	3	3	3
Average	3	2.5	3	2.5	3	3

M.Sc. (Food, Nutrition & Dietetics) CBCS
Semester –I
Core
Paper- FND-105(Practical)
Advanced Human Nutrition and Advanced Nutritional Biochemistry-I

Total Marks: 100
External: 80
Internal: 20
Duration of Exam: 3 hrs
Credit- 4

Course Objectives: -

- To acquaint the students about various body parameters.
- To facilitate the students aboutcolorimetry and enzyme assays.

Course Outcomes:

This course will enable the students to:

FND105 1.Measure blood pressure, BMI and body fat.
FND105 2.Acquire skills to prepare standard solution.
FND105 3.Estimate biomolecules and minerals.
FND105 4.Assess the enzyme activity.

a) Advanced Human Nutrition-I

1. Measurement of Blood Pressure.
2. Measurement of Body fat.
3. Calculation of BMI (Body Mass Index).
4. **E**stimation of glucose in blood.
5. Estimation of cholesterol in blood.

b) Advanced Nutritional Biochemistry-I

1. Preparation of standard solutions.
2. Preparation of buffers using buffer tables and verify pH.
3. Isolation and estimation of casein from milk.
4. Estimation of ascorbic acid in foods.
5. Estimation of calcium, phosphorous and Iron in various food stuffs.
6. Extraction and quantitative estimation of total sugars and reducing sugars from food stuffs.
7. Estimation of proteins in food stuffs.
8. Estimation of activity of alkaline phosphatase in Moong bean seeds.
9. Effect of pH, concentration, time and temperature of incubation on enzyme activity.
10. Estimation of Moisture, ash in the food stuffs.

Attainment of Course Outcomes (COs):

Sr. No.	Course Outcomes	Methods for attainment of Cos
1.	Measure blood pressure, BMI and body fat.	Demonstration and discussions
2.	Acquire skills to prepare standard solution.	Demonstration and discussions
3.	Estimate biomolecules and minerals.	Demonstration and discussions
4.	Assess the enzyme activity.	Demonstration and discussions

CO-PO matrix for the course FND105 (Advanced Human Nutrition and Advanced Nutritional Biochemistry-I)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
FND105.1	3	3	3	3	3	3
FND105.2	3	3	3	3	3	3
FND105.3	3	3	3	3	3	3
FND105.4	3	3	3	3	3	3
Average	3	3	3	3	3	3

CO-PSO matrix for the course FND105 (Advanced Human Nutrition and Advanced Nutritional Biochemistry-I)

COs#	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
FND105.1	3	3	3	3	3	3
FND105.2	3	3	3	3	3	3
FND105.3	3	3	3	3	3	3
FND105.4	3	3	3	3	3	3
Average	3	3	3	3	3	3

M.Sc. (Food, Nutrition & Dietetics) CBCS
Semester –I
Core

Paper- FND-106(Practical)

Food Science and Food Service Management –I

Total Marks: 100
External: 80
Internal: 20
Duration of Exam: 3hrs
Credit:4

Course Objectives:

- To perform physical and nutritional analysis of commonly consumed raw and processed food.
- To familiarize students with the techniques and methods used for food processing.
- To equip the students about the work knowledge of different types of food service units such as commercial and noncommercial ones.
- To impart the knowledge about planning and cost analysis of different types of menus.

Course Outcomes:

This course will enable the students to:

FND106 1.Learn the chemistry of food groups.
FND106 2.Understand the physical and chemical structure of foods and their components.
FND106 3.Understand the basic principles and applications of food preservation and food processing.
FND106 4.Develop skills for quantity cooking.
FND106 5.Analyze the cost of menu in food service organization.
FND106 6.Standardize the recipes for more than 100 persons.

a) **Food Science-I**

1. Effect of solutes on boiling point of water.
2. Effect of types of water on characteristics of cooked vegetables, pulses and cereals.
3. **Leavened Products:** Fermentation-Use of microorganisms (lactic acid, yeast), steam as an agent, egg as an agent, chemical agents.
4. **Starches, Vegetable Gums and Cereals:** Dextrinization, gelatinization, thickening power. Factors affecting gels. Gluten formation and factors affecting gluten formation.
5. **Sugar and Jaggery Cookery:** solubility and sizes of sugar, stages of sugar cookery, caramelization, factors affecting crystal formation.
6. **Fats and Oils:** Flash point, melting point and smoking point.Role of fats and oils in cookery as: shortening agent, frying medium. Factors affecting fat absorption Permanent and semi-permanent emulsions.
7. **Beverages:** Development & factors affecting quality of beverages.

b) Food Service Management-I

1. Market survey of Food service equipment.
2. Evaluation of Food Service units-2 Commercial & non-commercial.
3. Layout analysis of Kitchens of different food service Institutions.
4. Analysis of Food safety and Hygiene.
5. Planning menus for quantity.
   -Banquet
   -Outdoor catering
   -Packed meals
   -restaurant
6. Cost analysis of menus in
   • College canteen
   • Hostel mess
   • Hospitals (private, charitable, govt.)
7. Standardising recipes for 100 servings/ persons

Attainment of Course Outcomes (COs):

Sr. No.	Course Outcomes	Methods for attainment of Cos
1.	Learn the chemistry of food groups.	Demonstration and discussions
2.	Understand the physical and chemical structure of foods and their components.	Demonstration and discussions
3.	Understand the basic principles and applications of food preservation and food processing.	Demonstration and discussions
4.	Develop skills for quantity cooking.	Demonstration and discussions
5.	Analyze the cost of menu in food service organization.	Demonstration and discussions
6.	Standardize the recipes for more than 100 persons.	Demonstration and discussions

CO-PO matrix for the course FND106 (Food Science and Food Service Management –I)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
FND106.1	3	3	3	3	3	3
FND106.2	3	3	3	2	3	3
FND106.3	3	3	3	3	3	3
FND106.4	3	3	3	3	3	3
FND106.5	3	3	3	3	3	3
FND106.6	2	3	3	3	3	3
Average	2.83	3	3	2.83	3	3

CO-PSO matrix for the course FND106 (Food Science and Food Service Management –I)

COs#	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
FND106.1	3	3	3	3	3	3
FND106.2	3	3	3	3	3	3
FND106.3	3	2	3	3	3	3
FND106.4	3	3	3	3	3	3
FND106.5	3	3	3	3	3	3
FND106.6	3	3	3	3	3	3
Average	3	2.83	3	3	3	3

M.Sc. (Food, Nutrition & Dietetics) CBCS
Semester –II
Core
Paper -FND-201
Advanced Human Nutrition –II

Total Marks: 100
External: 80
Internal: 20
Duration of Exam: 3 hrs
Credit- 4

Note:

- Examiner will set nine questions in all.
- All the questions will carry equal marks.
- Question No.-1 will be compulsory consisting of 5-10 short type questions (having no internal choice) and spread over the entire syllabus.
- Eight questions, two questions from each unit (I, II, III & IV) will be set.
- The candidates are required to attempt five questions in all. Question No -1 will be compulsory, remaining four questions will be attempted by selecting one question from each unit.

Objectives:

- To equip the students about action of nutrients and their implications in the body.
- To know about the recent advances in nutrition.

Course Outcomes:

After successful completion of this course students will be able to know about:
FND201 1. Energy content of food.
FND201 2. Determination of energy metabolism.
FND201 3. Body composition, physiology of hunger and various eating disorders.
FND201 4. Interrelationship between drugs and various nutrients.

UNIT-I

1. Energy: Energy content of food stuffs –unit and determination of gross and physiological energy value of food. Energy expenditure: factors affecting, components of energy requirement, BMR and factors affecting it. Determination of energy metabolism of humans by direct and indirect method. Thermogenesis, Specific Dynamic Action (SDA)

UNIT-II

2. Water: Water intake and loss, exchange of water in body, effect of low and excess intake of water. Electrolyte (Sodium, Potassium and Chloride): Functions, dietary sources, absorption, transport and excretion, water intake and effect of electrolytes on water balance, obligatory water loss, effects of dehydration.

UNIT- III

3. Body Composition: General body composition, determination of body water, acid-base balance, extra cellular water, cell mass and body fat. Change in body composition throughout life, Body mass index: formula to calculate BMI, WHR- waist hip ratio.

UNIT- IV

4. Physiology of hunger, Causes of Eating disorders, types of eating disorders, behavioral and clinical signs, prevention and treatment of Bulimia, Anorexia Nervosa, Bing eating disorder..

5. Drug-nutrient interaction: Drug use and nutritional status, effects of drugs on food intake, nutrient absorption and metabolism, effects of food on drug absorption, distribution and metabolism.

Books Recommended:

1. Modern Nutrition in Health and Disease – Goodhearth, R. S.
2. Recommended dietary allowance for Indian – I.C.M.R., 1980
3. Nutrition and Development- Winick 1973, Univ. of Calombia.
4. Biology of Nutrition – Eclames 1972, Palaniuma Press
5. Foods & Nutrition – Krause 1972, Saunders.
6. Proteins and Human Foods 1970, Lowrie, Avi. Pub. Co.
7. Nut. & Physical fitness-BoGert L.J.
8. Principles of Nut. – Wilson, L.D. and Fisher. K.H.
9. Standardised diets for Hospital – National Nut. Advisory Committee
10. Nutrition in Health & Disease – Cooper, L. Barher, L. Mitehell, Hand Rynheraen.
11. Nutrition A comprehensive: Beaton and McHanery, Treatise Vol-1, II, & III.

Attainment of Course Outcomes (COs):

Sr. No.	Course Outcomes	Methods for attainment of Cos
1.	Energy content of food.	Through class room lectures, power point presentations
2.	Determination of energy metabolism.	Through class room lectures, power point presentations
3.	Body composition, physiology of hunger and various eating disorders.	Through class room lectures, power point presentations
4.	Interrelationship between drugs and various nutrients.	Through class room lectures, power point presentations

CO-PO matrix for the course FND201 (Advanced Human Nutrition-II)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
FND201.1	3	3	3	3	3	3
FND201.2	3	3	2	3	3	3
FND201.3	3	3	3	3	3	3
FND201.4	3	3	3	3	3	3
Average	3	3	2.75	3	3	3

CO-PSO matrix for the course FND201 (Advanced Huamn Nutrition-II)

COs#	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
FND201.1	3	3	3	3	2	3
FND201.2	3	3	3	3	3	3
FND201.3	3	3	3	3	3	3
FND201.4	3	3	3	3	3	3
Average	3	3	3	3	2.75	3

M.Sc. (Food, Nutrition & Dietetics) CBCS
Semester –II
Core
Paper - FND-202
Advanced Nutritional Biochemistry –II

Max. Marks: 100
Theory Exam: 80
Int. Assessment: 20
Duration of Exam: 3 hrs
Credit- 4

Note:

- Examiner will set nine questions in all.
- All the questions will carry equal marks.
- Question No.-1 will be compulsory consisting of 5-10 short type questions (having no internal choice) and spread over the entire syllabus.
- Eight questions, two questions from each unit (I, II, III & IV) will be set.
- The candidates are required to attempt five questions in all. Question No -1 will be compulsory, remaining four questions will be attempted by selecting one question from each unit.

Objectives:

- To understand the interrelationship between different nutrients and their metabolism.
- To provide basic knowledge about molecular processes and biophysical techniques.
- To prepare students for research and field jobs.

Course Outcomes:
This course will enable the students to:
FND202 1. Acquire an insight into interrelationships among various metabolic pathways.
FND202 2. Understand the mechanisms adopted by the human body for regulation of metabolic pathways.
FND202 3. Comprehend the different aspects of molecular biology.
FND202 4. Know about the mechanism of metabolism of xenobiotics.
FND202 5. Become proficient for specialization in nutrition.

Unit-I

1. **METABOLISM OF CARBOHYDRATES*-** Review of glycolysis, fate of pyruvate: alcoholic and homolactic fermentation,Pasteur effect, Cori cycle, Pyruvate dehydrogenase complex and its regulation; Reactions, regulation and amphibolic nature of TCA Cycle; Anaplerotic reactions, Hexose monophosphate shunt, Biosynthesis of lactose and sucrose, glycogenesis, glycogenolysis, gluconeogenesis, glyoxalate cycle. Regulation of blood glucose level.

2. **AMINO ACID METABOLISM*-** Transamination, deamination and decarboxylation reactions; Role of glutamine in ammonia transport; Glucose-Alanine Cycle, urea cycle, amino acids as biosynthetic precursors- biosynthesis of heme, biologically active amines and glutathione.

Unit-II

3. **LIPID METABOLISM*-** Beta-oxidation of saturated and unsaturated fatty acids (including brief account of minor pathways of fatty acid oxidation, de novo synthesis of fatty acids, biosynthesis and breakdown of cholesterol, triacylglycerols, Phospholipids, ketone body formation and their utilization, Formation of prostaglandins, prostacyclins, thromboxanes and leukotrienes from arachidonic acid.

4. **BIOLOGICAL OXIDATION*-** Electron transport chain (ETC): components, operation and inhibitors of electron transport chain, oxidative phosphorylation and its mechanism, P/O and P/H ratio, uncouplers.

Unit-III

5. **NUCLEOTIDE METABOLISM AND MOLECULAR BIOLOGY -** Biosynthesis and breakdown of purines and pyrimidines, DNA replication, transcription, translation (prokaryotes & eukaryotes),regulation of gene expression (Prokaryotes), mutagenesis and DNA repair, recombinant DNA technology and genetically modified foods, nutritional regulation of gene expression.

6. **DETOXIFICATION-** Metabolism of xenobiotics.

Unit- IV

7. **ENZYMOLOGY-** Mechanism of enzyme action (acid base catalysis, covalent catalysis, metal ion catalysis, electrostatic catalysis, proximity and orientation effect, preferential binding of the transition state complex, strain and distortion theory) Enzyme inhibition – irreversible(non-competitive, uncompetitive), reversible(competitive), feedback and product inhibition, regulation of enzyme activity by covalent modification, allosteric modification, isoenzymes, Ribozyme and Abzyme, applications of enzymes in medicine and food industry

8. **BIOPHYSICAL TECHNIQUES-** Chromatography- Column, Thin layer, Paper, Ion exchange, Affinity, Molecular exclusion, GLC and HPLC. Electrophoresis- cellulose acetate and gel electrophoresis, isoelectric focusing. Spectrophotometry- Bear Lambert's Law, determination and application of extinction coefficient. Centrifugation- sedimentation velocity and analytical methods, ultracentrifugation. Immunochemical Methods – RIA, ELISA. Uses of Isotopes in biochemistry.

***Regulation of metabolic pathways should be discussed along with.**

Books Recommended:

1. Harper's Biochemistry- Robert K. Murray
2. Textbook of Biochemistry- West and Todd
3. Biochemistry – Voet and Voct
4. Principles of Biochemistry – A.L. Lehniger
5. Outlines of Biochemistry- E. E. Conn
6. Biochemistry- UshaSatyanarayan

ttainment of Course Outcomes (COs):

Sr. No.	Course Outcomes	Methods for attainment of Cos
1.	Acquire an insight into interrelationships among various metabolic pathways.	Through class room lectures, group discussions and power point presentations
2.	Understand the mechanisms adopted by the human body for regulation of metabolic pathways.	Through class room lectures, group discussions and power point presentations
3.	Comprehend the different aspects of molecular biology.	Through class room lectures, group discussions and power point presentations
4.	Know about the mechanism of metabolism of xenobiotics.	Through class room lectures, group discussions and power point presentations
5.	Become proficient for specialization in nutrition.	Through class room lectures, group discussions and power point presentations

CO-PO matrix for the course FND202 (Advanced Nutritional Biochemistry-II)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
FND202.1	3	3	3	3	3	3
FND202.2	3	2	3	3	3	3
FND202.3	3	3	3	3	3	3
FND202.4	3	3	3	3	3	3
FND202.5	3	3	3	3	3	2
Average	3	2.8	3	3	3	2.8

CO-PSO matrix for the course FND202 (Advanced Nutritional Biochemistry-II)

COs#	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
FND202.1	3	3	3	3	3	3
FND202.2	3	2	3	3	3	3
FND202.3	3	3	3	3	3	3
FND202.4	3	3	3	3	3	3
FND202.5	3	3	3	3	3	2
Average	3	2.8	3	3	3	2.8

M.Sc. (Food, Nutrition & Dietetics) CBCS
Semester –II
Core
Paper - FND-203
Food Science-II

Total Marks: 100
External: 80
Internal: 20
Duration of Exam: 3 hrs
Credit- 4

NOTE:

- Examiner will set nine questions in all.
- All the questions will carry equal marks.
- Question No.-1 will be compulsory consisting of 5-10 short type questions(having no internal choice) and spread over the entire syllabus.
- Eight questions, two questions from each unit (I, II, III & IV) will be set.
- The candidates are required to attempt five questions in all. Question No -1 will be compulsory, remaining four questions will be attempted by selecting one question from each unit.

Objectives:

- To know about the composition of various foods.
- To learn about the significance of Food Science in the Food industry.

Course Outcomes:

After successful completion of this course the student will able to:

FND203 1. Describe the composition, types, impact of various processing techniques on different food groups as well as their byproducts.

Unit-I

1. **Vegetables and Fruits:** Composition, classification of fruits and vegetables, pigments and acids in vegetables and fruits, browning reaction. Pectic substances: Characteristics, uses, changes during ripening, methods of artificial ripening, testing of pectin, factors affecting jelly formation, loss of nutrients while cooking vegetables and it's solutions.

Unit-II

2. **Grams and Dhals**: Composition, methods of processing and cooking, Effect of processing such as roasting, parching, soaking, germination and fermentation. Toxins in pulses.

Unit –III

3. **Milk and Milk products**: Composition and components of milk. Milk types. Coagulation of milk protein. Setting of curds, different types of cheese, non-enzymatic browning.
   Dairy products: Cultured milk, Yogurt, Butter, Whey, Concentrated and dried products, frozen desserts, dairy product substitutes.

Unit -IV

4. **Eggs:** Structure, composition and selection. Changes during storage and spoilage. Coagulation of eggs protein: proteins in egg white and yolk, egg fat. Egg types. Eggs cooked in shells, poached eggs, and omelets, units of egg quality, egg products: types and advantages.
5. **Meat:** Structure, constituents and types of meat, meat protein, post-mortem changes, ageing of meat, curing and smoking, meat analogues: types and characteristics, tenderness and juiciness.

6. **Fish and sea food:** Types and composition, Storage, selection, spoilage and preservation, byproducts and newer products of fish, fish cookery.

BOOKS RECOMMENDED:

1. Experimental Cookery: Low Bells.
2. Food Selection and Preparation: Sweetman, M.D.
3. Handbook of Food Preparation: A.N. Hime Ec. Asso.
4. Our Food: Swaminathan, M,.andBhagiam, R.K.
5. Experimental Foods: Swaminathan
6. Food Science and Application: L Paul, C. Pauling.
7. Food Science: Mudami, S.R. &Rao, S.M. 1994, Wiley Eastern Ltd. New Delhi
8. Food Facts & Principles: Maney N. S. &ShudarshanSwamy M. 1966. New Age International Pub. N. Delhi

Attainment of Course Outcomes (COs):

Sr. No.	Course Outcomes	Methods for attainment of Cos
1.	Describe the composition, types, impact of various processing techniques on different food groups as well as their byproducts.	Through power point presentations, class room lectures and group discussions

CO-PO matrix for the course FND203 (Food Science-II)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
FND203.1	3	2	3	3	3	2
Average	3	2	3	3	3	2

CO-PSO matrix for the course FND203 (Food Science-II)

COs#	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
FND203.1	3	3	2	3	3	3
Average	3	3	2	3	3	3

M.Sc. (Food, Nutrition & Dietetics) CBCS
Semester –II
Core
Paper - FND-204
Food Service Management-II

Total Marks: 100
External: 80
Internal: 20
Duration of Exam: 3 hrs
Credit- 4

NOTE:

- Examiner will set nine questions in all.
- All the questions will carry equal marks.
- Question No.-1 will be compulsory consisting of 5-10 short type questions (having no internal choice) and spread over the entire syllabus.
- Eight questions, two questions from each unit (I, II, III & IV) will be set.
- The candidates are required to attempt five questions in all. Question No -1 will be compulsory, remaining four questions will be attempted by selecting one question from each unit.

Objectives:

- To impart knowledge about the concept of large-scale cooking techniques.
- To equip students about strategies for pricing, sales and marketing of food products.

Course Outcomes:

After doing this course the students will be able to:
FND204 1. Equip basic abilities and necessary expertise to start their own food unit leading to entrepreneurship.

Unit-I

1. **Menu Planning**

-Types of menus
- Objectives of menu planning
- Considerations in menu planning
- Steps in Menu planning
- Planning menus for canteens, cafeterias, boarding school, hostel mess and old age homes

2. **Food Service**

- Principles, objectives and scope of foof service mamagement.
-Styles of food service in restaurants
-Food service in hospitals
-Food service in institutions

Unit-II

3. **Food management**

-Purchasing: principles, purchasing process and methods
-Receiving: receiving process delivery methods and procedure
- Issuing process

4. Food Storage

-Layout of stores
-Storage procedure
-Inventory management
-Store records

UNIT-III

5. Food Production Management

-Food production process
-Large quantity cooking techniques
-Holding food

6. Marketing and sales management

- Marketing strategies
- Sales analysis
-Market promotion

UNIT –IV

7. Safety

-General safety rules
-Types of accidents
-Accident prevention
-Review of first aid
- Safety tips for employees
- Kitchen equipment safety.

8. Hygiene, Sanitation and food standards

- Principles of food sanitation, safety and hygiene
- Sources of food contamination
-Food handling practices
-Good manufacturing practices (GMP)
-Good hygiene practices (GHP)
- Food standards
-Waste disposal

BOOKS RECOMMENDED:

1. Food Service in Institutions – Wood
2. Food Service in Institutions – West, Bessin, Brooks.
3. Handbook of Food Preparations – A.M. Home Economics Association.
4. Food Selection and Preparations – Sweetman, M.D., 4, Mackeller.
5. School Lunch Room Service – Oliver B. Watson.
6. Food service Planning: layout Equipment – Lender H. Ketshevar and Marget E. Terrel.
7. Human Nutrition and Dietetics – Davidson and Passmore

Attainment of Course Outcomes (COs):

Sr. No.	Course Outcomes	Methods for attainment of Cos
1.	Equip basic abilities and necessary expertise to start their own food unit leading to entrepreneurship.	Through power point presentations, class room lectures and demonstration

CO-PO matrix for the course FND204 (Food Service Management-II)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
FND204.1	3	3	2	3	3	3
Average	3	3	2	3	3	3

CO-PSO matrix for the course FND204 (Food Service Management-II)

COs#	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
FND204.1	3	3	3	2	3	3
Average	3	3	3	2	3	3

M.Sc. (Foods, Nutrition & Dietetics) CBCS
Semester –II
Open Elective
Paper - FND-206
Nutrition for Holistic Health

Total Marks: 50
External: 40
Internal: 10
Duration of Exam: 3 hrs
Credit- 2

Note:

- Examiner will set nine questions in all.
- All the questions will carry equal marks.
- Question No.-1 will be compulsory consisting of 5-10 short type questions (having no internal choice) and spread over the entire syllabus.
- Eight questions, two questions from each unit (I, II, III & IV) will be set.
- The candidates are required to attempt five questions in all. Question No -1 will be compulsory, remaining four questions will be attempted by selecting one question from each unit.

Objectives:

- To provide basic knowledge regarding food, nutrients & different techniques of cooking.

Course Outcomes:
After successful completion of this course students will be able to:
FND206 1. Familiarize with the basic food group system.
FND206 2. Importance of different nutrients in maintaining good health.

Unit –I

1. **Food:** Functions of food & classification.
2. **Essential food constituents**: Carbohydrates, Protein, Fats.

Unit –II

3. **Food source**: Functions, daily allowances, deficiency and excess intake of followings:

-**Vitamins:** A, D, E, K, B1, B2, B3, C, B12, Folic acid.
-**Minerals**: Calcium, Iron, Iodine, Sodium, Potassiu**m.**
-Enzymes: Definition, importance and factors affecting enzyme activity.

Unit –III

4. **Fiber:** Role of dietary fiber in human nutrition.

5. **Methods of enhancing nutritive value of food stuff**.

-Importance of enhancing nutritive value of food stuffs.
-Method of enhancing nutritive value of food stuffs, sprouting, fermentation, fortification and supplementation.

Unit-IV

6. **Water:** Function of water in the body.
7. **Principles and methods of cooking**: Advantages of cooking of the food. Effect of cooking on different nutrients:

-Moist heat -Boiling, stewing, steaming
-Dry heat -Roasting, grilling, baking
-Frying -Shallow and deep
-Radiation -Solar and microwave

Attainment of Course Outcomes (COs):

Sr. No.	Course Outcomes	Methods for attainment of Cos
1.	Familiarize with the basic food group system.	Through class room lectures and PPTs
2.	Importance of different nutrients in maintaining good health.	Through class room lectures and PPTs

CO-PO matrix for the course FND206 (Nutrition for Holistic Health)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
FND206.1	3	3	3	3	3	2
FND206.2	3	2	3	3	3	3
Average	3	2.5	3	3	3	2.5

CO-PSO matrix for the course FND206 (Nutrition for Holistic Health)

COs#	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
FND206.1	3	2	3	3	3	3
FND206.2	3	3	3	3	2	3
Average	3	2.5	3	3	2.5	3

M.Sc. (Food, Nutrition & Dietetics) CBCS
Semester –II
Core
Paper- FND-207(Practical)
Advanced Human Nutrition and Advanced Nutritional Biochemistry-II

Max. Marks: 100
Theory Exam: 80
Int. Assessment: 20
Duration of Exam: 3hrs
Credit- 4

Course objectives:

- To understand the principles of various analytical techniques available for nutrition research.
- To familiarize with the applications of the above techniques.

Course Outcomes:
This course will enable the students to:
FND207 1. Analyze different parameters of blood/ serum.
FND207 2. Assess food intake of individuals.
FND207 3. Calculate the amount of sodium and potassium in various foods/ drinks.
FND207 4. Apply the biophysical techniques for estimation of amino acids and proteins.

a) AdvancedHuman Nutrition-II

1. Determination of iodine value of given fat sample.
2. Estimation of haemoglobinand RBC.
3. Identification of Blood groups.
4. Assessment of food intake.
5. Anthropometric Measurements for Children and Adults.

b) Advanced Nutritional Biochemistry-II

1. **Calcium:** Estimation of calcium in serum.
2. **Phosphorus:** Estimation of inorganic phosphorus in serum.
3. **Protein**: Estimation of albumin, globulin and albumin/globulin ratio in serum.
4. **Enzyme assay:** Estimation of activity of serum alkaline phosphatase and transaminase.
5. **Urea and Creatinine:** Estimation of urea and creatinine in serum.
6. **Minerals:** Determination of Sodium & Potassium of food /drinks through Flame Photometer.
7. Separation of amino acids by paper chromatography, TLC.
8. Separation of proteins by gel electrophoresis.

Attainment of Course Outcomes (COs):

Sr. No.	Course Outcomes	Methods for attainment of Cos
1.	Analyze different parameters of blood/ serum.	Through demonstration and presentation
2.	Assess food intake of individuals.	Through demonstration and presentation
3.	Calculate the amount of sodium and potassium in various foods/ drinks.	Through demonstration and presentation
4.	Apply the biophysical techniques for estimation of amino acids and proteins.	Through demonstration and presentation

CO-PO matrix for the course FND207 (Advanced Human Nutrition and Advanced Nutritional Biochemistry-II)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
FND207.1	3	2	3	3	3	3
FND207.2	3	3	3	3	2	3
FND207.3	3	3	3	3	3	3
FND207.4	3	3	3	3	3	3
Average	3	2.75	3	3	2.75	3

CO-PSO matrix for the course FND207 (Advanced Human Nutrition and Advanced Nutritional Biochemistry-II)

COs#	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
FND207.1	3	3	3	3	3	3
FND207.2	3	3	2	3	2	3
FND207.3	3	3	3	3	3	3
FND207.4	3	3	3	3	3	3
Average	3	3	2.75	3	2.75	3

M.Sc. (Food, Nutrition & Dietetics) CBCS
Semester –II
Core
Paper- FND-208 (Practical)
Food Science and Food Service Management -II

Max. Marks: 100
Theory Exam: 60
Int. Assessment: 20+20
Duration of Exam: 3hrs
Credit- 4

Course Objectives:

- To develop an understanding of various food processing techniques and methods.
- To gain knowledge and experience about food processing by working in various food industries during internship.
- To equip the students about planning a menu, standardization of recipe and running a cafeteria on large scale.

Course Outcomes:

This course will enable the students to:
FND208 1. Learn about processing of different food products, their shelf life and processing techniques.
FND208 2. Understand the sensory evaluation of foods and its application.
FND208 3. Learn about processing, quality control and packaging of different food products through one month internship in food processing industries.
FND208 4. Develop understanding about concept of food service management.
FND208 5. Develop skills in planning different menus according to the different types of food service organizations.
FND208 6. Understand rules and regulations related to hygiene and sanitation for food service units.

a) Food Science-II

1. **Fruits and Vegetables:** Pigments: Effects of cooking. Effect of various cooking processes on different characteristics of vegetables. Prevention of enzymatic browning.
2. **Pulses:** Effect of various cooking and processing methods on pulses & their products.
3. **Jams and Jellies:** pectin content of fruits, role of acid, pectin and sugar in jam and jelly formation. Use of gums as emulsifiers/stabilizers.
4. **Milk and Milk Products:** Scalding, denaturation. Effect of acid, salt, alkali, sugar, heat, enzymes, polyphenols on milk. Khoa, curd, paneer, cheese (ripened and unripened).
5. **Egg:** Structure, assessing egg quality. Use of egg in cookery: - Emulsions, air incorporation, thickening, binding, gelling. Method of egg cookery and effect of heat. Egg white foams and factors affecting foams.
6. **Meat and Poultry:** Method affecting tenderness of meat, effect of various methods of cooking and ingredients on colour, volume, texture, flavor, aroma and water holding capacity.
7. **Fish and Sea Food:** Effect of different cooking methods on various fish and seafoods.
8. **Gelatin:** Gelation, gel strength and factors affecting gelation. Ability to foam.

b) Food Service Management-II

(To be evaluated internally on the basis of regular Practical Classes)

In plant training in Cafeteria – Running cafeteria based on the recipes standardized in Ist semester.

Attainment of Course Outcomes (Cos)

Sr. No.	Course Outcomes	Methods for attainment of COs
1.	Learn about processing of different food products, their shelf life and processing techniques.	Through demonstration and hands-on training
2.	Understand the sensory evaluation of foods and its application.	Through demonstration and hands-on training
3.	Learn about processing, quality control and packaging of different food products through one month internship in food processing industries.	Through demonstration and hands-on training
4.	Develop understanding about concept of food service management.	Through demonstration and hands-on training
5.	Develop skills in planning different menus according to the different types of food service organizations.	Through demonstration and hands-on training
6.	Understand rules and regulations related to hygiene and sanitation for food service units.	Through demonstration and hands-on training

CO-PO matrix for the course FND208 (Food Science and Food Service Management –II)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
FND208.1	2	3	3	3	3	3
FND208.2	3	3	3	3	3	3
FND208.3	3	3	3	3	3	3
FND208.4	3	3	3	3	3	3
FND208.5	3	3	3	3	2	3
FND208.6	3	3	3	3	3	3
Average	2.83	3	3	3	2.83	3

CO-PSO matrix for the course FND208 (Food Science and Food Service Management –II)

COs#	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
FND208.1	2	3	3	3	3	3
FND208.2	3	3	3	3	3	3
FND208.3	3	3	3	3	3	3
FND208.4	3	3	3	3	3	3
FND208.5	3	3	3	3	3	3
FND208.6	3	3	3	3	3	2
Average	2.83	3	3	3	3	2.83

KURUKSHETRA UNIVERSITY, KURUSKHETRA
('A+' Grade NAAC Accredited)
Department of Home Science

Programme: M.Sc. Home Science (Human Development)
under CBCS-LOCF Pattern
W.e.f. 2020-21

KURUKSHETRA UNIVERSITY, KURUKSHETRA
('A+' Grade NAAC Accredited)
Department of Home Science
M.Sc. Home Science (Human Development)

INTRODUCTION

The Department of Home Science, Kurukshetra University, Kurukshetra, offers M.Sc. in Human Development. Human Development is a comprehensive field of study which integrates areas of human development dealing with a variety of arena related to it. The study defines the progress of Human Development happening in the areas of Biology, Humanity, detailing of Human Development Index and Development Psychology.

The program defines Human Development as an important aspect which both directly and indirectly affects the growth of an economy. Based on the development of human needs from psychological to physical level deems the grounds for the progress of a country. Laying more weightage to this aspect, the program trains to imbibe in candidates the skills of leadership, communication and carrying out management related tasks.

Program Outcomes for PG courses of Faculty of Life Sciences

1. To acquaint students with recent knowledge and techniques in basic and applied biological sciences.
2. To develop understanding of organismal, cellular, biochemical and environmental basis of life
3. To provide insight into ethical implications of biological research for environmental protection and good laboratory practices and bio safety.
4. To develop problem solving innovative thinking with robust communication and writing skills in youth with reference to biological,environmental and nutritional sciences.
5. To understand application of biotic material in health, medicine, food security for human wellbeing and sustainable development.
6. To impart practical and project based vocational training for preparing youth for a career in research and entrepreneurship in fields of life sciences for self-reliance.

Programme Specific Objectives:

The objectives of M.Sc. Human Development programme are:

- To enable students to describe the typical development of individuals from conception to late adulthood, as well as divergent development route that my occur in response to a range of bio-psychological issues.

- To develop effective skills in counselling and provide intervention by learning to deals deal with personal and family issues through scientific measures like psychological tests, case study approach, research methodologies and practical sessions on family counselling and family therapy.
- To analyze and evaluate major theoretical frameworks that explains individual development through infancy to aging in the social context of family, community, culture and larger environment.
- To enable the understanding and develop skills to establish Entrepreneurial setups and Human Resource Development centres.
- To understand the rights and developmental needs of special children.

Program Specific Outcomes:
The programme equips the students to grow into experts who can work as counsellors, PO's, CDPO's, ECCE workers, researchers etc. After completing this programme the learner will be able to:

PSO1: Students will come to know about the various domains of development from conception to death of Life Span development.

PSO2: Students will gain insight about the various methods and techniques available for the study and assessment of behaviour and personality in Human Development.

PSO3: Students will become competent in the fields of ECCE training, elementary education and different Play Way techniques for imparting knowledge to children.

PSO4: Students will come to know about various Human Rights, child rights, gender equality, various cultural, political, civic, international rights and discriminations.

PSO5: Students will acquire knowledge about specific groups, their needs, problems, rights and various counselling and therapeutic procedures needed for handling them.

PSO6: Students will become sensitized about women empowerment, gender biasness, domestic and workplace harassment, discrimination against women in different areas of life. Their legal status and acts.

Home Science M.Sc. (Human Development)

Eligibility (Passed one of the following examinations from this University/ any other recognized University)

Candidate who has passed one of the following examinations with any field of specialization, obtaining at least 50% marks in aggregate; B.Sc. (Home Science)/ B.Sc. (Home Science) with Honours.

OR
B.Sc. in Psychology/Clinical Psychology with 50% marks in aggregate.

Note: A candidate who has passed B.Sc. (Agriculture) or B.A. with Home Science as one of the main subjects or B.A. with any subject combination is not eligible for admission to M.Sc. (Home Science) course for any field of specialization.

Kurukshetra University Kurukshetra
Department of Home Science
Scheme of Examinations for M.Sc. Home Science (Human Development)
under CBCS-LOCF
w.e.f. 2020-21 in Phased Manner for UTD only

Semester-1

Paper Code	Title of Paper	Type of Paper	Hours/ Week	Credits	Marks (Ext+Int)	Total	Duration of exam
HD-101	Theories of Human Development, Psychology and Behaviour	Core	4	4	80+20	100	3
HD -102	Methods and Techniques of Assessment in Human Development	Core	4	4	80+20	100	3
HD-103	Early Childhood Development: Care and Education	Core	4	4	80+20	100	3
HD -104	Cross-Cultural Perspectives in Family Studies	Core		4	80+20	100	3
HD -105	Practical- Methods and Techniques of Assessment in Human Development	Core	8	4	80+20	100	3
HD -106	Practical - Early Childhood Development: Care and Education	Core	8	4	70+10*+20	100	3
Total				24		600	

*Viva-voice of the training of 15 days in different Early Childhood Education/Day Care Centre.

Semester-2

Paper Code	Title of Paper	Type of Paper	Hours/ Week	Credits	Marks (Ext+Int)	Total	Duration of exam
HD -201	Fundamentals of Human Development	Core	4	4	80+20	100	3
HD -202	Adolescence and Adulthood: Development, Psychology and Challenges	Core	4	4	80+20	100	3
HD -203	Management, Policies and Programmes for Women and Children	Core	4	4	80+20	100	3
HD -204	Population and Family: Dynamics, Psychology and Welfare	Core	4	4	80+20	100	3
HD -205	Seminar	Core	1	1	25	25	1
HD -206	Marriage and Family Dynamics	Open***** elective	2	2	40+10	50	3
HD -207	Practical- Adolescent and Adulthood: Development Psychology and Challenges	Core	8	4	80+20	100	3
HD -208	Practical- Management, Policies and Programmes for Women and Children	Core	8	4	60+20* +20**	100	3
Total				27		675	

*will be offered to the students within faculty.

** Viva-voice of the training of one month in an NGO/Hospital/Social Welfare Department and its report.

Kurukshetra University Kurukshetra
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Scheme of Examinations for M.Sc. Home Science (Human Development)
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Semester-3

Paper Code	Title of Paper	Type of Paper	Hours/Week	Credits	Marks (Ext+Int)	Total	Duration of exam
HD -301	Child and Family: Guidance, Counselling	Core	4	4	80+20	100	3
HD -302	Advances in life Span Development and Gerontology	Core	4	4	80+20	100	3
HD -303	Research Methods, Statistics and Computer Applications	Core	4	4	80+20	100	3
HD -304	*Women Studies	Elective	4	4	80+20	100	3
HD -305	Guiding young Childs:Growth Behaviour and Development						
HD-306	Communication Technologies						
HD-307	HIV/AIDS counselling						
HD -308	Seminar	Core	1	1	25	25	1
HD-309	Family Support Therapy	Open* Elective	2	2	40+10	50	3
HD -310	Practical- Child and Family: Guidance, Counselling	Core	8	4	80+20	100	3
HD -311	Practical- Advances in Life Span Development and Gerontology	Core	8	4	80+20	100	3
Total				27		675	

*will be offered to the students within faculty.

Semester-4

Paper Code	Title of Paper	Type of Paper	Hours/Week	Credits	Marks (Ext+Int)	Total	Duration of exam
HD - 401	Developmental Disabilities and Mental Health	Core	4	4	80+20	100	3
HD - 402	Parent and Community Education	Core	4	4	80+20	100	3
HD - 403	Social Psychology and Development of Self	Core	4	4	80+20	100	3
HD - 404	*Dissertation	Elective	4	4	100	100	3
HD- 405	Child and Human Rights				80+20		
HD- 406	Current Concerns in Women Study						
HD- 407	Human Resource Development						
HD - 408	Practical- Developmental Disabilities and Mental Health	Core	8	4	60+20**+20	100	3
HD - 409	Practical- Parent and Community Education	Core	8	4	80+20	100	3
Total				24		600	

*****Dissertation subject to the condition that the student has obtained 70% or more marks after IInd Semester (M.Sc. Ist year).

**Viva-voice of the training of one month in an NGO/Hospital/Social Welfare Department and its report.

Total Credits=102

Total Marks=2550

M.Sc. (Human Development) CBCS
Semester -I
Core
Paper -HD-101
TheoriesofHuman DevelopmentPsychology andBehaviour

Total Marks: 100
External: 80
Internal: 20
Duration of Exam: 3 hrs
Credits: 4

Note:

- Examiner will set nine questions in all
- All the questions will carry equal marks
- Question No.-1 will be compulsory consisting of 5-10 short type questions (having no internal choice) and spread over the entire syllabus
- Eight questions, two questions from each unit (I, II, III & IV) will be set.
- The candidates are required to attempt five questions in all. Question No -1 will be compulsory, remaining four questions will be attempted by selecting one question from each unit.

Objectives:

- To understand the need for theory in Human Development.
- To see theories in context.
- To examine the historical perspectives in the evolution of theory.
- To understand the practical applications of a theory.
- To discuss various theories of Human Development.

Learning Outcomes: This course will acquaint the students with the various theories of Human Development & their cross-cultural relevance and applicability.

Course Outcomes for HD101

COs# After the completion of this course the students will be able to:

HD101.1 Understand the historical and philosophical, biological basis, traditions and theories of human development.

HD101.2 Comprehend the task of knowledge, construction of theories with reference to human development and childhood studies.

HD101.3 Appreciate and analyze the different theories of development.

HD101.4 Develop skills for critical appraisal and construction of theories of human development.

Unit –I

Meaning &Significance of Theories of Human Development.

1.Experimental Psychology:

-Nature, Historical background-Contributions of Weber, Fechner, Wundt, Galton.

2.Freud'sPsychoanalytic Theory:
-Freudian Theory-Cross Cultural relevance, CurrentStatus.

Unit-II

3. Neo-Freudians-Alfred Adler, Carl Gustav Jung, Eric Erickson-Cross Cultural relevance, Current status.

4. Learning Theory: Pavlov, Watson, Skinner- Cross-Cultural relevance and Current Status.

5. Cognitive Development Theory: Piaget's Theory- Cross- Cultural relevance and Current Status.

Unit-III

6. Moral Development Theory: Kohlberg'sTheory- Cross- Cultural relevance and Current Status.

7. SocialLearning and Social Cognition Theories: Bandura's Theory,Cross-Cultural relevance and Current Status.

8. Field Theory: Levin's Life Space-basic concepts and contributions, Tolman's Purposive Behaviourism –basic concepts and contributions.

Unit-IV

9.Theories of the Self: Vygotsky's Socio-CulturalPerspective, Roger'sSelf Theory, Myers Briggs Type Indicator, Mead's and Maslow's Theory of Self Actualisation.

10.Ecological Theory-UrieBronfenbrenner.

11.Humanistic Psychology and Developmental Theory.

12. Language Theory- Chomsky's Theory of language development.

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1. Aylward, G. (1994). Practitioner's guide to developmental andpsychological testing. New York: Plenum Press.
2. Blaxter, L., Hughes, C. and Tight, M. (1999). How to Research. NewDelhi: Viva Books.
3. Hayes, N. (ed). (1997). Doing Qualitative Analysis in Psychology.Hove: Psychology Press.
4. Smith, J.A., Harre, R., and Van Langenhove, L. (1995). RethinkingPsychology. London: Sage.
5. Yin, R. (1994). Case study research: Design and methods (2nd ed.) Beverly Hills, CA: Sage Publication.
6. Nagpal, R. and Sell, H. (1985). Subjective well-being inventory. New Delhi: World Health Organization

CO-PO matrix for the course HD-101 (Theories of Human Development Psychology and Behaviour)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
HD101.1	3	2	2	3	1	2
HD101.2	3	3	3	2	3	3
HD101.3	3	3	3	3	3	2
HD101.4	2	3	3	3	2	3
Average	2.75	2.75	2.75	2.75	2.25	2.5

CO-PSO matrix for the course HD-101 (Theories of Human Development Psychology and Behaviour)

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
HD101.1	3	3	2	2	2	1
HD101.2	3	3	2	3	3	2
HD101.3	3	3	3	1	3	2
HD101.4	2	3	3	3	3	3
Average	2.75	3	2.5	2.25	2.75	2

M. Sc. (Human Development) CBCS

Semester –ICore
Paper -HD-102
Methods and Techniques of Assessment in Human Development

Total Marks: 100
External: 80
Internal: 20
Duration of Exam: 3 hrs
Credits: 4

Note:

- Examiner will set nine questions in all
- All the questions will carry equal marks
- Question No.-1 will be compulsory consisting of 5-10 short type questions (having no internal choice) and spread over the entire syllabus
- Eight questions, two questions from each unit (I, II, III & IV) will be set.
- The candidates are required to attempt five questions in all. Question No -1 will be compulsory, remaining four questions will be attempted by selecting one question from each unit.

Objectives:

- To study different methods and techniques of understanding Human Development.
- To apply various methods studied in a practical context.

Learning Outcomes: It will enable the students to learn about the various techniques for studying Human beings and also assessment of their various personality characteristics.

Course Outcomes for HD102

COs#After the completion of this course the students will be able to do:

HD102.1 Understand the historical and philosophical, biological basis, traditions and theories of human development.

HD102.2 Comprehend the task of knowledge, construction of theories with reference to human development and childhood studies.

HD102.3Appreciate and analyze the different theories of development.

HD102.4Develop skills for critical appraisal and construction of theories of human development.

Unit- I

History & Uses of Psychological tests.

1. **Understanding the Self:** Administration, Scoring and Evaluation of any test about the Self, e.g., TAT, WISC.
2. **Concept of Measurement and Evaluation:** Scales, Norms and Transformation-Types, Usage &Relevance.

Unit-II

3.Observation Method: Concept, types, advantages and limitations, application, Considerations for conducting observations.

Theoretical perspectives; Use of checklists, establishing reliability in observation record, Report writing and Evaluation.

4. Interview Method: Types, advantages and limitations, applications, preparation of Interview Schedule/guide, general considerations for conducting Interviews. Theoretical perspectives; Development of different types of interview protocols. Analysis and coding of interview data.

5.Questionnaire Method: Characteristics, types, advantages and limitations, uses, considerations for construction and administration of questionnaire. Theoretical perspectives;Development of different typesof questionnaire Protocols.Analysis and codingof questionnaire data.

Unit-III

6.Case Study Method: Characteristic features, advantages and disadvantages. Theoretical perspectives; Development of different types ofcase study protocols. Analysis and coding of case study data.

7. Anthropometry: Body landmark, Instruments, Height, Weight and other Measurements of a child's nutritional status.

8. Reliability and Validity: Definition, Types & Usage.

Unit-IV

9. Sociometry Techniques: Definition, Types, Usage and theirrelevance in Studying Human relationships.

10. Some Psychometric Methods:

- Techniques of evaluation with special reference to (Intelligence, Personality, Interests and Aptitude.

-Scales for children's assessment- Seguin Form Board, Pandey's Cognitivedevelopment test, Coloured Progressive Matrices.

-The Wechsler's battery of tests,

-Children's Apperception Test,

- Draw- A- Man Test
- Bhatia's Battery

-Raven's Progressive Matrices,

-Adjustment Inventories,

-Rotter's Incomplete Sentence Completion Test,

-Sex Role Inventory,

-Death Anxiety Inventory.

References

1. Aylward, G. (1994). Practitioner's guide to developmental and psychological testing. New York: Plenum Press.
2. Blaxter, L., Hughes, C. and Tight, M. (1999). How to Research. NewDelhi: Viva Books.
3. Hayes, N. (ed). (1997). Doing Qualitative Analysis in Psychology.Hove: PsychologyPress.
4. Smith, J.A., Harre, R., and van Langenhove, L. (1995). RethinkingPsychology. London: Sage.
5. Yin, R. (1994). Case study research: Design and methods (2nd ed.)Beverly Hills, CA: Sage Publication.
6. Nagpal, R. and Sell, H. (1985). Subjective well-being inventory. New Delhi: World Health Organization

CO-PO matrix for the course HD-102 (Methods and Techniques of Assessment in Human Development)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
HD102.1	3	3	2	3	1	2
HD102.2	3	3	3	2	3	3
HD102.3	3	3	3	3	3	2
HD102.4	2	3	3	3	2	3
Average	2.75	2.75	2.75	2.75	2.25	2.5

CO-PSO matrix for the course HD-102 (Methods and Techniques of Assessment in Human Development)

	PSO1	PSO2	PSO3 1	PSO4	PSO5	PSO6
HD102.1	3	3	2	2	2	1
HD102.2	3	3	2	3	3	2
HD102.3	3	3	3	1	3	2
HD102.4	2	3	3	3	3	3
Average	2.75	3	2.5	2.25	2.75	2

M. Sc. (Human Development) CBCS

Semester –ICore
Paper -HD-103
Early Childhood Development: Care and Education

Total Marks: 100
External: 80
Internal: 20
Duration of Exam: 3 hrs
Credits: 4

Note:

- Examiner will set nine questions in all
- All the questions will carry equal marks
- Question No.-1 will be compulsory consisting of 5-10 short type questions (having no internal choice) and spread over the entire syllabus
- Eight questions, two questions from each unit (I, II, III & IV) will be set.
- The candidates are required to attempt five questions in all. Question No -1 will be compulsory, remaining four questions will be attempted by selecting

Objectives:

- To gain knowledge and insight regarding principles of early childhood care and education.
- To develop skills and techniques to plan activities in ECCE centres of different types.
- To conduct activities in early childhood care and education and to work effectively with parents and community.

Learning Outcomes: This course will provide an insight to the students about the various ECCE centres and their activities. It will enable them to plan activities for the pre-schoolers in an effective manner.

Course Outcomes for HD-103

COs# After the completion of this course the students will be able to:

HD103.1 Explain the contemporary emergence and positioning of Early Childhood Care and education along a theoretically guided curricular framework.

HD103.2 Plan ECCE programs keeping in mind socio-cultural diversity and knowledge of local, global methods and practices.

HD103.3 Design strategies for effective capacity building and implementation of early childhood development programs.

HD103.4 Learn about the use of playway methods to teach concepts like science, maths, Sst., art and craft etc.

Unit-I

1. Principles of Early childhood Care and Education

-Importance, Need and Scope of ECCE.
-Objectives of ECCE
-Types of Preschools/Programmes: Play Centres, Day Care, Montessori, Kindergarten, Balwadi, Anganwadi etc.

2. Historical Trends (Overview)

-Contribution of the following thinkers to the development of ECCE (their principles, applications and limitations) in the context of ECCE.

-Pestalozzi, Rousseau, Froebel, Maria Montessori, John Dewey, GijubhaiBadheka, TarabaiModak, M.K. Gandhi, Rabindranath Tagore.

Unit- II

3. ECCE in India

- Pre-Independence period, Post-Independence - Kothari Commission,
- Contribution of the five-year plansto ECCE -Yashpal Committee,
- Maharashtra Preschool Centre Act.

4. Contribution of the following agencies/programmes to ECCE in India.

-ICCW, IAPE, NCERT ICDS

-UNICEF, NCTE, Mobile Crèches

Unit- III

5. Organisation of Pre-School Centres

- Concept of organisation of early childhood centres.
- Administrative set up and functions of personnel workingat different levels.

-Building and equipment: location, Site, Arrangement of rooms, Different types and sizesof rooms, Playground, Storage facilities.

-Selection of different types of outdoor and indoor equipment,

-Maintenance and display of equipment and material

-Staff/Personnel Service conditions and role: Role and responsibilities, essential qualities of a care giver/teacher, other personnel.

-Record and Report: Types, aim and purpose/need, general characteristics e.g., anecdotal, cumulative, sample work, medical etc.

6. Programme Planning

-Principles and steps in Programme Planning

-Planning- Setting goals and objectives of plans- Long term, Short term, Weekly and Daily, Annual and Monthly,

-Theme Planning

-Routine and Schedules.

Unit- IV

7. Learning andPlay:

-Definition, Principles and Methods of learning.

-Effective methods of learning.

-Creating an effective learning environment in the class and Role of techniques in promoting learning in young children.

-Play- Types, Characteristics.

- Role of play in overall development of children, Teacher's role.
- Use of play way approach in the curriculum for young children.

8. Activities for ECCE:

-Language Arts- Types of activities to promote listening (songs, object talk, picture talk, free conversation, books, games, stories).

-Art and Craft- creative activities of expression: Use of chalks, crayons,paints,paperwork & best out of waste.

-Music: songs, listening & singing.

-Mathematics: concepts like: classification, serration, counting, addition &subtraction.

-Science and Social Studies: observing classifying, concept formation.

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1. Bhatia & Bhatia (1995). Theory and Principles of Education, Doaba. House, Delhi.
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14. Maxim G. (1980). The very young, California: Wordsworth.
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CO-PO matrix for the course HD-103 (Early Childhood Development: Care and Education)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
HD103.1	2	3	2	3	1	3
HD103.2	3	3	2	3	3	3
HD103.3	3	3	3	3	3	2
HD103.4	3	2	2	3	2	3
Average	2.75	2.75	2.25	3	2.25	2.75

CO-PSO matrix for the course HD-103 (Early Childhood Development: Care and Education)

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
HD103.1	2	3	3	3	3	1
HD103.2	3	3	3	3	3	1
HD103.3	2	3	3	2	3	1
HD103.4	2	3	3	3	3	2
Average	2.25	3	3	2.75	3	1.25

M. Sc. (Human Development) CBCS

Semester -I
Core
Paper -HD-104
Cross-Cultural Perspectives in Family Studies

Total Marks: 100
External: 80
Internal: 20
Duration of Exam: 3 hrs
Credits: 4

Note:

- Examiner will set nine questions in all
- All the questions will carry equal marks
- Question No.-1 will be compulsory consisting of 5-10 short type questions (having no internal choice) and spread over the entire syllabus
- Eight questions, two questions from each unit (I, II, III & IV) will be set.
- The candidates are required to attempt five questions in all. Question No -1 will be compulsory, remaining four questions will be attempted by selecting one question from each unit.

Objectives:

- To understand family as a component of socio-cultural milieu and context.
- To familiarize students with developmental perspective in family life cycle.
- To realise and appreciate universals and variations in family life patterns across cultures and sub-cultures.
- To create awareness regarding philosophy, structure, function, needs and strengths of families with specific reference to the Indian family.
- To understand theoretical and methodological concerns related to family studies.

Learning Outcomes: The students will get familiarized with the structure, needs and methodological concerns of the family.

Course Outcomes for HD-104

COs# After the completion of this course the students will be able to:

HD104.1 Understand about the various forms of families and their significance in the society.

HD104.2 Gain knowledge about various roles and relationships existing in different types of family patterns and structures.

HD104.3 Gain knowledge about various theoretical perspectives offamily,their
. crisis and coping strategies.

HD104.4 Learn about the various cultural practices, societal exchanges and influences.

Unit-I

1. TheFamily in Social Context:
-Family as a component of social system, Structure and Context
-Family as an evolving and dynamic institution.
-Functions of family

-Family life cycle

2. Socio-Cultural Studies of Family Pattern's in India.

-Family structure: Traditional, Extended, Joint families.

-Alternate Families-Single parents' families, Childless families, Cohabitation marriage families without children, Female headed families.

-Unitary Families

-Family patterns in India-Tribal, Rural, Urban.

-Role relationships in the family.

-Sex roles and division of labour

- Cause and effect of family structure on changing roles of family.

- Sociological significance of family.

Unit-II

3. Approaches and Theories in Family Studies

-Developmental Approach.

-Interactional Approach.

-Institutional Approach.

-Systemic Approach.

-Family Life Cycle Approach.

-Cyclical Theory.

-Progressive Theory.

-Structural- Functional Theory.

4. Types of Family Crises and Coping Strategies

-Meaning, Types, Intervention &Services.

-Financial, Behavioural,

-Interpersonal Relationships and Health.

Unit-III

5. Contemporary Issues and Concerns

- Family violence, Battered women, Child maltreatment, Sexual abuse(child abuse)

-Dowry and Family Violence

-Child rearing and Socialization

- Gender roles

- Divorce and Remarriage

- Family planning

- Effect of Industrialization on family

- Major world trends in family patterns.

6. Disadvantaged Family

-VariousNeeds

-Various Problems

-Societal Support Mechanism.

-Therapy and Rehabilitation.

Unit-IV

7. Family and Societal Exchanges/Influences.

-Health and family

-Education and family

-Work and family

-Religion and family

-Beliefs, values and family

-Ecology and family

-Government and family

8. Cultural Practises of Families

-Traditional Cultural Practises

-Modern Cultural Practises

References:

1. Adams, B.N. (1975). The Family: A sociological interpretation. Chicago:Rand Mc Nully.
2. Ahuja, R (1997). Indian Social System (2nd Ed.).Jaipur: Rawat.
3. Arcus. H.E. and Others (1993). Handbook of Family Ufe Education: ThePractice of Family life education (Vol. II). N.Y.: Sage.
4. Bahr, S.J. (1989). Family Interaction. N.Y.: Macmillan.
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6. Bharat. S. (1996). Family measurement in India. New Delhi: Sage.
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8. Cooer, R (1975). Family: Its structure and functions. New York: Macmillan.
9. Das, H.S. &Bardis, P.O. (Eds.) (1978). The World Revolution in Family Patterns. New York: The Free Press.
10. Hoover. H.M. &Hoover,. HK (1979). Concepts and methodologies infamily: An instructor's resource handbook. Boston: Allyn& Bacon.
11. Jahan, R (1995). The elusive agenda: Mainstreaming women indevelopment In Landers and Leonard (Eds.). Seeds supporting Women'sWork Around the World. N.Y.: The Feminist Pres.
12. Kesberg. J.I. (1992). Family care of the elderly: Social and CulturalChanges. N.Y.: Sage.
13. Leslie. G.R (1988). The family in social context, New York: Oxford.
14. Lerner, RM. (Ed.). (1978). Child influences on marital and familyinteraction: A life span perspective: N.Y. Academic Press.
15. Lock, S.L. (1992). Sociology of the Family. London: Prentice Hall.
16. Mandelbaum, D.G. (1972). Society in India: Continuity and Change.Berkley: Univ. of California Press.
17. Queen, SA (1985). The Family in Various Cultures. (5th Ed.) N.Y. : Harper& Row.
18. Ramu, G.N. (1989). Women Work and Marriage in Urban India: A Study ofDual &SingleEarner Couples. New Delhi: Sage.
19. Rao, U.P.P. & Rao, V.N. (1985). Marriage: The Family and Women inIndia. New Delhi:Her

CO-PO matrix for the course HD-104 (Cross-Cultural Perspectives in Family Studies)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
HD104.1	3	3	2	2	3	3
HD104.2	2	3	1	2	3	2
HD104.3	3	2	2	3	3	3
HD104.4	3	3	2	3	3	3
Average	2.75	2.75	1.75	2.5	3	2.75

CO-PSO matrix for the course HD-104 (Cross-Cultural Perspectives in Family Studies)

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
HD104.1	2	3	3	3	3	3
HD104.2	2	3	2	3	3	3
HD104.3	3	3	2	3	3	3
HD104.4	3	3	3	3	3	3
Average	2.5	3	2.5	3	3	3

Semester -I
Core
Paper -HD-105 (Practical)
Methods and Techniques of Assessment in Human Development

Total Marks: 100
External: 80
Internal: 20
Duration of Exam: 3 hrs
Credits: 4

Course Outcomes for HD-105

COs# After the completion of this course the students will be able to:

HD105.1 Develop skills to use techniques and methods suited for different persons, situations and contexts.

HD105.2Be familiar with standardized tests/protocols for the study and assessment of individuals, families/settings.

HD105.3 Develop skills in recording fieldwork.

HD105.4 Gain knowledge about the various types of developments and tests used for measuring them.

Overview of Methods of Child Study.

1. Observation: Preparation of Observational Check List to assess any of Physical,Motor,Social, Language, Emotional and Cognitive Developmental Tasks.

2. Case Study: In-depth Case Study of a selected child.

3. Assessment of Various Developments of Children: Using available Measurement tools and techniques and Writing Interpretative Reports e.g., study of anxiety, aspirations, interests, motivation, self-concept etc.

4. Tests scales and other methods of assessment of

- Intelligence
-Social and personality development
-Emotional development.
-Cognitive development
-Language Development
-Physical and motor development
-Home Environment

5. Field Report and Project

-Report Writing and Evaluation of Children and ECCE Programmes.

CO-PO matrix for the course HD-105 (Methods and Techniques of Assessment in Human Development)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
HD105.1	3	2	3	3	3	3
HD105.2	3	3	3	3	3	3
HD105.3	3	2	2	3	2	3
HD105.4	3	3	3	3	3	3
Average	3	2.5	2.75	3	2.75	3

CO-PSO matrix for the course HD-105 (Methods and Techniques of Assessment in Human Development)

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
HD105.1	3	3	3	2	3	2
HD105.2	3	3	3	2	3	2
HD105.3	3	3	3	3	2	2
HD105.4	3	3	3	2	3	2
Average	3	3	3	2.25	2.75	2

M. Sc. (Human Development) CBCS
Semester -I
Core
Paper -HD-106 (Practical)
Early Childhood Development: Care and Education

Total Marks: 100
External: 70+10*
Internal: 20
Duration of Exam: 3 hrs
Credits: 4

Course Outcomes for HD-106

COs# After the completion of this course the students will be able to:

HD106. 1 Develop skills to use principles of pedagogy and curricular framework for optimal development through ECCE programs.

HD106. 2 Develop ways to address socio-cultural diversity through local and global methods and practices.

HD106. 3 Devise and develop strategies for effective capacity building, implementation and assessment of early childhood care and education programs.

HD106. 4 Acquire necessary skills to work effectively with families and form collaborative relationships with them.

1. Visits to various centres, of ECCE: Day Care Centre, Balwadi, Anganwadi, Mobile Creche etc.
2. Planning and executing activities forchildren's all-round development in ECCE centres.
3. Preparing teaching material kits:
   -Mobiles
   -Masks
   -Puppets- Making and manipulation
   -Making book for Children
   -Picture Puzzles
4. Music
   -Orientation to music
   -Low-Cost Musical Instrument
   -Song Booklet
5. Skills for Promoting Language, Science and Creativity
   - Object/Picture Talk
   -Story Book
   -Poem Book
   -Science and Math Concepts
   -Creativity File
   - Readiness Games and Material
6. Preparing a Resource unit file
7. Role play of home visits and conducting a home visit to a known family.
8. Planning of parent teacher meeting: Stimulation of Meetings/events/function-Planning and programme evaluation
9. Placement and observation in different Early Childhood Education and Day Care centres for two weeks.

CO-PO matrix for the course HD-106 (Early Childhood Development: Care and Education)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
HD106.1	3	3	3	3	3	3
HD106.2	3	3	3	3	2	3
HD106.3	3	3	2	3	3	3
HD106.4	3	2	3	3	2	3
Average	3	2.75	2.75	3	2.5	3

CO-PSO matrix for the course HD-106 (Early Childhood Development: Care and Education)

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
HD106.1	3	3	3	2	3	2
HD106.2	3	3	3	3	3	2
HD106.3	3	3	3	3	3	2
HD106.4	3	3	3	3	3	3
Average	3	3	3	2.75	3	2.25

M. Sc. (Human Development) CBCS
Semester -II
Core
Paper -HD-201
Fundamentals of Human Development

Total Marks: 100
External: 80
Internal: 20
Duration of Exam:3 hrs
Credits:4

Note:

- Examiner will set nine questions in all
- All the questions will carry equal marks
- Question No.-1 will be compulsory consisting of 5-10 short type questions (having no internal choice) and spread over the entire syllabus
- Eight questions, two questions from each unit (I, II, III & IV) will be set.
- The candidates are required to attempt five questions in all. Question No -1will be compulsory, remaining four questions will be attempted by selecting one question from each unit.

Objectives:

- To undertake an advanced study of the stages in human development with special focus on stages from prenatal development to adolescence.
- To understand the principles and factors influencing human development in these stages.
- To understand the importance of biological bases in human development.

Learning Outcomes: This will enable the students to learn about the various developments and their outcomes at various stages namely from birth to adolescence.

Course Outcomes for HD201

COs#	After the completion of this course the students will be able to:
HD201.1	Demonstrate knowledge of developmental processes and principles.
HD201.2	Engage with the critical areas in the study of development in childhood.
HD201.3	Demonstrate knowledge of domains of development during childhood.
HD201.4	Gain knowledge about various special issues in the course of development.

Unit-I

1. **Principles and Concepts of Development:**
   -Principles of Growth and Development.
   -Developmental Tasks.
   -Basic concepts of Development-Maturation and Learning, Sensitive periods, Individual differences, Nature-nature-issues, Critical periods& Sex differences.
   -Secular trends in growth
2. **Biological Bases of Development:**

-Physiological processes.
-The Human Genome & its significance for Human Development.
-Genetic influences in different stages

Unit-II

3. Prenatal Development:
-Recapitulation of stages in Prenatal development.
-Genetic and Environmental factors, Maternal Conditions and Teratogens.
-Importance of Indian practices during pregnancy.

4. Infancy :((Birth-2 years)
-The new born: Birth process and the Neonate.
-Physical description, Sensory capacities and Reflexes.
-Becoming co-ordinated- Feeding, Sleeping, Crying.
-Imitation, Objects permanence and other Cognitive accomplishments.
-Early Language development.
-Social relationships during infancy.
-Early Emotional development, Temperament & Attachment.
-The Cultural experience of being an infant.

Unit-III

5. Early Childhood (2-6 years)
-Transition from infancy to childhood.
-Physical and Motor development.
-Language, Cognition and Emotions in early years.
-Play and Social relationships, The emerging Self.
-Early Socialization, Parenting and Cultural processes.
-Early Childhood Education.

6. Middle Childhood (7-11 years)
-Physical and Motor development: Changes and Challenges.
-Sense of industry and Personality development, Cognitive, Moral and Language development.
-Social Relationships-Peers, Siblings & Parents.
-The experience of schooling- Academic achievement.

Unit-IV

7. Adolescence (11-18 years)
-Transition from Childhood to Sexual maturity.
-Puberty and its Consequences.
-Early v/s late matures and Emotional changes.
-Development of Formal Operations.
- Adolescent thought integration of the self.
-Issues of Identity.
-Role of family, Peers.
-Role of Community and Ethnic group.
-Moral reasoning and Judgement.

8. Special issues:
-Health, Sexuality, Mental health and Conformity.

References:

1. Rice, F.P. (1995). Human Development. New Jersey: Prentice Hall.
2. Berk, LE. (1995). Child Development. London: Allyn& Bacon.
3. Cole, M. & Cole, S. (1993). The development of children. (2nd ed.) New york: Scientific American Books Freeman & Co.
4. Dutt, S. (1998). Moral Values in child Development. New Delhi: Anmol.
5. Santrock, J.W. &Mussen, S.R. (1988). Child development: An introduction. lolr\ t: Wm. C. Brown Publishers.
6. Bee, H. (1997). The developing child (VIII ed.). New York: Longman.
7. Clarke-Stewart, A. & Friedman, S. (1987). Child development: Infant through adolescence. New York: John Wiley.
8. Mussen, P.H.; Conger, J.J.; Kagan, J. & Huston, A.C. (1996). Child development and personality. New York: Harper & Row.

CO-PO matrix for the course HD-201 (Fundamentals of Human Development)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
HD201.1	3	3	2	3	3	3
HD201.2	3	3	2	2	3	3
HD201.3	3	3	2	2	2	2
HD201.4	2	3	1	3	2	1
Average	2.75	3	1.75	2.5	2.5	2.25

CO-PSO matrix for the course HD-201 (Fundamentals of Human Development)

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
HD201.1	3	2	2	2	3	2
HD201.2	3	3	2	2	3	2
HD201.3	3	2	2	2	2	1
HD201.4	2	2	1	3	3	3
Average	2.75	2.25	1.75	2.25	2.75	2

M. Sc. (Human Development) CBCS
Semester -II
Core
Paper -HD-202
Adolescence and Adulthood: Development, Psychology and Challenges

Total Marks: 100
External: 80
Internal: 20
Duration of Exam: 3 hrs
Credits: 4

Note:

- Examiner will set nine questions in all
- All the questions will carry equal marks
- Question No.-1 will be compulsory consisting of 5-10 short type questions (having no internal choice) and spread over the entire syllabus
- Eight questions, two questions from each unit (I, II, III & IV) will be set.
- The candidates are required to attempt five questions in all. Question No -1 will be compulsory, remaining four questions will be attempted by selecting one question from each unit.

Objectives:

- To understand the stages of adolescence and adulthood in human development.
- To study the major development characteristics of these stages.
- To study the issues of identity, development tasks and problems associated with these stages.
- To create an awareness about social processes during adolescence & adulthood.

Learning Outcomes: This course will help the students to get an insight of the adolescent development, psychology, challenges & issues concerning them.

Course Outcomes for HD202

COs# After the completion of this course the students will be able to:

HD202.1 Gain knowledge about the various principles of developmental processes during adolescence and youth.

HD202.2 Engage themselves in the critical areas of development of adolescence and youth.

HD202.3 Gain knowledge about all the domains of development in adolescence and youth.

HD202.4 Know about the influence of family, culture, community, etc. on adolescence and youth.

Unit: I

1. The Adolescent Stage:

- Period of Storm and Stress.
-Its link with Middle childhood and Youth.
-The concept of Adolescence.

-Developmental tasks of Adolescence.

2. Theoretical Perspectives:

-Anna Freud, Erik Erikson, James Marcia, and Margaret Mead.

- Indian perspectives.

3. Physical and Sexual Development:

-Puberty, development of primary & secondary sex characteristics.

-Psychological response to puberty, Gender differences.

-Sexuality, Sexual needs and Sex education

-Causes of HIV/AIDS and prevention.

Unit –II

4. Cognitive Development and Moral Development

-Formal operations- Piaget's Theory, Intellectual development at adolescence and adults.

-The Information –Processing view.

-Reasoning, thinking critically, reflective judgement.

-Moral reasoning and judgement (Kohlberg's stages)

5. Identity Formations

-Different perspectives: Construct of Self and development of Self-Concept.

-Indian views on adolescent's identity.

Unit -III

6. Social and Emotional Development:

-Family & the Adolescent.

-Peers and Friendships. Interpersonal relation (parents, siblings etc.)

-Emotional Competence.

-Rebellion and conflict with home and school authorities.

7. Schools, College, Work and Career

-Adolescence and adult in the context of differential opportunities for education and Formal training.

-Importance of academic achievement and failure, related issues.

-Training for career and work.

Unit-IV

8. Important Agents of Influence

-Family, Community and Culture

-Electronic Media.

9. Marriage:

-Legal age and its relationship to development.

- Marriage as a family/individual issue.

-Marriage choices and significance of marriage in Human Development.

10. Delinquency and Disturbance:

-Juvenile Delinquency: causes and prevention.

-Psychological disturbances: Depression, Suicide, Substance abuse.

References:

1. Balk, D.E. (1995). Adolescent development. New York: Brooks! Cole.
2. Erikson, E.H. (1968). Identity: Youth and crisis. London: Faber & Faber
3. Kroger, J. (1996). Identity in adolescence. London: Routledge.
4. Kakkar, S. (1992). Identity and adulthood. Delhi: Oxford University Press.
5. NIPCCD. (2000). Adolescent Girls' Scheme - An evaluation. New Delhi: NIPCCD.
6. Sharma, N. (1996). Identity of the adolescent girl. New Delhi: Discovery Publishing House.
7. Saraswathi, T.S. & Dutta, R. (1988). Invisible boundaries: Grooming for adult role.

CO-PO matrix for the course HD-202 (Adolescence and Adulthood: Development, Psychology and Challenges)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
HD202.1	2	3	2	2	3	3
HD202.2	3	3	3	3	3	3
HD202.3	3	3	3	3	3	3
HD202.4	2	3	1	2	3	1
Average	2.5	3	2.25	2.5	2.75	2.5

CO-PSO matrix for the course HD-202 (Adolescence and Adulthood: Development, Psychology and Challenges)

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
HD202.1	3	2	1	2	3	1
HD202.2	2	3	1	3	3	1
HD202.3	3	2	1	2	3	1
HD202.4	2	2	1	3	3	1
Average	2.5	2.25	1	2.5	3	1

M. Sc. (Human Development) CBCS
Semester -II
Core
Paper -HD-203
Management, Policies and Programmes for Women and Children

Total Marks: 100
External: 80
Internal: 20
Duration of Exam: 3 hrs
Credits: 4

Note:

- Examiner will set nine questions in all
- All the questions will carry equal marks
- Question No.-1 will be compulsory consisting of 5-10 short type questions (having no internal choice) and spread over the entire syllabus
- Eight questions, two questions from each unit (I, II, III & IV) will be set.
- The candidates are required to attempt five questions in all. Question No -1 will be compulsory, remaining four questions will be attempted by selecting one question from each unit.

Objectives:

- To develop an understanding of constitutional provisions and legislations with reference to children and women in India.
- To understand the purpose, scope and challenges in the management of programmes for children and families.
- To understand the various approaches to programme management.
- To organise, implement & evaluate programmes for children & family.

Learning Outcomes: The students will come to know about planning, implementing and evaluating various programmes. They will also get knowledge about the legal rights and policies for the children and women.

Course Outcomes for HD203

COs#	After the completion of this course the students will be able to
HD203.1	Obtain knowledge of prevalent social policies as they relate to lives of children and women.
HD203.2	Be familiar with constitutional provisions and legislations for women and children
HD203.3	Be able to engage with the linkages between social policy, legislations and Implementation of schemes and programs.
HD203.4	Gain knowledge about the supervision, evaluation of various programs, policies.

Unit –I

1. Programme Planning:

-Definition, Objectives, Principles, Steps in planning.
-Defining project goals, Steps in goal formation.

2. Management:

-Meaning and importance of management

-Objectives, Characteristics, Steps of management.

-Importance of management skills.

Unit –II

3. Overview of Provisions:

-Policies and Action plans.

-Rights and Social policies.

-Five years plans.

4. Constitutional Provisions Laws and Conventions:

-Constitutional Provisions.

-Legislations for women and children.

-Conventions for protection of women & children.

Unit –III

5. Programmes for Children:

-Identification of specific programmes for children.

-Types of programmes & their management.

-Child welfare programme in India –Recent approaches.

6. Programmes for Family:

-Identification of specific programmes for family.

-Types of programmes & their management.

-Family welfare programmes in India–Recent approaches.

-Family Counselling.

Unit –IV

7. Linkages:

-Govt. role-Centre, State and Local level.

-NGO and Corporate, Social responsibility in implementation of programmes.

-Effective initiatives in various domains.

8. Monitoring and Evaluation:

-Supervision, meetings to plan, feedback.

-Project Report.

-Programme evaluation and Review techniques.

-Critical appraisals.

References:

1. Chaudhary, P. (1985). Child Welfare Services. New Delhi: Atmaram& Sons.
2. Dorothy, A.S. and Ricks, B.A. (1989). Contemporary Supervision: Managing people and technology. New York: Mac Graw Hill.
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4. Hillbrand V (1984). Management of Child Development Centers, New York: Collier MacmillanPublishing, 1984.
5. Leeper, S.H. Wither Spoon, R. L & Day, B. (1984); Good Schools Young" Children (5th edition), New York: Macmillan.
6. Maluccio, A.N, Fein, E and Olmstead, K. A. (1986). Permanency Planning for Children: Concepts & Methods. New York: Tavistock Publication.

7. Mohanty, J. Mohanty B. (1984). Ear1y Childhood Care & education, New Delhi: Deep & Deep.
8. Peter T (1997). The Circle of Innovation: You Can't Shrink Your Way to greatness, U. K.: Hodder &Stoughten.
9. Shaffir, W.B. (1991). Experiencing Field-work. New York: Sage.

CO-PO matrix for the course HD-203 (Management, Policies and Programmes for Women and Children)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
HD203.1	3	2	1	2	2	3
HD203.2	1	2	2	3	2	3
HD203.3	2	3	2	3	3	3
HD203.4	1	1	2	2	2	3
Average	1.75	2	1.75	2.5	2.25	3

CO-PSO matrix for the course HD-203 (Management, Policies and Programmes for Women and Children)

COs#	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
HD203.1	1	2	3	3	3	3
HD203.2	2	1	1	3	3	3
HD203.3	2	1	3	3	3	3
HD203.4	2	2	3	3	3	3
Average	1.75	1.5	2.5	3	3	3

M. Sc. (Human Development) CBCS
Semester -II
Core
Paper -HD-204
Population and Family: Dynamics, Psychology and Welfare

Total Marks: 100
External: 80
Internal: 20
Duration of Exam: 3 hrs
Credits: 4

Note:

- Examiner will set nine questions in all
- All the questions will carry equal marks
- Question No.-1 will be compulsory consisting of 5-10 short type questions (having no internal choice) and spread over the entire syllabus
- Eight questions, two questions from each unit (I, II, III & IV) will be set.
- The candidates are required to attempt five questions in all. Question No -1will be compulsory, remaining four questions will be attempted by selecting one question from each unit.

Objectives:

- To understand the dynamics of population.
- To know about the role of various agencies at international and national level.
- To discuss population statistics with special references to children and women.
- To know about various family welfare services.

Learning Outcomes: This course will enable the students to understand the population dynamics & come to know about the role of various agencies at international and national level.

Course Outcomes for HD204

COs#	After the completion of this course the students will be able to
HD204.1	Obtain knowledge of population and its dynamics in developing countries.
HD204.2	Be familiar with various agencies working for mental health in India.
HD204.3	Be able to engage with various programs for reproductive health and family welfare services.
HD204.4	Gain knowledge about population growth, statistics and its consequences.

Unit –I

1. Population Dynamics:

-Study of population and Population dynamics in developed and developing Countries.

-Study of population dynamics in India.

2. Population Education:

- Meaning, Objectives, Problems of population education in India.

-Role of National, International and Non-governmental agencies.

3. Models of Mental Health Services:

-Mental, Social

-Population Mental Health in India: Issues and Challenges

Unit –II

4. Population Statistics:

-Children and Women Morbidity, Mortality- Causes & Consequences.

-Infant Morbidity and Mortality - Causes & Consequences.

5. Population Growths:

-Factors, Causes, Consequences, Statistics with special references to India.

6. Birth Control Measures:

-Types of birth control measures

-Benefits and Drawbacks.

-Role of Govt., NGO's etc. in family planning.

Unit-III

7. Reproductive and Child Health Programmes:

-Measuring of RCH programmes, content, target groups.

-Various Programmes issues by govt. & various agencies.

-Reproductive rights of women.

8. Family Welfare Services:

-Community based assistance to family.

-Day care services.

-Services for family in poverty.

-Services for family with problem children.

Unit-IV

9. Family Laws and Family Courts:

-Legal acts for family, children & women.

-Various Family Courts run in India.

10. Roles of Agencies and Organisation:

-Various agencies involved in the welfare of Children.

-Various agencies involved in the welfare of Family.

11. National Commissions for Women

References:

1. Diwan, Paras, Diwan Peeyushi (2000). Women and Legal Protection. Deep and Deep Publication, New Delhi.
2. Agosin, M. (2003). Women Gender and Human Rights. Rawat Publications, New Delhi.
3. Bajpai, A. (2003). Child Rights in India: Law, Policies and Practises. Oxford University Press, New Delhi.
4. Kumar, R. (2000). Women and Marriage. Anmol Publications Pvt. Limited: New Delhi.

CO-PO matrix for the course HD-204 (Population and Family: Dynamics, Psychology and Welfare)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
HD204.1	2	2	3	2	3	3
HD204.2	2	2	2	2	3	3
HD204.3	3	3	2	2	3	3
HD204.4	3	3	3	3	3	3
Average	2.5	2.5	2.5	2.25	3	3

CO-PSO matrix for the course HD-204 (Population and Family: Dynamics, Psychology and Welfare)

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
HD204.1	2	2	2	3	3	3
HD204.2	2	3	2	3	3	2
HD204.3	3	2	1	3	2	3
HD204.4	2	3	1	3	3	3
Average	2.25	2.5	1.5	3	2.75	2.75

M. Sc. (Human Development) CBCS
Semester -II
Open Elective
Paper -HD-206
Marriage and Family Dynamics

Total Marks: 50
External: 40
Internal: 10
Duration of Exam: 3 hrs
Credits: 2

Note:

- Examiner will set nine questions in all
- All the questions will carry equal marks
- Question No.-1 will be compulsory consisting of 5-10 short type questions (having no internal choice) and spread over the entire syllabus
- Eight questions, two questions from each unit (I, II, III & IV) will be set.
- The candidates are required to attempt five questions in all. Question No -1 will be compulsory, remaining four questions will be attempted by selecting one question from each unit.

Objectives:

- To sensitize the students towards marriage & family life.
- To understand the traditional and changing norms of the institution of family with reference to its social environment.
- Get acquainted with the concept of marriage and the areas of adjustments within the family.
- Become aware about the dynamics of family interaction and developmental tasks through family life span
- Become aware of problems in families and ways of coping up.

Learning Outcomes: This course will enable the students to know about the importance of marriage and its adjustments in their lives. This will also become aware about the various family patterns, crisis and counselling.

Course Outcomes for HD206

COs# After the completion of this course the students will be able to

HD206.1 Gain knowledge about marriage and its types in different Indian societies.

HD206.2 Be familiar with meaning, structure and forms of families and kinship.

HD206.3 Know about family patterns, adjustments, crises and laws in India.

HD206.4 Learn about demographic profile of women and children in India.

Unit-I

1. Significance of the term 'Family Dynamics'

- "Marriage and family" as an institution and its importance.

2. Marriage:

-Marriage- Purpose, Motives, Functions & types.
-Marriage in different Indian Societies.
-Traditional marriage and modern marriage.
-Readiness for marriage.

3. Compatibility in Marriage:

-Premarital Counselling.
-Marital harmony & personal compatibility in marriage.
-Post marital counselling.

Unit –II

3. Kinship:

-Terminology, Principles, Patterns & Types of Kin groups.
-Degrees, Decent, Usage & its influence.
-Kinship trees for Families of Origin.

4. Family:

-Origin, Evolution, Meaning, Structure and Forms of families.
-Family and its changing functions.
-Approaches of family- Biological, Historical, Sociological, Developmental
-Family life cycle & development tasks (seven stages of family life cycle)
-Changing trends in family system.

Unit-III

5. Family Patterns:

-Alternate Family Patterns-causes, Characteristics and Implications.
-Family dyadic relationships-filial, Fraternal, Conjugal, in-laws, Grandparent-children.
-Multiple roles of women.
-Role change & conflicts.

6. Family Adjustments and Disorganization:

- Areas of adjustment.
-Patterns of adjustment.
-Causes and consequences of disorganization.

7. Crises and Counselling:

-Crises in family life: Meaning, Types.
-Current family problems.
-Marriage and family counselling.

Unit-IV

8. Laws:

-Laws related to marriage and families in various religions and cultural settings of India.

9. Technological Advancement and family:

-Various impacts of technology on the family life.

10. Demographic profiles:

-Of women and children (with special reference to India).

11. Survey of families: -With different backgrounds for understanding the changing scenario of families in the present context.

References:

1. Blood, Robert and Wolfe (1960) "Husband and Wife Dynamics of Married Life" , free Press, New York.
2. Duvall, E.M.(1977) "Marriage and Family Development" ,Lippincott Co. Philadelphia.
3. Dyer E.D. (1969) " Courtship, Marriage and Family", American Style the Dorsey Press, Illinois.
4. Gore, (1969) " Urbanisation and Family Change" ,Popular Prakashan, Bombay.
5. Henslin, J.M. (ed.) (1989) "Marriage and Family in a Changing Society" , The Free Press, U.S.A.
6. Kapur, P.(1974) "Marriage and the Working Women in India" ,Vikas Publications, New Delhi

CO-PO matrix for the course HD-206 (Marriage and Family Dynamics)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
HD206.1	1	1	2	1	1	1
HD206.2	1	2	2	2	2	3
HD206.3	2	3	3	3	3	3
HD206.4	3	3	3	3	3	3
Average	1.75	2.25	2.5	2.25	2.25	2.5

CO-PSO matrix for the course HD-206 (Marriage and Family Dynamics)

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
HD206.1	1	1	1	2	3	3
HD206.2	2	1	2	2	3	3
HD206.3	2	3	2	3	3	3
HD206.4	3	3	3	3	3	3
Average	2	2	2	2.5	3	3

M. Sc. (Human Development) CBCS
Semester -II
Core
Paper -HD-207 (Practical)
Adolescence and Adulthood: Development, Psychology and Challenges

Total Marks: 100
External: 80
Internal: 20
Duration of Exam: 3 hrs
Credits: 4

Course Outcomes for HD-207

COs# After the completion of this course the students will be able to

HD207.1 Undertake studies of Adolescence and Youth across domains.
HD207.2 Identify and use appropriate tools and techniques of studying Adolescence and Youth.
HD207.3 Engage and work with Adolescence and Youth across contexts.
HD207.4 Plan and execute activities for youth keeping in mind their needs.

1. Visit to various centres catering to Adult.
2. Preparing Adult Education Programmes.
3. Plan and organize debates and discussions for adolescents for healthy andresponsible sexual behaviour to prevent HIV/AIDS.
4. Organizing a play for Adult Education.
5. Organizing a quiz on any relevant topic for today's Adults.
6. Case study of an Adolescent and Reporting.
7. Administering: Achievement, Vocational, Interest Personality Scales on Adolescent/ Adults an interpretation of the information.
8. Developing a schedule for identifying problems of adolescents in a chosen topic of Conflict, collecting information and reporting the result.

CO-PO matrix for the course HD-207 (Adolescence and Adulthood: Development, Psychology and Challenges)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
HD207.1	3	2	2	3	2	3
HD207.2	3	3	2	3	2	3
HD207.3	3	3	2	3	2	3
HD207.4	3	3	3	3	3	3
Average	3	2.75	2.25	3	2.25	3

CO-PSO matrix for the course HD-207 (Adolescence and Adulthood: Development, Psychology and Challenges)

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
HD207.1	3	3	1	3	3	3
HD207.2	3	3	1	3	3	3
HD207.3	2	3	1	3	3	3
HD207.4	3	3	1	3	3	3
Average	2.75	3	1	3	3	3

M. Sc. (Human Development) CBCS

Semester -II

Core

Paper -HD-208 (Practical)

Management, Policies and Programmes for Women and Children

Total Marks: 100
External: 60+20**
Internal: 20
Duration of Exam: 3 hrs
Credits: 4

Course Outcomes for HD208

COs# After the completion of this course the students will be able to

HD208.1 Obtain knowledge of prevalent social policies as they relate to lives of children and Women.

HD208.2 Be familiar with planning and implementation of projects for women and children.

HD208.3 Be able to engage with the linkages between social policy, legislations and implementationof schemes and programs.

HD208.4 Work for the rehabilitation of women and children.

1. Observational Visits and developing detailed reports of the various institutions and organizations working for Women and child welfare.
2. Developing Welfare Projects for areas such as: Health, Nutrition, Education, Rehabilitation of Children based on the information secure from an existing program in the locality.
3. Planning, Implementation strategies of projects in selected Women and Child Welfare institutions for testing their suitability.
4. Monitoring and Evaluation of services of Women and children welfare: Criteria and Impact.
5. Identification of specific programmes for children and families.
6. One month training in preschools/ NGOs /Orphanage /Old Age home/any other welfare organization and report submission.

CO-PO matrix for the course HD-208 (Management, Policies and Programmes for Women and Children)

COs#	PO1	PO2	PO3	PO4	PO5	PO6
HD208.1	2	1	2	3	3	3
HD208.2	3	2	2	3	2	3
HD208.3	2	3	3	3	3	3
HD208.4	3	3	3	3	3	3
Average	2.5	2.25	2.5	3	2.75	3

CO-PSO matrix for the course HD-208 (Management, Policies and Programmes for Women and Children)

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
HD208.1	3	3	3	3	3	3
HD208.2	3	3	3	3	3	3
HD208.3	2	3	2	3	3	3
HD208.4	3	3	3	3	3	3
Average	2.75	3	2.75	3	3	3