

UNIVERSITY OF MUMBAI

CIRCULAR

No.UG/147 of 2009.
Mumbai 400 032,
8th May, 2009.

The Principal,
College of Home Science,
Nirmala Niketan,
49, New Marine Lines,
Mumbai-400 020.

Madam,

I am to invite your attention to the Ordinances, Regulations and syllabi relating to the Master of Science (M.Sc.) (Home Science) degree course vide Pamphlet No.162 and to inform you that the recommendation made by the Ad-hoc Board of Studies in Home Science at its meeting held on 18th November, 2008 has been accepted by the Academic Council at its meeting held on 13th February, 2009 vide item No.4.21 and that, in accordance therewith, the syllabus for the M.Sc. (Home Science) degree course is revised as per Appendix and that the same has been brought into force with effect from the academic year 2009-2010.

Yours faithfully,

(D. H. Kate)

Deputy Registrar,
(UG/PG Section)

MUMBAI - 400 032
8th May, 2009

A.C./4.21/13.02.2009

No.UG/147-A of 2009,

MUMBAI-400 032

8th May, 2009

Copy forwarded with compliments for information to :-

- 1) The Dean, Faculty of Science.
- 2) The Chairperson, Ad-hoc Board of Studies in Home Science

University of Mumbai



Revised Syllabus for the M.Sc. (Part I & II) Degree Course In Home Science

(With effect from the academic year 2009 – 2010)

University of Mumbai



Revised Syllabus for the
M.Sc. (Part I)
Degree Course
In
Home Science

(With effect from the academic year 2009 – 2010)

M.Sc I (HOME SCIENCE)
(Revised Syllabus w.e.f. Academic Year 2009-10)

BRANCH I : FOODS, NUTRITION & DIETETICS

Course Outline

Subject	Theory/ Practical	Internal Marks	University Exam Marks	Total Marks	Periods Per week (of One hour) each)	University Exam hours	Internal/ External
Nutritional Biochemistry	Theory	15	60	75	3	2 ½	Both
Clinical Nutrition & Therapeutic Dietetics – Paper I	Theory	15	60	75	3	2 ½	Both
Food Science & Processing	Theory	15	60	75	3	2 ½	Both
Nutrition through life cycle	Theory	15	60	75	3	2 ½	Both
Food Science	Practical	25	---	25	2	----	Internal
Biochemistry & Food Analysis	Practical	15	60	75	5	5	Both
Research Methods & Statistics	Theory	25	75	100	4	3	Both
Practicum in Research Methods	Practical	50	--	50	3	---	Internal
TOTAL				550			

M.Sc. I (HOME SCIENCE)
BRANCH I : FOODS, NUTRITION & DIETETICS
NUTRITIONAL BIOCHEMISTRY
(THEORY)

Marks: 75

This course will focus on Nutrition as a Science that integrates biochemistry from the cellular level and would help to understand the metabolism of macronutrients in the body and how it would relate to nutritional health at the tissue, organ and system level.

Objectives:-

At the completion of this course the student should be able to :

1. Describe structure functions and metabolism of macronutrients.
2. Describe hormonal and enzymatic modulators to the metabolism of macronutrients.
3. Describe the biochemistry and metabolism of the macronutrients during different physiological states.
4. List important micronutrients needed as cofactors involved in macronutrient metabolism.
5. Explain the metabolic inter-relationship between macronutrients.
6. Have knowledge of current research on Nutrition & Metabolis.

Course Content :

NOL

Unit I a) Basic Chemistry and Classification of Macromolecules w.r.t. carbohydrates, (15)
Proteins, Lipids.

b) Interrelationship of

Vit A - ZN

Vit E - Se

Vit C - Fe

Vit D - Ca, P

B-Complex Mn, Mg, Co.

Unit II a) Digestion and absorption of macromolecules w.r.t. enzyme action and (20)
Biochemical mechanism.

b) Metabolism of macronutrients carbohydrates, EMP, TCA, Gluconeogenesis, HMP, Glycogen metabolism, Uronic acid pathway Metabolism of Fructose, Galactose.

c) Protein - General reactions of amino acids, Urea cycle, Glucose-Alanine Cycle, NH₃ transport. Biosynthesis of Glutathione, Creatinine, carnitine, heme, neurotransmitters.

d) Lipid:- Oxidation and biosynthesis of even C fatty acid Cholesterol biosynthesis.

e) Measurement of energy, Laws of Thermodynamis Redox reactions, Electron

Transport chain, ATP, Mechanism of Oxidative phosphorylation Phosphocreatine.

g) Inborn errors of metabolism w.r.t. Carbohydrates, lipid, proteins, nucleic

Unit III (a) Chemistry of Nucleic Acids, DNA Types of DNA RNA (10)

(b) DNA & RNA Metabolism

Transcription, Translation Disorders of purine, pyrimidine disorders.

(c) Regulation of Gene expression.
Nutrient gene interactions.

Unit IV a) Enzyme chemistry (15)

IUB Classification, identification of active site, factors affecting enzyme activity
Km and its significance, enzyme inhibition, drug-enzyme interactions, enzymes of clinical significance.

b) Nutrient and Drug Interactions. (10)

Drug metabolism, drugs as antimetabolites, effect of drugs on nutrient status.
Food and drug-nutrient incompatibilities.

(c) Body defense mechanisms.

- Detoxification and role of cytochrome p450.
- Free radicals, antioxidants.

Unit V Hormones: Chemistry, mechanism of secretion, physiological functions of (5)
Thyroxine, Catecholamines, Insulin, Glucagon, Corticosteroids, Growth hormone.

References:

- Berg J.M. Tynocrko, John, L et al Biochemistry 5th ed. New York W.H. Freeman and Co 2002.
Brody Tom. Nutritional Biochemistry 2nd ed. New Delhi El sevier/Reed El sevier India Pvt Ltd. 2004
Chatterjea M.N. Shinde and Rana textbook of Medical Biochemistry 6th ed. New Delhi Jaypee Brothers Medical Oublishers 2005.
Devlin Thomas, M (ed) textbook of Biochemistry with Chm, Corr. New york, John Wiley and Sons Inc. 1997.
Montgomery, rex and others Biochemistry A case oriented Approach St. Loius The C.V. Mosby Co. 1977.
Murray, R.K. and others. Harper's Biochemistry 25th ed. Connecticut, Appleton and large Publications.
Nelson D.L. and Cox. M.M. Lehmimnges, Principles o Biochemistry 3rd ed. New York. Worth Publishers Macmullan Press, 2000
Puri Dinesh Textbook of Biochemistry. A Clinically oriented Approach New Delhi B.I. Churchill Livingstone Pvt. Ltd. 2002.

M.SC. I (HOME SCIENCE)
BRANCH I : FOODS, NUTRITION & DIETETICS
CLINICAL NUTRITION AND THERAPEUTIC DIETETICS –PAPER I
(THEORY)

Marks : 75

Objectives:

1. To provide students with an overview of the physiology and functions of different organ system.
2. To expose students to the nutritional care process, the role of a nutritionist and the methods employed in nutrition provision and intervention.
3. To impart an in depth knowledge regarding prevalence, etiology, diagnosis, pathophysiology, drug nutrient interactions, gene – nutrient interactions and medical, nutritional and lifestyle management in different disease condition.
4. To enable students to focus on : advancements in clinical nutrition, emerging modes of therapy and intervention and Ongoing research in the field
5. To emphasize the importance of nutrition in the prevention of chronic disease.

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Course Content

Unit I. Nutritional care process & Nutritional Support

A) Nutritional Care process

- a) The nutritional care process a detailed study.
- b) Role, Skills of a nutritionist and Dietitian
- c) Counselling theories and strategies
- d) Normal Hospital diet plan.
- e) A review of recommended Dietary Allowances for the normal population.
- f) Modification of the hospital diet based on texture and calories.

6

B) Nutritional Support:

Enteral Nutrition

- a) Access
- b) Physical Characteristics
- c) Nutrition composition
- d) Types of formulae
- e) Nutrients of current interest
- f) Complications and its management
- g) Drug – nutrient interaction
- h) Parenteral Nutrition
- i) Access
- j) Physical and nutritional aspects
- k) Complications and its management
- l) Drug – Nutrient interaction.

10

Unit II. Nutrition and the immune system

(6)

A) Nutrition & Immunity

- a) Physiology and functions of the immune system.
- b) Nutrients affecting the immune system at the physiological, cellular and genetic level.
- c) Drug Nutrient interactions affecting immune status.
- d) Nutrients involved in the inflammatory response.
- e) Nutritional status and management of infection:
 - HIV
 - TB
 - Helicobacter pylori
 - Malaria, Dengue
 - Food borne infections.

B) Nutritional management in Allergies:

Diagnosis, management, prevention – with special reference to GM foods.

(2)

Unit III Nutrition and respiratory Health

(4)

- a) Physiology and functions of the respiratory system
- b) Nutritional Management of
- c) Asthma
- d) Chronic obstructive pulmonary disease
- e) Cystic Fibrosis

Unit IV Nutrition in the hypercatabolic state:

(6)

- a) Physiological, endocrine, metabolic and nutritional alteration in physiological stress.
- b) Nutritional management of the hypercatabolic patients:-
- c) Burns
- d) Trauma
- e) Surgery
- f) Sepsis (SIRS, MODS)
- g) Drug nutrient interaction

Unit V Nutrition in lifestyle related and Chronic Degenerative Disease

(15)

A) Weight management:

- a) Regulation of body weight
- b) Genetics and body weight

Obesity:

- a) Etiology, Assessment, Classification and Management
- a) Medical
- b) Nutritional, Lifestyle management, Role of exercise
- c) Surgical and complications
- d) Childhood Obesity.
- e) Nutrition in exercising obese individuals

Underweight:

- a) Etiology
- b) Metabolic consequences of starvation
- c) Management

Eating Disorders

- a) Anorexia Nervous
- b) Bulimia
- c) Binge eating disorders.

B) Nutrition in Diabetes Mellitus.

- a) Physiology and exercise functions of the pancreas. (12)
- b) Etiology, classification, complications and management:
- c) medical (insulin and OHA)
- d) Nutritional and Lifestyle Modification.
- e) Role of exercise
- f) Management of DM in special condition of infection
 - surgery
- g) gestational DM
- h) Nutrition in Athletes and exercising Diabetic patient

C) Nutrition in cardiovascular Diseases:

- a) Physiology and functions of cardiovascular diseases – heart, blood, blood cells, blood vessels. (10)
- b) Regulation of blood pressure
- c) Regulation of lipoproteins
- d) Atherosclerosis:-
 - Etiology and Risk factors
 - pathophysiology
- e) A study of complications and its management:-
 - Myocardial infarction
 - Hypertension
 - Congestive Cardiac failure
 - Hyperlipidemia.
- f) Nutrition in athletes and exercising patients with hypertension & hyperlipidemia

D) Nutrition and metabolic Syndrome

A study of prevalence, etiology, risk factors, complications, management. Special emphasis to preventive role of nutrition and lifestyle. (4)

References:

- Shetty J.M. (2005). Clinical Nutrition. Blackwell Publishing House.
- Shetty J.M. (2003) Nutrition Therapy 2nd ed. Helm Publishing, Texas
- Shetty J.M. (1997) Counselling skills for Dietitians Blackwell Publishing House
- Shetty J.M. (1997) Preventive Nutrition Humana Press
- Shetty J.M. (2007) Basic Nutrition Counselling Skill Development Wadsworth Pub. Co.
- Shetty J.M. (2003) Nutrition Essentials and Diet Therapy. 9th ed. Saunders Pub Co.
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- Shetty J.M. (2002). Nutrition Through The Lifecycle. Wadsworth Pub Co.
- Shetty J.M. (2003). Clinical Guide To Nutrition and Dietary Supplements in Disease Management Churchill –Livingstone Pub.
- Shetty J.M. et al. (1988). Nutrition and Metabolism in Patient Care W.B.Saunders CO.
- Shetty J.M. (2003). Nutritional Assessment 3rd ed. M c Graw Hill Pub.
- Shetty J.M. (1999). Annual Review of Nutrition vol 19 & 20. Annual Reviews, California.
- Shetty J.M. (2008). Krause's Food and Nutrition Therapy Saunders Pub.
- Shetty J.M. (1993). Human Nutrition and Dietetics 9th ed. Churchill Livingstone Pub.
- Shetty J.M. (2006). Modern Nutrition in Health and Disease. 10th ed. Lippincott William and Wilkins.
- Shetty J.M. (1997). Nutrition Support –Theory and Therapeutics. Chapman and Hall
- ICMR Pub. (2000). Nutrient Requirement and Recommended Dietary Allowances for Indians
- Gopalan .C. (2000). Nutritive Value of Indian Foods. NIN ICMR Pub.
- Whitney .C. (2006). Understanding Normal and Clinical Nutrition. Wadsworth publication
- Sauberlich .H (1999). Laboratory Tests for the Assessment of Nutritional Status 2nd ed. CRC Press
- British Nutrition Foundation. (1999). Obesity. Blackwell Science Pub.
- Zaloga G. (1994). Nutrition in Critical Care. Mosby Pub.

Journals:

Nutrition Reviews

American Journal of Clinical Nutrition

Journal of American Dietetic Association.

M.SC. I (HOME SCIENCE)
BRANCH I : FOODS, NUTRITION & DIETETICS
FOOD SCIENCE AND PROCESSING
(THEORY)

Objectives :

Marks:75

1. To enable the students to understand the chemistry of food components, the chemical and biochemical reactions in foods.
2. To impart a systematic knowledge of basic and applied aspects of food processing and technology
3. To enable students to become familiar with the quality and safety of food.

Course content:

NOL

Unit I

- A) **water** : States of water, water activity, water in food preparation.
Physical aspects of food preparation – energy and food energy transfer, mass transfer, state of matter, dispersions, emulsions, gels, foams. (4)
- B) **Carbohydrates** : overview, **Sugars**-properties of sugars, chemical reactions – Hydrolysis, caramelization, maillard reaction. Food Applications : crystalline candies, crystallization, ripening, syrup, sauces, jams and jellies, sweeteners – types, merits and demerits, safety aspects of sweeteners.
Starch – structure, functional properties, Gelatinization, pasting, Gelations, syneresis, retrogradation, dextrinization. Factors affecting gelatinization and gelation. Modified starch, resistant starch. **Gums** – Functions, sources, applications. Pectic substances, pectin gels. (10)

Unit II

- a) **Proteins** – Overview, hydrolysis, denaturation, Coagulation, Gluten complex development, Gelatin gel, modified meat products, soy proteins, texturised vegetable protein, non conventional sources of protein. (8)
- b) **Lipids** Overview, crystallinity of solid fats. chemical degradation, oxidative and hydrolytic rancidity, effect of heat, chemical modifications of fats, Hydrogenation, trans fats, functional roles of fats, fat replacements. (8)

Unit III

- a) **Enzymes** – Enzyme inactivation and control, food modifications using microbial & non microbial enzymes, enzyme browning, enzyme utilization in the food. (6)
- b) **Food colours** – Pigments in animal and plant foods, effects of processing, pH and storage on food colours, food colourants- permitted and non permitted (7)
- c) i) **Flavouring principles in different foods** – flavours of spices, vegetables and fruits, fats and oils, flesh food, milk ii) artificial flavours. 3
- d) **Evaluation of food quality** – subjective and objective evaluation, Requirements and techniques. Biosensors and E-nose (5)
- e) **Food laws and standards**., Nutrition and Food labeling (3)

Unit IV Brief overview of general principles of food preservation – heat preservation, cold preservation, ionizing radiation, dehydration and concentration and fermentation. Minimally processed foods. Use of hurdle technology., Application of Nanotechnology, Biotechnology in food preservation & processing (6)

Unit V Processing technology of the following foods:- (14)

- a) **Cereals & Millets** – Milling of cereals (rice, wheat, corn) & millets (ragi & bajra), breakfast cereals, fortified cereals. Processes involved in certain baked and extruded products using cereals and millets.
- Pulses** – Processing, elimination of toxic factors soyabean products.
- Oil seeds** – oil extraction, purification, fully refined oil, margarine, peanut butter, salad dressings.
- Fruits and vegetables** – Changes during ripening storage, post harvest processing techniques, dehydrated, canned, pickled and frozen vegetables, fruit processings – jams, jellies, mamalades, puree, pastes, powders, beverages.
- Milk and Milk products** – Milk processing, pasteurization, homogenization, standardization. Milk products, cheese, butter, cream, ghee, milk powder, ice cream concentrated milk, skim milk, lactone, Vit. D milk.
- Egg, Poultry fish and meat.**
- Quality of eggs, deterioration of eggs, egg processing – dehydration and freezing, egg products.
- Poultry processing and Tandoor chicken
- Fish spoilage in fish, canned, dehydrated and frozen, fish meal, fish protein concentrate fish oils.
- Meat – Meat tenderization ageing and curing, sausages.
- Sugar and Jaggery** - manufacture of sugar., HFCS
- b) **Convenience foods & ready to eat foods.** (1)

References :

- McWilliams, M (2007). Foods: experimental Perspectives 5th ed, New Jersey : Macmillan publishing co.
- N.S. Manay and M. Shadark Sharaswamy (1997) Foods : facts and principles New age International publishers, New delhi.
- Potter, N.N. and Hutchkiss J.H (1997) a Food Science 5th ed New delhi: CBS Publishers and Distributors.
- Subbulakshmi, G and Udipi, S.A. (2001) Foods processing and preservation New delhi ; New Age International (P) Ltd. Publishing.
- Swaminathan, M (1995) Food Science Chemistry and experimental food. The Bangalore printing and Publishing co. Ltd.
- Rick Parker (2003) Introduction to Food Science. N.Y Delmar Thomson learning.
- Scottsmith and Hui Y.H (Editors) 2004 Food Processing – Principles and applications Blackwell publishing, London.
- Borvers, J. (1992) Food Theory and application (2nd ed) New York Maxwell MacMillan International edition.
- Vacklavick V and Christian E (2003). Essentials of Food Science. Kluwer Academic/ Plenum Publisher, New York

M.Sc. I (HOME SCIENCE)
BRANCH I : FOODS, NUTRITION & DIETETICS
NUTRITION THROUGH THE LIFE CYCLE
(THEORY)

Marks: 75

Objectives:

1. To understand the changes in Human body composition during different stages of life.
2. To study the influence of Nutrition on man during the different stages of life cycle.
3. To be aware of, and update the knowledge in the field of nutrition as applied during the life cycle.

Course Content:

Unit I

- A.) Basics of Nutrition – A brief overview of functions, sources & deficiency of Macro and Micronutrients (5)
B) Balanced Diet (2)

Unit II A)

Nutrition during Pregnancy (15)

- a) Reproductive Physiology (Male and Female) in brief.
- b) Nutrition related disruptions in fertility (under and over nutrition)
- c) Physiology of pregnancy
- d) Effect of Nutritional Status on pregnancy outcome.
- e) Nutritional requirements and dietary guidelines
- f) Nutrition related complications
- g) Complications of pregnancy
- h) HIV/AIDS during pregnancy – Dietary concerns
- i) Role of Exercise & Fitness
- j) Adolescent Pregnancy

Unit II B)

Nutrition during Lactation (11)

- a) Physiology of Lactation
- b) Human milk composition
- c) Nutritional requirements & dietary guidelines
- d) Benefits of Breast Feeding
- e) Galactogouges
- f) Lactation Management in Normal & Special conditions

Unit III

A) Nutrition in infancy (6)

- Physiological development, Motor, Cognitive development.
- a) Energy and nutrient needs.

- b) Feeding in early and late infancy
- c) Development of infant feeding skills
- d) Common nutrition problems
- e) Feeding Preterm and low birth weight infants.

B) Nutrition in Toddlerhood and Preschool, Childhood & Preadolescent. (8)

- a) Growth and development
- b) Nutritional requirements
- c) Nutrition for children with special health care needs
- d) Feeding problems
- e) Nutritional concerns and prevention of nutrition related disorders
 - i) Obesity – underweight
 - ii) Deficiency condition.
 - iii) Allergies, eating disorders.

C) Nutrition in Adolescence (10)

- a) Growth and development
- b) Physiological and Psychological changes
- c) Nutritional requirements of adolescents
- d) Health and eating related behaviour.
- e) Situation with special needs
 - i) Pregnancy
 - ii) Eating disorders
 - iii) Obesity – underweight
 - iv) Substance abuse
 - v) Deficiency conditions
 - vi) Sports and athletics

Unit IV

(8)

Nutrition in the Adult years.

- a) Physiological and Psychosocial changes
- b) Common nutritional concerns
- c) Defensive Nutrition paradigm
- d) Nutritional requirements and dietary recommendation.
- e) Physical Activity in adulthood.

Unit V

(10)

Nutrition in Aging/Elderly.

- a) Theories of Aging, Physiological and Psychosocial changes
- b) The Aging Process
- c) Nutritional requirements of the Elderly
- d) Nutrition care

Nutrition needs during illness and chronic conditions.

Sensory loss

Oral health

GI functions

Neuromuscular & skeletal functions
Renal and cardiac function
Immuno competence

References :

- Bennion H (1979) Clinical Nutrition, New York Rapper and Raw
Donald, B, Mc Colmick, Dennis M. Bier (1997) Annual review of Nutrition (vol. 19)
Goodhart, R.S.S and Shils, M.E. (1998) Modern Nutrition in health and disease. Philadelphia
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Academy of Science.
Judith E. Brown (1998) Nutrition now. West/Wadsworth. International Thomson Pub. Co.
L. Kathleen Mahan, Sylvia Escott-Stamp, Kranse's Food Nutrition and Diet Therapy.
Lee Robert S and Carol Marcus (1990) Omega – 3 fatty acids in health and disease.
Mahan K.L. Stump S.E. – 11th ed. (2004) – Krause's Food Nutrition and diet Therapy – Saunders
– ELSEVIER USA.
Wardlawy G.M. Insel P.M. Seyler M.F. (1994) Contemporary Nutrition; Issues and insights St.
Lopuis Masby.
Warthington R. Vermecrush J. Willams S (1985) Nutrition in pregnancy and Lactation St. Louis
Times Mirror.Mosby College Publishing.
Lee Roberts and carol Marcus (1990) omega 3 Fatty Acids in health and disease – Marcel dekker
Inc.
Brown J.E. Issacs sugarman J, (2002) Nutrition through the life cycle – Wadsworth Thomson
learning.
Ziegler, EE and Filer L.J (1996) present knowledge in nutrition Washington D.C. International
Life Science institute.

Journals to be referred:

- Journal of American Dietetic Association USA – The American dietetics Association.
Nutrition reviews, New York Springton Verlog
The American – Journal of clinical Nutrition – USA Official journal of the American Society for
Clinical Nutrition Inc.
The Indian journal of Nutrition and dietetics.

M.Sc. I (HOME SCIENCE)
BRANCH I : FOODS, NUTRITION & DIETETICS
FOOD SCIENCE
(PRACTICAL)

Marks : 25

Objectives:

1. To guide the students in their quest for the scientific principles involved in the attainment of food quality.
2. To observe and identify physical and chemical changes underlying the preparation diverse of foods.

Course Content :

1. Sensory Evaluation of foods.
 - a) Threshold concentrations of primary tastes.
 - b) Effect of Temperature on taste.
 - c) Identification of samples through
 - d) Difference Testing
 - e) Descriptive testing
 - f) Affective tests.
2. Solutions and Ice crystallisation
 - a) Effect of formula and procedure on crystal size of frozen deserts.
3. Sugar Cookery
 - a) Tests for stages of sugar cookery
 - b) Effect of dry heat on sucrose.
 - c) Crystalline and Non crystalline candies.
4. Temporary and Permanent emulsions in salad dressings.
 - a) Effect of Stabilizers and Emulsifiers in salad dressings.
 - b) Comparisons of low fat and high fat French dressing.
 - c) Preparation and comparison of Mayonnaise with variations.
5. Principles that maintain High quality fried foods.
 - a) Smoke point of different fats and oils.
 - b) Effect of temperature on fat absorption.
 - c) Effect of Formulation on fat absorption.
 - d) Effect of Breeding on fat absorption.
 - e) Comparison of Texture, flavour and mouthful of food products using fat substitutes (if available).

6. Cereals and Flours.
 - a) Gelatinisation of Starch.
 - b) Comparison of different cereals for water absorption and consistency.
 - c) Comparison of - different methods of cooking rice
- different varieties of rice
 - d) Starches as thickening agents.
7. Milk and Milk products.
 - a) Effect of heat and acid on cooking of milk.
 - b) Effect of Gums on milk gelation.
 - c) Effect of fat content, pH stabilizers in cream and whipped toppings.
 - d) Differences between Natural and Processed cheese.
8. Eggs.
 - a) Denaturation and co-agulation of egg proteins in a variety of egg products.
 - b) Coagulation and gelation in Custards.
 - c) Egg white foams - Volume and stability.
9. Gelatin
 - a) Effect of Temperature of liquid.
 - b) Effect of proteolytic enzyme
 - c) Effect of whipping.
10. Pigments and Pectins in Fruits and vegetables.
 - a) Identification colour and texture changes on select vegetables after heat treatments, and treatment with acid and alkalines.
 - b) Gel forming properties of natural pectin in fruits.

References:

Mc Williams Margaret (2001) - Foods - Experimental Perspectives - fourth edition, Prentice Hall Inc. New Jersey.

Lawless Harry, Hildegard Heymann (1998), Sensory Evaluation of food - Principles and practices, Kluwer Academic/Plenum Publishers.

Weaver Connie (1996) - Food chemistry Laboratory - a manual for experimental foods, CRC press Inc. USA.

Jameson Karen (1998) - Food Science - A laboratory Manual, Prentice Hall Inc. - New Jersey.

M.Sc. I (HOME SCIENCE)
BRANCH I : FOODS, NUTRITION & DIETETICS
BIOCHEMISTRY & FOOD ANALYSIS
(PRACTICAL)

Objectives :

1. Theoretical knowledge remains incomplete unless complimented by a course in practicals in which laboratory techniques common to both basic and applied food chemistry & biochemistry is taught to students.
2. Practical help to understand the principles behind analytical techniques
3. To select and standardize the appropriate analytical technique.
4. Demonstrate practical proficiency in the laboratory
5. Learn to manage time effectively.
6. Be equipped to work in a food industry or a clinical biochemistry laboratory.

Course content :

1. Techniques

- a) Standardisation of acids and alkalies
- b) Preparation of buffers and indicators. Use of pH meter
- c) Paper chromatography of amino acids, sugars.
- d) Thin layer chromatography for pigments from turmeric, carrots, spinach.
- e) Agarose gel electrophoresis of serum proteins.

2. Isolation, Partial purification, calculation of % yield.

- a) Amylase from sweet potato and study of optimum pH, Km
- b) Pectin from apples/ bananas/ oranges
- c) Starch from potato
- d) Cholesterol from egg-yolk
- e) Essential oils from orange peel
- f) Curcumin from turmeric

3. Food Analysis

- a) Estimation of Cellulose
- b) Estimation of Methionine in foods
- c) Estimation of Lycopene from tomatoes

4. Biochemistry

- a) Estimation of calcium from serum by Trinder's methods
- b) Phosphorus by Fiske – Subbarow method
- c) Serum Iron of Dipyrindyl method
- d) Serum Creatinine by Jaffe's method
- e) Serum uric acid by caraway
- f) Serum Blood urea Nitrogen
- g) Serum Cholesterol, Triglycerides
- h) Serum Bilirubin... Evelyn-Malloy

5. Urine Analysis – Detection of abnormal Constituents.

6. Enzyme Chemistry
a) SGOT – SGPT
b) Alkaline Phosphatase

7. Hematology
a) Estimation of Hb by Sahli's/Drabkin's method
b) Demonstration of ESR, PCV, Bleeding Time, Clotting time, RBC, WBC count.

References :

- Dandekar Suchets, P. Rane S.A Practicals & Viva in Medical Biochemistry, New Delhi, Elsevier/Reed Elsevier India Pvt Ltd. 2004.
- Godkar, Praful. B. (Dr.). Textbook of Medical Laboratory Technology 2nd Ed. Mumbai. Bhalani Publishing House 2003.
- Jayaram J., Laboratory Manual in Biochemistry, New Delhi, Wiley Eastern Ltd. 1981
- Pearson, D. (1970). Chemical Analysis of foods, (6th Ed), London, T.A. Churchill.
- Plummer, David. T., Introduction to Practical Biochemistry. Bombay. Tata Mc Graw-Hill Pub. Co. Ltd. 1979.
- S. Sadasivan, A. Manickam. Biochemical Methods, 2nd ed. New Age International (P) Limited. Publishers 2003.
- Varley, Harold & others. Practical Clinical Biochemistry. 5th Ed. Delhi, CBS Publishers & Distributors 1980.

M. Sc. I (HOME SCIENCE)

BRANCH II: HUMAN DEVELOPMENT

Subject	Theory/ Practical	Internal Marks	University Marks	Total Marks	Periods /Week (of One hour) each)	Univer- sity Exam Hours	Internal/ External
Issues In Education	Theory	15	60	75	3	2.5	Both
Advanced Study of Theories of Human Behaviour and Development	Theory	25	75	100	4	3	Both
Advanced Study of Counselling And Psychological Testing	Theory	10	40	50	2	1.5	Both
Organisational Behaviour And Assessment	Theory	10	40	50	2	1.5	Both
ECCE Practicum	Practical	75	--	75	5	--	Internal
Counselling Practicum	Practical	25	--	25	2	--	Internal
Psychological Testing Practicum	Practical	25	--	25	2	--	Internal
Research Methods And Statistics	Theory	25	75	100	4	3	Both
Practicum in Research Methods	Practical	50	--	50	3	--	Internal
TOTAL				550			

M.Sc. I (HOME SCIENCE)
BRANCH II: HUMAN DEVELOPMENT
ISSUES IN EDUCATION
(THEORY)

Marks: 75

Objectives:

1. To facilitate in students a visionary approach to education.
2. To introduce, discuss and reflect on the current issues in early childhood education, school education, and higher education with special reference to the Indian context.
3. To help students build the knowledge and skills that are necessary for policy-making in education.

Course Content:

NOL

Unit I Introduction

(10)

- What is education?
- What are the goals in education?
- Boards of Education and their relevance in the Indian context (ICSE, CBSE, SSC, IB, IGCSE etc)
- What is the vision we must have of education?
- Education as conceived by great Indian thinkers (e.g., R.Tagore, M.K.Gandhi, S.Radhakrishnan, J. Krishnamurti)
- Education as conceived by great non-Indian thinkers (e.g., Plato, Aristotle, J. J. Rousseau, J. Dewey, F. Froebel, and M.Montessori).

Unit II Issues in Infancy and Toddlercare Programmes

(10)

- Goals
- Daycare/group care (quality, impact, concerns)
- Home-based care
- Role of government and special bodies

Unit III Issues in Preschool Education

(10)

- Goals, assessment; roles of children, teachers and parents in preschool
- Role of government and special bodies
- Model programmes/approaches in education/quality indicators
- Developmentally-appropriate practices etc.
- Using children's literature
- Preparation for transition,
- Disciplinary techniques etc.

Unit IV Issues in School Education

- Goals, assessment, promotion/retention
- Role of teachers and parents in school
- Role of government and special bodies
- Learning with computers
- Promoting reading
- Innovative teaching-learning activities
- Multiple intelligences
- Model programmes, integrated classrooms, academic stress, coaching classes, disciplinary techniques etc.

(20)

Unit V Issues in Higher Education

- Goals, roles of teachers and students
- Role of government and special bodies
- Privatisation of higher education
- Globalisation in education
- Distance learning
- Affirmative action/reservation policy
- Quality of higher education in India, assessment and accreditation
- Job opportunities, brain drain et.

(15)

References:

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Lefrancois, G.R. (1999) Psychology of teaching. Belmont, CA: Wadsworth / Thomson Learning

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M.Sc. I (HOME SCIENCE)
BRANCH II: HUMAN DEVELOPMENT
ADVANCED STUDY OF THEORIES OF BEHAVIOUR AND DEVELOPMENT
(THEORY)

Marks : _____

Objectives

1. To have students construct advanced knowledge of the theories of human behaviour and development:
 - (a) comprehend the relevance of personal and societal events/contexts in the construction of a theory
 - (b) analyze the major contributions of a theorist
 - (c) identify and address the major criticisms of a theory
 - (d) examine related research and/or applications
 - (e) study extensions/new directions
2. To develop in students an appreciation for primary literature.
3. To introduce the student to the latest theories of human behaviour and development.

Course Content :

Unit I. Introduction and Overview

- Overview of the course
- Concepts/definitions of theories, models, paradigms
- Role a theory in advancement of knowledge
- Process of theory development
 - The role of the context in theory development
 - A theory as an evolving phenomenon: across the life-time of a founding theorist and across generations of scholars

Unit II. Classic Theories of Development: The Psychoanalytical Perspective

1. Sigmund Freud

- Relevance of sociohistory (both personal and societal) in theory construction
- Overview of key concepts
- Advanced study of psychosexual development and the life and death instincts
- Advanced study of the unconscious (primary literature)
 - Justification for the concept of the unconscious
 - The dynamics of repression
- Psychoanalysis
 - Role of the unconscious in psychoanalysis
 - Illustration using one of Freud's case histories (primary literature)
- Psychopathology of everyday life (primary literature)
- Interpretation of dreams
- Major criticisms; major contributions

- Neo-Freudians
 - Anna Freud
 - Child psychoanalysis
 - Nature of anxiety and defense mechanisms
- Sudhir Kakar's use of psychoanalysis in understanding Indian culture

Unit III. Classic Theories of Development: Break-Aways from Freud

(16)

1. Carl Gustav Jung

- Relevance of personal and societal events/contexts in the construction of the theory (primary literature)
- Overview of key ideas
- The personal and impersonal/collective nature of human personality (the collective unconscious, ego, shadow, anima, animus, persona, archetypes)
- Advanced study of the Jungian perspective of the unconscious: the collective unconscious; related ideas such as synchronicity, significance of dreams, and, symbolism in art and religion (primary literature)
- The nature of human development
- Personality types
- Related research and applications; new directions
- Major criticisms; major contributions

2. Erik Erikson

- Relevance of personal and societal events/contexts in the construction of the theory (primary literature)
- Overview of key ideas
- The epigenetic chart and psychosocial stages (primary literature)
- Related research and applications; new directions
- Major criticisms; major contributions

Unit IV. Revised Classic Theories of Development: Neo-Behaviorism

(5)

1. Albert Bandura

- Historical background: overview of classical and operant conditioning and major criticisms
- Role of context in theory development: context of changing paradigms
- Overview of key changes in Bandura's approach to human learning
- Advanced study of modeling and related concepts (primary literature)
- The nature of contextualism
- Related research and applications; new directions
- Major criticisms; major contributions

1. Jean Piaget

- Role of context in theory construction
- Biological presuppositions and epistemological conclusions (primary literature)
- Illustration of the epigenetic point of view (primary literature)
- Advanced study of assimilation and accommodation (primary literature)
- Factors of development (primary literature)
- Stages of cognitive development
- Related research and applications; new directions
- Major criticisms; major contributions

2. Lev S. Vygotsky

- Role of context in theory construction
- Development of thought and language
- Key generalizations about development
- Related research and applications; new directions
- Major criticisms; major contributions

3. Lawrence Kohlberg

- Role of context in theory construction
- Overview of key ideas
- Stages of moral development
- Related research and applications; new directions
- Major criticisms; major contributions

Unit VII. Contemporary Theories of Human Behavior and Development: Ecological
Perspectives (10)

1. Urie Bronfenbrenner

- Relevance of personal and societal events/contexts in the construction of the theory (primary literature)
- Defining properties of the bioecological model (primary literature)
- Microsystemic influences in development (primary literature)
- Beyond the microsystem (meso-, exo-, macro-systemic influences in development) (primary literature)
- Related research and applications; new directions
- Major criticisms; major contributions

2. David Magnusson and associates (primary literature)

- Role of context in theory development
- Overview of key ideas in person-context interaction theories

- Traditional and contemporary views of the role of environment in development
 - Unidirectional causality
 - Classic interactionism
 - Holistic interactionism
- Principles in the functioning of the person-environment system
- The environment in the person-environment system
- The person in the person-environment system
- Adaptive, maladaptive, and protective factors in the person-environment system
- Related research and applications
- Major criticisms; major contributions

Unit VIII Contemporary Theories of Human Behavior and Development: Life Span Approaches (9)

1. Glen H. Elder (primary literature)
 - Role of context in theory development
 - Overview of key ideas with regard to life course theory
 - Social pathways and the individual life course (primary literature)
 - Trajectory, transition and duration (primary literature)
 - Human agency in choice-making and actions (primary literature)
 - Constructing one's life course (primary literature)
 - Related research and applications
 - Major criticisms; major contributions
2. Paul B. Baltes and associates (primary literature)
 - Role of context in theory development
 - Life-span theories: key concepts and five levels of analysis including the following
 - Life-span development
 - Development as selection/specialization and selective optimization in adaptive capacity
 - Development as gain/loss dynamic
 - Plasticity
 - Ontogenetic and historical contextualism
 - Related research and applications
 - Life-span theory and cognitive development
 - Life-span theory and development of self and personality
 - Major criticism; major contributions

Unit IX. Contemporary Theories of Human Behavior and Development: Other Systemic Approaches (9)

1. Seymour Wapner and associates (primary literature)
 - Role of context in development of Holistic, Developmental, Systems-Oriented Perspective
 - Key ideas in Wapner's Holistic, Developmental, Systems-Oriented Perspective
 - Organismic and transactional worldviews
 - Organism-in-environment system and levels of integration

- Holism
- Equilibration tendencies
- Aspects of persons and of environments (structural and dynamic)
- Process versus achievement
- Constructivism
- Multiple worlds
- Adaptation
- Research and related applications
- Major criticisms; major contributions

2. Esther Thelen and Linda B. Smith (primary literature)

- Role of context in development of Dynamic Systems Theories
- Key ideas in Dynamic Systems Theories
 - Replacing the mind-as-computer or the machine metaphor
 - A mountain stream as a root metaphor
 - A Dynamic Systems Approach to development
 - The brain as a dynamic collective
 - Experience-dependent plasticity
- Research and related applications
- Major criticisms; major contributions

Unit X. Contemporary Theories of Human Behavior and Development: Other New Approaches

(9)

1. Jochen Brandtstädter (primary literature)

- Role of context in development of action theories
- Key ideas in Action Theories of development
- Personal regulation of developmental processes
- The concept of action
- Developmental plasticity
- Intentional self-development and personal control over development
- Research and related applications
- Major criticisms; major contributions

2. Peter L. Benson and associates (primary literature)

- Role of context in theory development
- Positive Youth Development Theory: Key ideas
- Research and applications
- Major criticisms; major contributions

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- Bronfenbrenner, U. (1980). *The ecology of human development*. Chicago: University Press.
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M.Sc. I (HOME SCIENCE)
BRANCH II: HUMAN DEVELOPMENT
ADVANCED STUDY OF COUNSELLING AND PSYCHOLOGICAL TESTING
(THEORY)

Marks : 50

Objectives:

1. To have students develop insights with regard to the counselling process, various counselling approaches and applications.
2. To have students construct advanced knowledge with regard to various psychological tests.
3. To sensitize students to the ethics and current issues in counselling and psychological testing.

Course Content:

NOL

Unit I Introduction and overview of counselling

(9)

- a) Concept of counselling
- b) Core conditions of a helping relationship
- c) Key characteristics of an effective counsellor
- d) General Model for Counselling/Process of counselling (General Model for Counselling)
- e) Skills Used In Counselling
 - Problem exploration and clarification (attending, active listening, accurate empathy, client disclosure and exploration)
 - Developing new perspectives and setting goals (summarizing, information giving, advanced empathy, confrontation, immediacy, goal setting)
 - Action (helping clients identify possibilities/ programmes, implementing and evaluating the same)

Unit II A. Counselling approaches in Individual/Group Counselling

(10)

- (a) Insight oriented (Psychoanalytical, Client Centered, Play Therapy, Gestalt) and Action oriented (Behavioural, Rational Emotive Behavioural Therapy, Reality Therapy, Transactional Analysis, Solution – Focused Brief Counselling, Bibliotherapy)
- (b) Specialized areas in counselling (Child/school counselling; marriage, family and sex counselling; gerontological counselling; career counselling; health counselling.)

Unit II B. Current issues in counselling; Latest trends in counselling

(4)

Unit III A. Overview of the Field of Psychological Testing

(4)

- (a) Characteristics of Psychological Tests (Concepts of Reliability, Validity, Item Analysis, Test Construction, Test Administration)
- (b) Major contexts of current test usage (e.g., Role of tests in counselling)

Unit III B. Contemporary Issues In Test Use

(4)

- Ethical and Professional issues
- Selection of appropriate tests
- Relevance of diagnosis in counselling
- Reporting psychological assessment
- General issues in using tests with special groups

- Testing and the law
- Future of psychological testing

Unit IV Assessment in Education and/or Counselling Settings

(14)

- Assessment of Child Adjustment
- Assessment of Self-esteem/Self-perceptions
- Assessment of Social Maturity and Social Competence
- Assessment of Intelligences, Cognitive Styles, Creativity
- Assessment of Personality
- Achievement Testing
- Assessment of Aptitude; assessment for the purpose of Vocational Guidance
- Current issues; latest trends

Unit V Assessment in the Clinical and Healthcare Setting

(5)

- Projective tests in clinical practice
- Introduction to types of assessment in Healthcare settings (e.g., Test Anxiety Questionnaire, Life Experience Survey, Measures of Coping, Measures of Social Support, Marital Quality Scale, Assessment of Quality of Life.)
- Current issues; latest trends

References:

- Anastasi, A & Urban, S. (2002). *Psychological testing* (7th edition) Delhi: Pearson Education (Singapore) Private Limited.
- Capazzi, D & Cross, D. (1989). *Counselling and psychotherapy : Theories and interventions* (2nd edition) New Jersey : Prentice Hall.
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- Egan, G. (2002). *The skilled helper: A systematic approach to effective helping* (7th edition). Pacific Grove, Ca: Brooks/Cole
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- Patterson, L.E; & Welfel, E.R. (2000). *The counselling process*. California: Brooks/Cole
- Van Zandt, Z; & Hayslip, J. (2001). *Developing your school counselling programme. A handbook for systematic planning*. Pacific Grove, Ca: Brooks/Cole
- Watkins, C.E. & Cambell, V.L. (2000). *Testing and assessment in counselling practice* New Jersey: Lawrence Erlbaum.

M.Sc. I (HOME SCIENCE)
BRANCH II: HUMAN DEVELOPMENT
ORGANIZATIONAL BEHAVIOUR AND ASSESSMENT
(THEORY)

Marks : 50

Objectives:

1. To help students understand the application of psychology in an organizational set-up.
2. To familiarize students with the individual, group, and organizational perspectives of organizational behaviour.
3. To expose them to the measures for assessing organizational effectiveness.
4. To introduce them to the tests relevant in an organizational set-up.

Course Content :

Unit I. Introduction

- Definition of organizational behaviour,
- Classification of organizations,
- Organizational context, characteristics and culture,
- Significance of organizational behaviour,
- Emerging trends, contemporary challenges, and future prospects

(4)

Unit II. A micro-perspective of organizational behaviour

- The perceptual process and impression formation,
- Personality (self-concept, self-esteem, self-efficacy) and attitude (formation and change),
- Job satisfaction (meaning and influence),
- Motivation (brief review of motivational theories traditional and contemporary),
- Motivating performance through job design (conceptual model of job design and some job redesigning options) and goal setting (impact of goal setting and its application to systematic performance),
- Organizational reward system, steps in organizational behaviour modification, application of behavioural management

(9)

Unit III. The Dynamics Of Organizational Behaviour

(12)

- Role of formal organizational work groups
- Role of informal work groups (nature, significance, types, problems, management) quality circle (definition objectives, structure, performance),
- Team work (definition, significance, types, stages, team building, effectiveness of team work)
- Leadership (significance, traits, skills, emerging theories) supervision (task, extent, status, problems, making it more effective)
- Group dynamics and its implications,
- Conflict in Organisations (intra-individual, inter-individual, inter-group, occupational conflict), approaches to conflict management
- Stress - meaning, nature, causes and effects, burnout- implications and remedies

- Communication - emergence of communication technology, goals of organizational communication, types of communication and communication networks, communication and management, communication in groups, strategies for making communication more effective

Unit IV Organizational Health and Effectiveness

(10)

- Career stages, developmental interventions appropriate for each stage, implementation of successful career management systems, relevance of a mentoring programme in an organization
- Concept of work life - issues, conflict, balance and integration, types and benefits of work life initiatives, importance of family friendly workplace, strategic approaches to work life integration
- Meaning of organizational climate and culture, need for and strategies of organizational change, coping with resistance to change, meaning of, approaches to and reinvention in organizational development, maintaining overall organizational health and effectiveness

Unit V. Assessment in Organisations

(15)

(a) Organizational effectiveness

- The relevance of an assessment center,
- Overview of the essential elements of an assessment center (tools and techniques employed in the assessment center, assessment center schedule, using assessment performance information to improve organizational performance, training assessors in the center, methods employed in assessment like presentation, discussion, role play, demonstration, critical and in basket incident process, case - study method)

(b) Competency Based Interview and Group Discussion Strategies

- Interview styles, approaches, and types,
- Preparation for the interview,
- The art of interview questioning,
- Interview rating scales,
- Points to observe in a group discussion,
- Relevant open ended group discussion questions,
- Interpretation of group discussions

(c) Assessment through Testing

- Categories of psychological tests relevant in an organizational set up,
- Understanding tests (tapping the following areas: personal effectiveness, locus of control, motivational level, interpersonal needs, conflict management styles, role clarity, job satisfaction, emotional quotient, coping with stress, organizational climate and quality of work life)
- Training testers in selecting, administering, scoring and interpreting tests

References:

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- Cushway, B; & Lodge, D (2001). *Organizational behaviour and design*. New Delhi: Crea Publishing House
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M.Sc. I (HOME SCIENCE)
BRANCH II: HUMAN DEVELOPMENT
ECCE PRACTICUM
(PRACTICAL)

MARKS:

75

Objectives:

1. To help students apply theoretical knowledge in practical situations.
2. To enable students to plan, implement and evaluate developmentally-appropriate educational and recreational activities for children.
3. To facilitate the development of classroom management skills in students.
4. To facilitate the development of event management skills in students.

Course Contents :

1. Introduction

Orienting students to various aspects of ECCE placement.
Input sessions on lesson planning, conducting art and craft activities.
Developing skills in creating and composing stories and songs.
Developing skills in creative story-telling.

2. Observation of children

Developing a checklist and using it to observe children in the preschool setting.

3. Individual lessons (On concepts, art and craft activities, games, stories, etc.)

Planning and Implementing of developmentally appropriate lesson plans.
Evaluating Lessons (Self and Peers).
Learning Classroom Management.

4. Small group lessons

Planning and Implementing of developmentally appropriate lesson plans.
Evaluating Lessons.
Learning Classroom Management.

5. Event Management

Planning and organising a Special event for one or more of the following: children, teachers, parents, and grandparents

M.Sc. I (HOME SCIENCE)
BRANCH II: HUMAN DEVELOPMENT
COUNSELLING PRACTICUM
(PRACTICAL)

Marks : 25

Objectives:

1. To facilitate in students a clearer understanding of themselves.
2. To help students develop competencies in the micro skills of counselling and in using different approaches to counselling.
3. To provide an opportunity to students to apply these skills and approaches in an individual setting and/or group setting.
4. To help students develop skills in recording and reporting the counselling process.

Course Content :

1. **Awareness of Self**
 - Understanding Self
 - Identifying issues within self that could affect counselling
 - Translating insights into real-life settings
2. **Microskills in counselling (Part I)**

Developing Basic Counselling Skills (Active Listening, Reflection, Clarifying, Questioning, Summarizing, Goal-Setting, Termination, Referral)
3. **Microskills in counselling (Part II)**

Developing Advanced Counselling Skills (Confrontation, Advanced Empathy, Interpretation)
4. **Approaches to Counselling: Individual and group (Part I)**
 - Solution – Focused Brief Counselling
 - Behavioural Therapy
 - Cognitive Behavioral Therapies (R.E.B.T. and Aaron Beck's Cognitive Therapy)
5. **Approaches to Counselling: Individual and group (Part II)**
 - Transactional Analysis
 - Client-Centered Therapy
 - Gestalt Therapy

Students are expected to:

- a) Participate in self-awareness exercises prior to observing and conducting the counselling sessions.
- b) Observe at least two sessions of individual counselling and one of group counselling (Instructor demonstrates the same).
- c) Conduct two sessions of individual counseling/group counseling. (Instructor observes the same and gives relevant feedback.)
- d) Record and report each of the sessions observed and conducted.
- e) Continuously work on personal issues that could affect the effectiveness of their counselling.

M.Sc. I (HOME SCIENCE)
BRANCH II: HUMAN DEVELOPMENT
PSYCHOLOGICAL TESTING PRACTICUM
(PRACTICAL)

Marks : 25

Objective:

To enable students to acquire competencies in the administration, scoring, and interpretation of selected psychological tests.

Course Content :

1. Assessment of Intelligence, Cognitive Skills, and Creativity
 - a) Wechsler's Intelligence Scale for School Children
 - b) Torrance/Passi's Test of Creativity
2. Developmental Assessment
 - a) Developmental Assessment Scale for Indian Infants
 - b) Bender-Gestalt Test
 - c) Vineland Social Maturity Scale
3. Assessment of personality
 - a) Edward's Personal Preference Schedule :
 - b) Children's Apperception Test
 - c) Myers Briggs Type Indicator
4. Assessment of Aptitude and Interest
 1. Differential Aptitude Test
 - Group Intelligence Test (e.g., NVTI, Otis, etc.)
 - Interest Inventory(Kuder/Strong/Mascarenhas)
5. Assessment of Self-esteem, Self-perception Harter's Self Perception Scales

Students are expected to administer, score and interpret each of the tests on two participants/clients and maintain a file of the same.

M. Sc. I (HOME SCIENCE)
BRANCH III: TEXTILE AND FASHION TECHNOLOGY

Subject	Theory/ Practical	Internal Marks	University Marks	Total Marks	Periods/ Week (of One hour each)	Univer sity exam hours	Internal/ External
Global Marketing Merchandising & Entrepreneurship	Theory	25	75	100	4	3	Both
Fiber Science	Theory	25	75	100	4	3	Both
Physical and Chemical Textile Testing	Practical	10	40	50	4	4	Both
Apparel Design and Production (Paper I)- Woven	Practical	10	40	50	3	4	Both
Pattern Making and Grading	Practical	10	40	50	3	4	Both
Fashion Illustration	Practical	10	40	50	3	4	Both
Research Methods and Statistics	Theory	25	75	100	4	3	Both
Practicum in Research Methods	Practical	50	--	50	3	--	Internal
TOTAL				550			

N. B.:

- Students are expected to complete an internship in an industry set-up for 3 to 4 weeks during vacations
- Subject theoretical input to be supported with field visits

M. Sc. I (HOME SCIENCE)
GLOBAL MARKETING, MERCHANDISING AND ENTREPRENEURSHIP
(THEORY)

Marks : 100

Objectives:

1. To equip students with the knowledge of the fashion world.
2. To provide knowledge of international trade.
3. To impart knowledge of marketing and merchandising.
4. To enhance entrepreneur skills.

Course Content:

NOL

- Unit I** International Fashion and Textile Design (5)
- a) Language of Fashion and definition namely Fashion Cycle, Forecast, Fashion Movement, and Fashion Shows.
 - b) Creation & Development - Line planning, design sketch, Inspiration (Mood boards Events, Issues, Life style, Personality), First samples, strike-offs.
 - c) Design and other organizational issues- Factors affecting creativity and innovation, factors influencing success and failure in product development
- Unit II** a) Ecology and Ethics- 'Green' fashion and textiles design, human rights issues and off-shore production considerations for foreign contractor production.
b) Leading International Designers and their Labels
- Unit III** , Fashion Retailing (8)
- a) Managing the fashion retail business- Managing fashion retail operations; retail accounting and control, retail organization and retail human resources management.
 - b) Understanding fashion consumers and their buying behavior.
 - c) Merchandise planning, buying and control. Fashion retail marketing mix strategies; retail image and branding.
 - d) Fashion diffusion and adoption; relationship to consumers' fashion choice. Service quality: importance to fashion retailing;
 - e) Recent trends and strategies of fashion retailers: franchising, e-tailing, globalization of retail business.
- Unit IV** Information Technology for Merchandising of Textiles & Clothing Industries (8)
- a) E-commerce: B2B and B2C E-commerce
 - b) Database -applications in textile and clothing industries.
 - c) Application of Artificial Intelligence techniques and Simulations in textiles and clothing industries

- Unit V** Fashion Merchandising Planning & Control (8)
- Organizing for Fashion Merchandising
 - Merchandising in Indian and International clothing industry. Structure of merchandising function, Roles and responsibilities of merchandisers in the trading and manufacturing sector.
 - Merchandising Planning & Control
 - Quality Assurance in Merchandising of Textiles & Clothing
 - Impact of changing economic, legal-political, social-cultural, technological and international environment on quality management.
 - Management strategies for quality; organization design for quality management, requirements in multi-plant and multinational situations.
 - Quality systems in textile and clothing organization for review, Internal and external quality audits.
- Unit VI** Fashion Global Marketing and Brand Management (8)
- Introduction and Overview- Issues surrounding
 - Study of Global Brands- Brand globalization and challenges of rapidly changing market factors for product success.
 - Brand Positioning: Market and Consumer Analysis, Distribution, Strategy- The market launch and its promotion, merchandising for a profit viz. Sales, Turnover, N.P. Costing P/L, Accounts, Direct/Indirect Expenses, and Terms of sale.
- Unit VII** Fashion buying (8)
- Interpreting customers demand
 - Developing a fashion image.
 - Buying in Domestic and Foreign market.
 - Visual Merchandising
- Unit VIII** Supply Chain Management in Fashion and Textiles (8)
- Supply Chain Management in Fashion and Textiles
 - Concepts and principles of supply chain management (SCM): Supply chain management decisions, Planning, implementing and controlling
 - Information and technology in supply chain management: SCM enabling technologies: EDI, EPOS, item coding, EFT, activity based costing, etc. The applications of the information and technology for the SCM in the fashion industry.
 - Marketing decisions: product management strategy, pricing strategy, and promotion strategy. Sourcing decisions: value analysis, options, priority and criteria. Logistics decisions: transportation strategy, warehousing strategy and inventory strategy.
 - Developing and maintaining supply chain relationships
 - A conceptual Model of Strategic Alliance/Strategic Network.

Unit IX

Market Research

(8)

- a) Market research, inclusive of consumer trends, market analysis, target customer profiles, fashion trend research, fabric and trim research, associated resources.
- b) International Business in Fashion Industry
- c) General environment and trade pattern
- d) The global environmental forces affecting the international textile and clothing bodies and policies; GATT--WTO.
- e) Trade protectionism: sentiments in world textile and clothing trade; voluntary export restraint and multi-fiber arrangement (MFA); MFA phasing out and related problems; tariff and non-tariff barriers; certificate of origin; anti-dumping issues; the textile quotas system.
- f) Globalization of fashion business
- g) Internationalization of clothing business; licensing, franchising and sub-contraction; outward processing arrangement (OPA); multinational corporations and foreign direct investment of textile and clothing joint ventures and wholly-owned setups; strategic alliances; evaluation of investing host countries; potential markets for fashion business.

Unit X

Entrepreneurship – Skills, Advantages, Disadvantages.

(6)

References :

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M. Sc. I (HOME SCIENCE)
BRANCH III: TEXTILE AND FASHION TECHNOLOGY
FIBRE SCIENCE
(THEORY)

Marks : 100

Objectives:

1. To study the morphology, chemical constitution and manufacturing processes of natural and manmade fibers.
2. To study physical and chemical properties and end uses of cellulosic, proteinic and synthetic fibers.
3. To introduce students to the different concepts essential in understanding the building up of the macromolecule.
4. To understand how various factors of polymerization affect the properties of fibers.
5. To acquaint them with recent developments in the field of fibers.

Course Content:

Unit I.	Classification of fibers and definition.	NOL (3)
Unit II.	Relationship between chemical constitution of fibers and their properties.	(4)
Unit III.	Polymerization: a) Classification of polymers. b) Building up of macromolecules by polymerization. c) Addition and condensation polymerization. d) Graft and block polymerization.	(9)
Unit IV.	Determination of molecular weight: a) Molecular weight of polymers. b) Degree of polymerization. c) Number average and weight average molecular weight. d) Methods of determining molecular weight.	(8)
Unit V.	Cellulose fibers: a) Chemistry of cellulose-chemical composition and constitution, reactivity of different hydroxyl groups, oxy-cellulose and hydrocellulose, estimation of the extent of degradation. b) Morphology, fine structure, properties, and varieties of cellulosic fibers. (Cotton, Jute and Flax including Indian varieties)	(4) (6)

Unit VI.	Proteinic fibers:	(4)
	a) Chemistry of proteins- chemical composition and constitution of amino acids, functional groups, properties conferred by the nature of substituents.	
	b) Morphology and histology of wool and silk, types of bonds present in wool (including Indian varieties) and silk, properties.	(6)
Unit VII.	Regenerated cellulosic fibers:	
	a) Raw materials, manufacturing process, physical and chemical properties of regenerated fibers.(viscose rayon, acetate rayon, cuprammonium rayon, modal, high tenacity viscose, lyocell and polynosic fibers)	(4)
	b) Chemically modified cellulose (primary and secondary acetate rayon).	(4)
Unit VIII.	a) Manufacturing process, properties, uses and modification of various synthetic fibers (nylon 6, nylon 66, polyester, acrylic, modacrylic, elastomeric carbon, glass PVC, PVA etc.)	(7)
	b) Blends currently used based on synthetic and natural fibers.	(3)
Unit IX	Ecological concerns in manufacturing and processing of natural & manmade fibers.	(4)
Unit X.	Recent developments in natural, regenerated and synthetic fibers.	(5)

References:

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M. Sc. I (HOME SCIENCE)
BRANCH III: TEXTILE AND FASHION TECHNOLOGY
PHYSICAL AND CHEMICAL TEXTILE TESTING
(PRACTICAL)

Marks : 50

Objectives:

1. To impart knowledge of the physical and chemical properties of textiles.
2. To teach the techniques of testing properties of textile materials.

Course Content:

1. **Physical Testing**
 - a) Fiber testing: Fiber length.
 - b) Yarns and their characteristics: Yarn twist, yarn count.
 - c) Fabrics and their characteristics: fabric weight, fabric count, water permeability, durability (pilling and abrasion), thin layer, crease recovery chromatography, tear/tensile (CRT) strength, flammability (demonstration)
2. **Pretreatment, dyes and dyeing.**
 - a) Dyes and their properties: Scouring and bleaching of gray fabric.
 - b) Dyeing of fabric with direct, reactive (hot and cold), azoic, vat, acid and basic dyes using padding mangle, jigger dyeing machine as per their application and suitability.
 - c) Testing of dyed samples/solution (colorimeter, spectrophotometer) and color fastness evaluation (bleaches, crocking, laundering, light, perspiration, heat/pressing).
 - d) Dye identification on cellulosic and proteinic fabric.
3. **Chemical testing: Qualitative and quantitative analysis of blends.**
4. **Titration: single and double titration (acid-base), hardness of water percent availability of chlorine in bleach solution, other oxidation based method.**
5. **Journal with experiments and samples.**

References:

- Angappan, P. & Gopalkrishnan R. (1993). Textile Testing. S.S.M. Institute of Technology.
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M. Sc. I (HOME SCIENCE)
BRANCH III: TEXTILE AND FASHION TECHNOLOGY
APPAREL DESIGN AND PRODUCTION PAPER I (WOVENS)
(PRACTICAL)

Marks : 50

Objectives:

1. To familiarize students with special techniques of apparel making.
2. To acquaint students with the art of handling different materials and patterns.

Course Content:

1. Identification, analysis and selection of different types of fabrics for particular end-uses.
2. Placement of drafts on fabric and its cutting
3. Construction of garments using plackets (Kurta, double shirt placket/Continuous Kurta), collars (Reversible/Chinese (shawl and danton), yokes (T-/ U-/Straight) and gussets (simple/ sleeve/ strip), pockets (side seam pocket/velt pocket/ bound pocket/ front pant pocket) zips (with seam/ invisible zip/ zip with fly).
 - (a) Choli
 - (b) Kurta/Angarakha
 - (c) Salwar/Churidar
 - (d) Western outfit/Party-wear
 - (e) Leg-wear
 - (f) Bathrobe
4. Finishing and packaging
5. Journal and presentation

References:

- Aldrich, W. (1994). *CAD in clothing and textiles*. (2nd Ed.). Oxford: Blackwell Science.
- Armstrong, H. (1986). *Pattern making for fashion designing*. New York: Harper Collins
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- Goulbourn, M. (1971). *Introducing pattern cutting, grading and modeling*. London: B.T. Batsford.
- Graff, J. L. (1976). *Concepts in clothing*. New York: McGraw Hill.
- Kaiser, S. B. (1985). *The social psychology of clothing*. New York: Macmillan
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- Minott, J. (1978). *Fitting commercial patterns*. Minneapolis: Minnesota Burgess.
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M. Sc. I (HOME SCIENCE)
BRANCH III: TEXTILE AND FASHION TECHNOLOGY
PATTERN MAKING AND GRADING
(PRACTICAL)

Marks : 50

Objectives:

1. To acquaint students to advanced techniques of designing and making patterns for different styles of clothing for women.
2. To adapt constructed blocks to the given patterns and grading according to different sizes.

Course Content:

1. - Anthropometric measurements & Grading
- Basic Block Construction:
 (a) Adult's Basic Block
 (b) Adults Basic Sleeve
 (c) Torso block
2. Drafting and adapting patterns (along with draft instructions and markings) using displacements and concealments of darts.
3. Drafting of yokes, gathers and pleats for upper and lower garments
4. Drafting of collars (Shirt, Reversible, Shawl, Danton, Chinese)
 Drafting of sleeves (Dolman, Raglan, Kimono, Magyar)
5. Journal and Presentation

References:

- Aldrich, W. (1996). *Fabric Form and flat pattern cutting*. Oxford: Blackwell Science.
- Aldrich, W. (1997). *Metric pattern cutting men's wear*. Oxford: Blackwell Science.
- Armstrong, H. J. (1986). *Pattern making for fashion designing*. New York: Harper and Row
- Braddock, S. F. (1998). *Techno-textiles: revolutionary fabrics for fashion and design*. London: Thames and Hudson
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M. Sc. I (HOME SCIENCE)
BRANCH III: TEXTILE AND FASHION TECHNOLOGY
FASHION ILLUSTRATION
(PRACTICAL)

Marks : 50

Objectives:

1. To enhance the creative skills of drawing, sketching and rendering colours for designing garments and accessories based on themes.
2. To enhance the creative skills of drawing, sketching and rendering colours for designing accessories based on themes.

Course Content:

1. Drawings:
 - a) Normal Figure, fashion figure
 - b) Face drawing, nose figure drawing (3), leg figure (3), hand figure (3), hairstyles (3) and accessories (footwear, bags, jewellery headgears).
 - c) Poses (10)
2. Postures dressing up the croqui as per the following ensemble (minimum 3 per line); casual wear, formal wear, fusion wear, winter wear, sports wear, night wear, maternity wear, beach wear, lingerie, party wear (Indian/Western), theme garment designing (using rendering techniques like sfumato, graphito, resist layering etc. and media and material like lead pencil, color pencil and crayon, stippling, water and poster colors, mixed medium, use of prints, fabric rendering, etc.)
The above ensembles to include designs in sleeves, collars, necklines, bodices, lingerie, bifurcated wear, outer wear, winter wear, jackets, dresses and gowns
3. Flats working sketches with specification sheets.
4. Demonstrations in computer applications for fashion illustration.
5. Portfolio & Journal

References:

- Kybalova, L. (1968). *Pictorial encyclopedia of fashion*. London: Hamlyn.
- Mackrell, A. (1997). *An illustrated history of fashion and 500 years of fashion illustration*. (1st Ed.). London: B.T. Batsford.
- McKelvey, K. (1996) *Fashion source book*. Oxford: Blackwell Science
- McKelvey, K. (1996) *Illustrating fashion*. Oxford: Blackwell Science.
- Neady, F. (1958) *Fashion drawing*. New York: Rotman.
- Ogawa. Y. (1990). *Colour in fashion: a guide to coordinating fashion colours*. Bombay: India Books.

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**M.Sc. I (HOME SCIENCE)
COMMON PAPER: ALL BRANCHES
RESEARCH METHODS AND STATISTICS
(THEORY)**

Objectives:

Marks : 100

1. To help students develop the skills needed in conducting a research in their specialisation.
2. To promote academic, research and professional ethics in students.
3. To introduce students to principles of good scientific writing.
4. To enable in students the skills in selecting, computing, interpreting and reporting statistics.

Course Content:

RESEARCH METHODS

NOL

Unit I A. Introduction and Overview

- (a) What is a research? (6)
- (b) Objectivity and subjectivity in scientific inquiry: Premodernism, modernism, and postmodernism
- (b) Steps in the research process
- (c) Importance of research in general, and in each discipline.
- (d) Illustration of research in each of the three specialisations: Foods, Nutrition, and Dietetics; Human Development; and, Textile and Fashion Technology
- (e) Qualitative versus quantitative research

Unit I B. The beginning steps in the research process

- (a) Identifying broad areas of research in a discipline (4)
- (b) Identifying interest areas; using multiple search strategies
- (c) Prioritising topics; specifying a topic; feasibility
- (d) Review of literature/scholarly argument in support of study
- (e) Specifying research objectives/hypotheses/questions

Unit II A. Variables

- (a) Definition (6)
- (b) Characteristics
- (c) Types
- (d) Levels of measurement

Unit II B. Measurement

- (a) Conceptual definitions and operational definitions (4)
- (b) Types of validity and reliability in quantitative research

Unit III A. Research designs in quantitative research
Distinguishing between the following research designs; and, selecting research designs that are congruent with one's research purpose. (6)

- (a) Longitudinal versus cross-sectional
- (b) Experimental versus quasi-experimental versus correlational
- (c) Exploratory versus descriptive versus explanatory

Unit III B. Sampling techniques in quantitative research (5)

- (a) Probability and nonprobability sampling methods
- (b) Sampling methods in current use/examples from current research
- (d) Issues with regard to sampling techniques

Unit IV A. Data entry in quantitative research (5)

- (a) Codebook and mastersheet
- (b) Creating data files and data management:
 - Rows=cases, columns=variables, matrix of cells
 - Naming variables
 - Numerical versus string format of variable values in data file
 - Specifying variable information (Variable labels, value labels, and missing values)
 - Resequencing variables or cases; recoding variables; constructing new variables

Unit IV B. Qualitative research methods (6)

- (a) Ideology/worldview of the qualitative researcher
- (b) Research designs in qualitative research
- (c) Sampling techniques in qualitative research
- (d) Data collection methods in qualitative research
- (e) Data analytic strategies in qualitative research
- (f) Reporting of results in qualitative research

Unit V A. Scientific writing (4)

- (a) Distinguishing scientific writing from popular and literary writing styles
- (b) Characteristics/principles of scientific writing (avoiding plagiarism; use of citations, quotations, a reference list or a bibliography; writing from an outline, sectioning the document/using headings and subheading; avoiding redundancy; avoiding ambiguity; avoiding jargon)
- (c) Examples of good scientific writing
- (d) Writing a research proposal
- (e) Reporting statistical findings in text

Unit V B. Ethics (4)

- (a) In academia
- (b) In research in general
- (c) In research with human subjects
- (d) In research with animal subjects

STATISTICS

Unit VI A. Introduction and overview

- (a) Role of statistics in (quantitative) research
 - (b) Definition/changing conceptions
 - (c) Prerequisite concepts in mathematics (e.g., properties of the summation sign, basic algebra)
- (4)

Unit VI B. Descriptive Statistics for summarizing nominal level variables

- (a) Frequency (also known as a count)
 - (b) Raw frequencies vs. relative frequencies
 - (b) Percentages (how, when, and why)
 - (c) Barcharts and piecharts
- (2)

Unit VII A. Descriptive Statistics for summarizing ratio level variables

- (a) Frequencies and percentages
 - (b) Computing an average/measure of a central tendency
 - Mean
 - Median
 - Mode(s)
 - Contrasting the mean vs. median
 - Computing an average when there are outliers or extreme values in the data set
 - Robust measures of the center (5% trimmed mean; M estimators)
 - Quartiles and percentiles
 - (d) Computing a measure of variability or dispersion
 - Why? (inadequacy of the mean)
 - Minimum value and maximum value
 - Range
 - Interquartile range
 - Variance and standard deviation
 - (e) Discrete and continuous variables
 - (f) Histograms and line graphs
- (10)

Unit VII B. Descriptive Statistics for summarizing interval level variables

- (a) Frequencies and percentages
 - (b) Mean, median, standard deviation with some decoding
 - (c) Actual range vs. theoretical range
- (1)

Unit VII C. Descriptive Statistics for summarizing ordinal level variables

- (a) Frequency and relative frequency per ascending category
 - (b) Mean and median with decoding
 - (c) Barcharts with bars with ascending categories on the x axis
- (1)

Unit VIII A. Probability: Foundation of Advanced/Inferential Statistics

- (a) Definition
- (b) Role of probability in research and statistics
- (c) Elementary concepts in probability
 - Sample space, experiment, event/outcome/element of the sample space
 - Equally likely outcomes and the uniform probability model
 - Stabilization of the relative frequency

(6)

Unit VIII B. Other concepts needed for the use of advanced/inferential statistics

- (a) Types of distribution
 - Frequency distribution
 - Normal distribution
 - Probability distribution
 - Sampling distribution
- (b) Type I and type II errors
- (c) Central limit theorem
- (d) Point estimation vs. interval estimation
- (e) Standard error (and confidence intervals)
- (f) Parametric and nonparametric methods

(5)

Unit IX A. Using an advanced statistical method (the following is done

vis-à-vis any one statistical method first and then re-applied henceforth)

(4)

- (a) Writing the research aim/identifying the research aim (research objective or research question or research hypothesis)
- (b) Identifying the level of measurement of each of the variables involved
- (c) Selecting and justifying the use of a test procedure
- (d) Seeing/clarifying whether test assumptions are met
- (e) Computing the observed value
- (f) Contrasting the observed value with the critical value and declaring test results
 - Level of significance (p values)
 - Meaning
 - Cut-offs (in various disciplines)
 - Interpreting and reporting significance
 - Nonsignificant vs. insignificant
- (g) Describing the results (ensuring that relevant descriptive statistics are also reported; manner of reporting advanced statistics)
- (h) Discussing the results (explanation of findings; corroboration with past theory and research; implications for research, theory and/or practice)

Unit IX B. To study statistics that allows us to contrast phenomena

(8)

- (a) Univariate chi-square test
- (b) Bivariate chi-square test
- (c) t- or z- test for contrasting two independent groups
- (d) Paired t-test
- (e) ANOVA

Unit IX C. To study statistics that allows us to examine relationships between variables
(a) Bivariate chi-square test (2)
(b) Product-moment correlation coefficient

Unit X A. Ethics in the use of statistics (e.g., the importance of test assumptions, the number of statistical tests in a research and levels of significance) (2)

Unit X B. Demonstration of computer software such as the Statistical Package for the Social Sciences (SPSS) (5)

- (a) Data entry
- (b) Data Management
- (c) Descriptive Statistics

References:

- Shattacharyya, G.K., & Johnson, R. A. (1977). *Statistical concepts and methods*. NY: John Wiley.
- Dwivedi, R. S. (1997). *Research methods in behavioral sciences*. Delhi: Macmillan India.
- Gravetter, F. J., & Waillnau, L. B. (2000). *Statistics for the behavioral sciences*. Belmont, CA: Wadsworth/Thomson Learning.
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- Leong, F.T.L., & Austin, J. T. (Eds.) (1996). *The psychology research handbook*. New Delhi: Sage.

**M.Sc. I (HOME SCIENCE)
COMMON PAPER: ALL BRANCHES
PRACTICUM IN RESEARCH METHODS
(PRACTICAL)**

Marks: 50

Objectives:

To provide students with opportunities for hands-on exercises with regard to many steps of the research process, such that they have met the prerequisites for Dissertation in M.Sc.II.

Course Content:

1. Preliminary steps in the research process: using multiple search strategies
 - a) identifying broad areas of research in one's specialization (identifying leading scholarly journals, reading the tables of contents, articles in which areas are solicited in each such journal, scanning dissertation topics, identifying focus areas with regard to dissertation topics, changes in dissertation topics over the years, interviewing academicians/researchers/ practitioners, Net search)
 - b) identifying priority areas of research in one's specialization
 - c) identifying areas of personal interest (selecting any one dissertation, summarizing this dissertation, justifying the selection of this dissertation; selecting any one research article from a reputed scholarly journal, summarizing this research, justifying the selection of this research article; interviewing one local expert; communicating with one national or international expert in one's area of interest using e-mail)
 - d) visits to research centers in Mumbai (relevant to one's specialisation)
2. Preliminary steps in the research process: the review of literature and statement of purpose
 - a) studying the review of literature in various dissertations and research articles and identifying key features of the content of literature reviews
 - b) studying the manner in which the purpose is stated in dissertations and research articles
 - c) developing skills in paraphrasing (i.e., rewriting ideas in own words) and avoiding plagiarism (due acknowledgement to original source)
 - d) developing skills in formulating research objectives, questions and hypotheses
 - e) developing skills in writing and orally communicating a literature review and statement of research purpose
3. Middle steps in the research process: the methods, examining and evaluating the methods used to accomplish a stated research aim using examples from various dissertations and research articles both in writing and orally, in particular, the:
 - a) research designs (e.g., qualitative, quantitative)
 - b) sampling techniques, sample sizes, and sample characteristics
 - c) data collection/measurement
 - d) plan of analysis

4. Latter steps in the research process: results, discussion, and references

- a) examining key features of the results section of dissertations and research articles
- b) using analyzed data to write the results (making tables, making figures, scientific protocol in communicating statistical findings in text, qualitative research and thick description)
- c) examining key features of the discussion section of dissertations and research articles (corroboration, explanation, implications, and recommendations)
- d) using various findings sections and writing the discussion of the findings

5. Reviewing, summarizing, and evaluating the complete research article in writing (maintaining a research journal) and orally (developing professional skills in presentation of a research). Developing holistic skills in:

- a) identifying exemplary research literature
- b) summarizing exemplary research dissertations or research articles
- c) evaluating exemplary research dissertations or research articles
- d) presenting a research

Note: Students can conduct pilot research studies or organize a research conference as part of this course as well.

University of Mumbai



**Revised Syllabus for the
M.Sc. (Part II)
Degree Course
In
Home Science**

(With effect from the academic year 2009 – 2010)

BRANCH I : FOODS, NUTRITION & DIETETICS

Course Outline

Subject	Theory/ Practical	Internal Marks	University Exam Marks	Total Marks	Periods Per week (of one hour each)	University Exam hours	Internal/ External
Advances in Human Nutrition	Theory	15	60	75	3	2 ½	Both
Clinical Nutrition & Therapeutic Dietetics- Paper II	Theory	15	60	75	3	2 ½	Both
Public Health Nutrition	Theory	10	40	50	2	2	Both
Management - Manpower & Marketing	Theory	10	40	50	2	2	Both
Therapeutic Dietetics	Practical	10	40	50	3	3	Both
Dissertation	Practical	75	75	150	10		Both
Total				450			

M.Sc II (HOME SCIENCE)
BRANCH I : FOODS, NUTRITION & DIETETICS
ADVANCES IN HUMAN NUTRITION.
(THEORY)

Marks: 75

Objectives:

1. To understand the influence of nutrition on human growth and development.
2. To study about the nutritional requirements and adaptations by the human body.
3. To get an insight in to the role of Nutrition for fitness and sports.
4. To update knowledge in the area of human Nutrition.

Course Content :

		NOL
Unit I	A) Contemporary issues in macronutrient metabolism and regulatory nutrients i.e. water and fat soluble vitamins and minerals.	(7)
	B) Nutritional requirements – Proteins, energy (energy metabolism) vitamins and minerals	(8)
	- determination of nutrient needs	
	- RDA for Indians	
	C) Nutritional requirements for special conditions	(5)
	- Extreme climatic conditions	
	- Space Nutrition	
	- Calamities, disorders and emergencies	
Unit II	A) Nutritional adaptations -	(8)
	- underlying mechanism	
	- Biochemical basis for adaptation	
	- Long and Short term adaptation	
	- Adaptation in chronic, severe under nutrition and over nutrition.	
	- Metabolic consequences of starvation.	
	B) Growth and development	(7)
	- General aspects of Human Growth	
	- Cellular and physical growth.	
Unit III	Nutrition and the Brain	(10)
	- Nervous system and Nerve Cell	
	- Nutrient precursors of neuro transmitters.	
	- Nutrition and behaviour	
Unit IV	- Effect of under nutrition on neuronal development.	
	Nutrition and Physical fitness.	(11)
	- Basic components of energy formation during exercise.	
	- Interrelationship of Carbohydrates, Protein and lipid metabolism	
	- Biochemical assessment of physical exertion	
	- Effect of nutritional status on physical performance.	

- Ergogenic aids.
- Eating disorders among athletes
- Role of water, electrolytes, vitamins & minerals in physical fitness

Unit V Complementary Nutrition & Other components with health relevance. (18)

- Bioactive Dietary Components
- Nutraceuticals and Functional foods
- Phytochemicals
- Carotenoids
- Plant sterols
- Polyphenolics
- Phytoestrogens
- Polyols
- Prebiotics and probiotics
- Dietary Supplements
- Vitamins and minerals
- Natural Health products
- Moderate and megadosing

References :

- Benordot, D (1999) Nutrition for serious athletes and advanced guide to foods, fluids and supplements for training and performance champaign IL. Human Kinetic.
- Grodd, J.L. and Gropper, S.S. (1999) Advanced Nutrition and human metabolism. Belmont CA Wodworth/Thomson learning.
- Judith E. Broch (1998) Nutrition Now, West/wadsworth International Thomson Pub. Co.
- Williams, Cand devlin, T.J. (1992) Foods Nutrition and Sports performance E and N Sposs I Ed.
- Goodhart R.S.S and Shils, M.E 91998) Modern nutrition in health and disease. Philadelphia Lea and Febiger.
- Stipanuk Martha H. 2006 Biochemical, physiological, molecular Aspects of human Nutrition – Saunders ELSEVIER.
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M.Sc II (HOME SCIENCE)
BRANCH I : FOODS, NUTRITION & DIETETICS
CLINICAL NUTRITION AND THERAPEUTIC DIETETICS - PAPER II
(THEORY)

Marks: 75

Objectives:

1. To provide students with an overview of the physiology and functions of different organ system.
2. To expose students to the nutritional care process, the role of a nutritionist and the methods employed in nutrition provision and intervention.
3. To impart an indepth knowledge regarding prevalence, etiology, diagnosis, pathophysiology, drug nutrient interactions, gene – nutrient interactions and medical, nutritional and lifestyle management in different disease conditions.
4. To enable students to focus on : advancements in clinical nutrition, emerging modes of therapy and intervention and ongoing research in the field.
5. To emphasise the role of nutrition in the prevention of chronic disease.

All diseases (acute and chronic) will be discussed with reference to the following topics:-

- Physiology and functions of the organ system.
- Etiology, risk factors, Diagnosis, classification, Pathophysiology.
- Management - Medical
 - o Nutritional Lifestyle and exercise
 - o Surgical (wherever applicable)
- Drug - nutrient interactions
- Gene nutrient interactions
- Advances and trends in research in the disease conditions.
- Available supplements and nutraceuticals – a study of dosage and efficacy.

Course Content :

NOL

Unit I. Nutrition and the Gastrointestinal System and accessory organs:-

(25)

- Dental health and Nutrition
- Esophagitis and GERD
- Gastritis
- Gastroparesis
- Peptic ulcers
- An overview of diarrhoea, steatorrhoea, constipation and flatulence.
- Gluten induced enteropathy
- Lactose intolerance
- Inflammatory bowel Disease
- Short bowel syndrome
- Irritable bowel syndrome
- Diverticulitis and hemeroids
- Liver:- Affect of alcohol on the liver and nutritional status.
- Hepatitis
- Cirrhosis (Alcoholic and Non-alcoholic)

- Hepatic Encephalopathy.
- Liver transplant
- (a) Wilson's disease

Gall Bladder:-

Physiology and function of the gall bladder/ management of diseases of gall bladder.

Pancreas : Physiology & functions of the pancreas

- Acute and chronic pancreatitis
- Pancreatic cancer.

Unit II. Nutrition and Renal Disorders:-

- Glomerular Nephritis (Acute & Chronic) (12)
- Nephrotic Syndrome
- Acute Renal failure
- Chronic renal failure with special emphasis on dialysis – process and nutritional management.
- Renal transplant
- Renal Calculi

Unit III. Nutrition and Cancer

- Etiology and molecular basis of neoplasia (11)
- Assessment of nutritional status
- Medical, surgical and nutritional management.
- Nutritional support
- Nutrition and prevention of cancer.

Unit IV. Nutrition and Bone health:

- Nutrients involved in bone health (7)
- Osteoporosis and Osteomalacia
- Osteoarthritis
- Gout
- Rheumatoid Arthritis

Unit V. Nutrition and haematological disorders

a) Principles of Nutrition in the following diseases (6)

b) Nutrition in Inborn Errors of Metabolism (7)

- Principles of genetic disease management.
- Diseases of :
 - amino acid metabolism (Phenyl ketoneuria, Tyrosinemia, Branched chain amino acids, sulphur containing amino acids)
 - Urea cycle enzyme deficiencies
 - Galactose enzyme deficiencies
 - Defects of oxidation
 - Nutrition and retinyl degradation.

- c) Nutrition and the Nervous system & Psychiatric disorders:
- Neurological disorders associated with Vitamin deficiencies and excesses. (7)
 - Role of Nutrition in prevention and management of:
 - Alzheimer's disease
 - Parkinson's Disease
 - Cerebral Palsy
 - Senility
 - Schizophrenia and psychosis

References:

- Gibney J.M.,(2005). Clinical Nutrition Blackwell Publishing House.
 King K. (2003). Nutrition Therapy 2nd ed. Helm Publishing, Texas
 Bendich.A (1997). Preventive Nutrition Humana Press
 Burke .L (2006). Clinical Sports Nutrition 3rd ed. Mc Graw Hill Co
 Mc Ardle.W (2005). Sports and Exercise Nutrition, 2nd ed. Lippincot Williams and Wilkins
 Peckenpaugh .N (2003). Nutrition Essentials and Diet Therapy. 9th ed. Saunders Pub Co.
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 Brown .J. (2002). Nutrition Through The Lifecycle. Wadsworth Pub Co.
 Jamison .J. (2003). Clinical Guide To Nutrition and Dietary Supplements in Disease Management Churchill –Livingstone Pub.
 Jeejeebhoy et al (1988) Nutrition and Metabolism in Patient Care W.B.Saunders CO.
 Lee. R.D. (2003) Nutritional Assessment 3rd ed. M c Graw Hill Pub.
 McCormic .d.(1999) Annual Review of Nutrition vol 19 &20. Annual Reviews , California.
 Mahan .K.L.(2008) Krause's Food and Nutrition Therapy Saunders Pub.
 Garrow .J.S (1993) Human Nutrition and Dietetics 9th ed.Churchill Livingstone Pub.
 Shills. M. (2006) Modern Nutrition in Health and Disease.10th ed.Lippincot William and Wilkins
 ICMR Pub. (2000) Nutrient Requirement and Recommended Dietary Allowances for Indians
 Gopalan .C.(2000) Nutritive Value of Indian Foods. NIN ICMR Pub.
 Whitney .C. (2006) Understanding Normal and Clinical Nutrition. Wadsworth publication
 Sauberlich .H (1999) Laboratory Tests for the Assessment of Nutritional Status 2nd ed. CRC Press

Journals :

Nutrition Reviews
 American Journal of Clinical Nutrition
 Journal of American Dietetic Association.
 Journal of Nutrition

M.Sc II (HOME SCIENCE)
BRANCH I : FOODS, NUTRITION & DIETETICS
PUBLIC HEALTH NUTRITION
(THEORY)

Marks : 50

Objectives :

To enable students to

1. increase awareness about current and emerging issues in Public Health Nutrition.
2. Apply their knowledge to solve nutrition – related health problems.
3. Appreciate and critically evaluate the impact of research on the practice of public health nutrition.

Course Content :

NOL

Unit I. (A) An overview of Public health Nutrition

(2)

- Definitions
- The Public health nutrition cycle

(B) Nutrition Epidemiology

(4)

- Types of studies
- Study design
- Measuring exposure
- Measuring outcomes and associations
- Interpretation of associations

Unit II. Assessment of the Nutrition Status of Individuals and Populations.

(4)

- Dietary assessment
- Use of biomarkers for assessing the nutritional status
- Anthropometric and other clinical measures.
- Errors in assessment of nutritional status.

Unit III. (A) Public health Nutrition Strategies for Intervention at the Ecological level.

(4)

- Definition of the Ecological Approach
- Key Principles
- Intervention
- Guidelines for using the ecological approach to design nutrition interventions.
- Ecological interventions to change eating habits.

(B) Public Health Nutrition Strategies for Intervention at the Individual Level.

(8)

- Possible approaches
- Theoretical models for behaviour change
- Key steps involved in planning, implementing and evaluating an intervention.

Unit IV (A) Dietary Guidelines

- Dietary goals versus dietary guidelines
- Quantitative and Qualitative dietary guidelines.
- Steps involved in devising dietary guidelines.

(8)

(B) Food Choice

- Population issues affecting food choice
- Individual issues affecting food choice.

(2)

Unit V. (A) Public health Issues

- (a) study of the following with greater emphasis to the current Indian context.
- (b) Nutrition and Reproductive health
- (c) Maternal nutrition and foetal outcome
- (d) Underweight and obesity
- (e) PEM
- (f) Vitamin A deficiency and child health, survival and vision
- (g) Iodine deficiency
- (h) Iron deficiency and anemia
- (i) Zinc Deficiency
- (j) HIV and micronutrient nutrition
- (k) Diarrhea
- (l) Cancers
- (m) Diabetes
- (n) Heart disease

(12)

(B) National Goals and Policies

6

Nutrition Related health Goals
Immunisation schedules

National Nutrition Policy – a summary of important aspects.

An overview of plans and services (local, state, national and international)

Initiatives for prevention of disease eg. Water and air-borne diseases, osteoporosis and hip fracture.

References:

- Gibney, M.J. Margetts, B.M., Kearney, J.M. and Arab, L. (eds) (2004). Public health Nutrition. The Nutrition Society Blackwell Science. Oxford.
- Jelliffe, D.B. (1966). The Assessment of the Nutritional Status of the community WHO Geneva.
- Lee, R.D. and Nieman, D.C. (2003). Nutritional Assessment 3rd ed. McGraw – Hill Higher education. New York.
- Nutrient Requirements and recommended dietary Allowances for Indians. (1990) ICMR, New Delhi.
- Sachdev, H.P.S. and Choudhary, P (eds). (1994). Nutrition in Children-Developing country Concerns, B.I. Publications Pvt. Ltd. New Delhi.
- Sainani, G.S. (ed-in-chief) (1992), A.P.I. textbook of Medicine 5th ed. Association of Physicians of India Mumbai.

M.Sc. II (HOME SCIENCE)
BRANCH I : FOODS, NUTRITION & DIETETICS
MANAGEMENT – MANPOWER AND MARKETING
(THEORY)

Marks : 50

Objectives:

1. To help enhance personal & professional performance
2. To make facilitate better administration & management skills

Course Outline:

NOL

Unit I

Developing and Managing Human Resources
An overview of:

(10)

- Job Analysis
- Job Design
- Job Evaluation
- Manpower Planning
- Recruitment and Selection
- Orientation and Induction
- Performance Appraisal
- Leadership and Motivation
- Self Awareness
- Training and Development
- Compensation and Reward
- Group Dynamics: Grievance Management, Conflict Resolution
- Human Resource Audit

Unit II

Marketing and Marketing Management Process
A brief exposure to:

(8)

- Meaning and Importance of Marketing
- Marketing Mix – elements, factors influencing marketing mix.
- Market Research
- Consumer Behaviour
- Market Segmentation
- Supply Chain Management

Unit III

a. Financial issues: An overview of:

(8)

- Budgeting
- Concepts of Cost: Fixed & variable cost, marginal cost, opportunity cost, break even analysis
- Sources of finance
- Auditing
- Evaluation parameters

- b. Quality Management
 - Approaches to quality improvement
 - Tools used in the process
 - Issues for quality improvement
 - Standards of quality in food industry
- (8)

- Unit IV. Entrepreneurship in food service** (6)
- Starting a business
 - Legal requirements
 - Skills & Knowledge needed
 - Planning strategies for marketing products

- Unit V. a. Managing Information:** (6)
- The need for Information.
 - String and retrieving Information
 - Information in Interviews and Meetings
 - Making presentations
 - Writing reports

- b. Ethics and Social responsibility:** (4)
- Meaning
 - Responsibilities of internal & external beneficiaries

References:

- Agarwala, T. (2007). Strategic Human Resource Management Oxford University Press – New Delhi.
- Aswathappa, K. (2005). Human Resource and Personnel Management – Text and Cases Tata McGraw – Hill Publishing Co. Ltd. New Delhi.
- Boyd, H.W. Walker, O.C. and Larreche, J. (1995). Marketing Management – A Strategic Approach with a global Orientation 2nd ed. Irwin Chicago.
- Cartwright, R. Collins, M, green, G and candy, A (2001). The Handbook for Managing resources and Information Infinity books, New Delhi.
- Ivancevich, J.M. Donnelly, J.H and Gibson, J.L. (1996). Management – Principles and functions 4th ed. All India Traveller Bookseller. Delhi.
- Kale, N.G. () Principles and practice of Marketing. Vipul prakashan – Mumbai.
- Kotler, P. (2003). Marketing Management 11th ed. Pearson Education (Singapore) Pte. Ltd. Delhi.
- Rao, V.S.P. (2005) Human Resource management – text and cases 2nd ed. Excel Books. New Delhi.
- Shookla, M.S. (2004). A Handbook of Human relations (with structured experiences and Instruments). Macmillan India Ltd. Delhi.
- Singh, P.N. (1998). Developing and Managing Human resources. 3rd ed. Suchandra Publications. Mumbai.

M.Sc. II (HOME SCIENCE)
BRANCH I : FOODS, NUTRITION & DIETETICS
THERAPEUTIC DIETETICS
(PRACTICALS)

Marks: 50

Objectives :

To provide a detailed practical aspect to the clinical conditions studied in theory
To enable students to:

1. Analyse the given case
2. Obtain a nutritional diagnosis
3. Propose a nutrition plan for the patient
4. Prepare the selected meal
5. Evaluate the suggested diet plans

Course Content :

1. Planning a normal diet for different age groups and lifecycle conditions and modifications of the normal diet for texture.
2. Weight Management and Eating disorders
 - Obesity Overweight
 - Juvenile obesity Anorexia Nervosa
 - Bulimia Binge eating disorders
 - PEM
3. Diabetes Mellitus
 - Type I for different age groups
 - Type II with complications of obesity , hypertension ,hyperlipidemias
 - Gestational DM
4. Cardio vascular diseases.
 - Hypertension, hyperlipidemias with associated complications
 - Metabolic syndrome
 - Myocardial infarction
 - Congestive cardiac failure
 - Cardiac bypass surgery
 - Diet and lifestyle management for prevention of cardiovascular incidents.
5. Enteral Nutrition Strategies:
Naso gastric,nasoduodenal,naso jejunal, gastrostomy, jejunostomy,and illeostomy feeds.
6. Dietary strategies in infections
 - HIV
 - Tuberculosis

- Malaria, Dengue
- Food borne infections

7. Pulmonary diseases

- Asthma
- COPD
- Chronic Bronchitis
- Cystic Fibrosis

8. Gastro intestinal diseases

- Esophagitis and GERD
- Gastritis
- Peptic ulcers
- Gluten induced enteropathy
- Lactose intolerance
- Inflammatory bowel Disease
- Irritable bowel syndrome
- Diverticulitis
- A discussion on elimination diets

9. Diseases of the liver, gall bladder and pancreas

- Hepatitis
- Cirrhosis (Alcoholic and Non-alcoholic)
- Hepatic Encephalopathy.
- Wilsons disease
- Cholecystitis-acute and chronic
- Cholelithiasis
- Acute and chronic pancreatitis

10. Renal diseases

- Glomerular Nephritis (Acute & Chronic)
- Nephrotic Syndrome
- Acute Renal failure
- Chronic renal failure on conservative management, haemo and peritoneal dialysis.
- Renal transplant
- Renal Calculi

11. Diet in cancer

- Oral cancer
- Esophageal cancer
- Hepatic carcinoma
- A detailed discussion on side effects of chemo and radiation therapy

Gastric cancer

Colon cancer

Pancreatic cancer

12. Diet in hypercatabolic state
 - Burns Trauma
 - Sepsis(SIRS,MODS)
 - Surgical conditions
 - All conditions will be discussed considering the possible complications of hyperglycaemia and ARF.
- 13.. Diet in bone and haematological disorders

References:

- Gibney J.M.,(2005). Clinical Nutrition Blackwell Publishing House.
- King K. (2003). Nutrition Therapy 2nd ed. Helm Publishing,Texas
- Bendich.A (1997). Preventive Nutrition Humana Press
- Peckenpaugh .N (2003). Nutrition Essentials and Diet Therapy. 9th ed. Saunders Pub Co.
- Blackwell Scientific Publication (1994). Manual Of Dietetic Practice.2nd ed.
- Brown .J. (2002). Nutrition Through The Lifecycle. Wadsworth Pub Co.
- Jamison .J. (2003). Clinical Guide To Nutrition and Dietary Supplements in Disease Management Churchill –Livingstone Pub.
- Jeejeebhoy et al (1988). Nutrition and Metabolism in Patient Care W.B.Saunders CO.
- Lee. R.D. (2003). Nutritional Assessment 3rd ed. M c Graw Hill Pub.
- Mahan .K.L.(2008). Krause's Food and Nutrition Therapy Saunders Pub.
- Garrow .J.S (1993). Human Nutrition and Dietetics 9th ed.Churchill Livingstone Pub.
- Shills. M. (2006). Modern Nutrition in Health and Disease.10th ed.Lippincot William and Wilkins
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- Gopalan .C. (2000). Nutritive Value of Indian Foods. NIN ICMR Pub.
- Whitney .C. (2006) Understanding Normal and Clinical Nutrition. Wadsworth publication
- Sauberlich .H (1999) Laboratory Tests for the Assessment of Nutritional Status 2nd ed. CRC Press

M. Sc. II (HOME SCIENCE)
BRANCH II: HUMAN DEVELOPMENT

Subject	Theory/ Practical	Internal Marks	Univer- sity Marks	Total Marks	Periods /Week (of One hour each)	Univer- sity Exam Hours	Internal/ External
Advances in Research in Human Development	Theory	25	75	100	4	3	Both
Human Exceptionality and Psychological Disorders	Theory	25	75	100	4	3	Both
Advanced Family Studies	Theory	10	40	50	2	1.5	Both
Supervision and Administration in Human Development Agencies	Practical	50	--	50	3	--	Internal
Dissertation	Practical	75	75	150	10	--	Both
TOTAL				450			

M.Sc. II (HOME SCIENCE)
BRANCH II: HUMAN DEVELOPMENT
ADVANCES IN RESEARCH IN HUMAN DEVELOPMENT
(THEORY)

Marks : 100

Objectives:

1. To expand the vision we hold of human development and the systems within which it occurs.
2. To create insights about human existence, both what is and what can be.
Thus, to reflect on life as fashioned currently and explore alternatives.
3. To facilitate an understanding of the following:
 - (a) the different aspects of human development that receive scholarly attention;
 - (b) the extent to which they are studied using a developmental framework;
 - (c) theoretical, methodological and substantive changes in conceptualizations over the years/recently;
 - (d) the inter-relationships between theoretical, methodological and substantive content and issues; and,
 - (e) the changes in explanations of human development over the years.
4. To examine alternative explanations of human development (e.g., by philosophers, theologians, religion, spirituality).
5. To reflect on the writings of exemplary researchers/scholars.
6. To hone scientific reading, analytical, and writing skills.

Course Content:

NOL

Unit I: Introduction and Overview
Orientation to the course

(14)

Academic Perspective

(a) Meaning of Development

Key issues inherent in definitions of development

(b) Understanding that the course is an advanced study of Human Development/ Developmental Psychology

(c) Understanding that the course will introduce the student to advancements in the field of Human Development/Developmental Psychology; differentiating between theoretical, methodological and substantive advancements.

(d) Understanding the relative and brittle nature of scientific truth. Processes and outcomes that characterize advancements in a(ny) science.

Alternative Perspective: Processes that explain advancements in science

Units II to IV: History/Nature of Advancements in Human Development/Developmental Psychology; Principles of Development (Parts 1, 2 & 3)

(30)

Academic Perspective

The field of Human Development/Developmental Psychology

History; nature of advancements/paradigmatic shifts

Principles of development
Issues in the study of development
What characterizes development? How does human development proceed?
(preformation versus epigenesis, mechanistic versus organismic explanations, structure-
function relationships, canalization, continuity versus discontinuity, resilience, plasticity,
novelty/change/transformations/flexibility, recapitulation/acceleration versus
deceleration, multiplicity/plurality of pathways, role of context in development,
indivisibility of developmental influences)
Conceptual models (direct and indirect effects; proximal and distal effects; full mediation
versus partial mediation)

Alternative perspective: Principles characterizing development and life in general
Part I: H. Stevenson; R. Cairns & B. Cairns
Part II: J. Piaget; Reese and Overton; Sameroff
Part III: G. Gottlieb; R. Lerner; Mohanty and Prakash

Unit V: Physical Development and Motor Development

Issues in physical development and motor development: Academic perspective (8)
(a) Evolutionary theory and human development; the evolution of human childhood
(b) Advances in the study of motor development

Alternative perspective: Deceleration

Unit VI: Gene-Environment Contributions in Human Development

Gene-environment contributions: Academic perspective (11)
Advancements in understanding gene-environment contributions in human development
The nature-nurture debate
Review of basic genetic principles; intelligence and gene-environment contributions; how
people make their own environments; separating the inseparable; the indivisibility of
reality

Alternative perspective: indivisibility

Unit VII: Cognitive Development and Language Development

Cognitive Development: Academic perspective (12)
Perspectives in the study of cognition and cognitive development, with a special focus on
current perspectives (multiple intelligences, bioecological model of cognitive
development, practical versus academic intelligences); mental abilities and cognitive
styles; issues in the study of cognitive development/intelligence (metacognition, learning
styles)

Alternative perspective

Language Development: Academic perspective

- (a) Current perspectives in the study of language development
- (b) Advancements in the study of bilingualism

Alternative perspective

Unit VIII: Emotional Development

Emotional Development: Academic perspective

(8)

History of the study of emotions; methodological and theoretical advancements in the study of emotions; the development of emotions with a special focus on the socialization of emotions; emotional intelligence

Inter-relationships between emotional, social, cognitive and language developments.

Alternative perspective: what constitutes emotional well-being, process of creating emotional well-being, inter-relationships between emotional, language and cognitive developments

Unit IX: Attachment, Personality, and Self-Conceptions

(10)

Attachment

Definition; theoretical contributions of John Bowlby; the Strange Situation Paradigm and Secure/Insecure Infants; recent advances related to the Strange Situation Paradigm with especial emphasis on facultative adaptations; issues related to narrow versus broad views of the scope of attachment; issues related to the durability versus plasticity of attachment classifications

Personality Development: Academic perspective

What is personality; tenability of personality; personality versus dynamism; the issue of continuity versus discontinuity in personality development

Alternative perspective: Tenability of personality

Self-Conceptions

Development of the self-system versus self-representations; contributions of William James; the looking glass self and Cooley; explanations for the durability of self-representations

Unit X: Other Topics

(7)

Gender Typing, Socialisation, and Aggression: Changes in conceptualization and current perspectives

Role of Religion/Spiritual Development

Advancements in the study of religion/spiritual development in psychology

References:

- Bogin, B. (1990). The evolution of human childhood. *BioScience*, 16-25.
- Bronfenbrenner, U. (2004). *Making human beings human: Bioecological perspectives on human development*. Sage.
- Chopra, D. (1987). *Creating health. Beyond prevention, towards perfection*. Boston: Houghton Mifflin.
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- Hakuta, K., & Garcia, E. E. (1989). Bilingualism and education. *American Psychologist*, 44 (2), 374-379.
- Hanh, T. N. (1975/1991). *The miracle of mindfulness. A manual on meditation*. London: Rider.
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- Krishnamurti, J. (1994). *The flame of attention*. Madras: Krishnamurti Foundation of India.
- Krishnamurti, J. (1979/1997). *Exploration into insight*. Madras: Krishnamurti Foundation of India.
- Kuhn, T. (1970). *The structure of scientific revolutions*. Chicago: The University of Chicago Press.
- Kuhn, T. (2002). *The road since structure: Philosophical essays, 1970-1993, with an autobiographical interview*. Chicago: The University of Chicago Press.
- Mohanty, A. K., & Prakash, P. (1993). Theoretical despairs and methodological predicaments of Developmental Psychology in India: Some reflections. In T. S. Saraswathi & B. Kaur (Eds.), *Human development and family studies in India: An agenda for research and policy*, pp104-121. New Delhi: Sage.
- Mussen, P. H. (Ed.) (1983). *Handbook of child psychology. Volumes I, II, III, and IV*. New York: Wiley.
- Plomin, R., DeFries, J. C., McClearn, G. E., & Rutter, M. (1997). *Behavioral genetics*. New York: W.H. Freeman.
- Reid, J. B. (1993). Prevention of conduct disorder before and after school entry: Relating interventions to developmental findings. *Development and Psychopathology*, 5, 243-262.
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- Wilson, R. A., & Keil, F. C. (Eds.) (1999). *The MIT encyclopedia of the cognitive sciences*. Cambridge, Massachusetts: Massachusetts Institute of Technology (MIT) Press.

M.Sc. II (HOME SCIENCE)
BRANCH II: HUMAN DEVELOPMENT
HUMAN EXCEPTIONALITY AND PSYCHOLOGICAL DISORDERS
(THEORY)

Marks : 100

Objectives:

1. To help students gain knowledge about the different categories of exceptionality and abnormality, their prevalence, causes and prevention.
2. To help students develop an awareness and concern for exceptional individuals, their needs and problems.
3. To give information to the students regarding education, assessment and rehabilitation of exceptional individuals, with special reference to the Indian context.

Course Content in Units :

NOL

Unit I Defining and Differentiating Concepts

(6)

- (a) Definition of terms such as exceptionality, abnormality, handicap, disability, deviance, disorder, developmental pathology, impairment, special needs, differently-abled and challenged.
- (b) Historical perspectives and current views on exceptionality and abnormality.
- (c) Relevance of studying Exceptionality and Abnormality in Human Development.
- (d) Theories and causes of abnormal behaviour
- (e) Classification of exceptionalities and abnormalities
- (f) Perspectives on labelling
- (g) Prevention in general

Unit II Physical and Functional Disabilities

(8)

- (a) Physical Disabilities (Definition, types, characteristics, prevalence, causation, identification, assessment, prevention, rehabilitation services for disabled adults)
- (b) Visual Impairment (Definition, types, characteristics, prevalence, causation, identification, assessment, prevention, rehabilitation services for visually impaired adults)
- (c) Hearing impairment (Definition, types, characteristics, prevalence, causation, identification, assessment, prevention, rehabilitation services for hearing impaired adults)
- (d) Multiple Disabilities

Unit III Gifted and Talented Individuals

(5)

- (a) Definition, concepts and characteristics
- (b) Identification, assessment
- (c) Working with gifted children and gifted adults

Unit IV Developmental and Learning Disorders (Part I)

(12)

- (a) Mental retardation (Definition and classification; prevalence, causation, identification, assessment, prevention, rehabilitation into adulthood)

- (b) Autism (Definition and characteristics; prevalence, causation, identification, assessment, treatment, prevention, rehabilitation into adulthood)
- (c) Schizophrenia (Definition and features; psychiatric symptoms; prevalence, causation; theories; treatment, prevention, rehabilitation)

Unit V Developmental and Learning Disorders (Part II)

- (a) Communication disorders (Definitions of communication, language and speech; Definition and types of communication disorders; prevalence, causation, identification, assessment; prevention, working with children and adults with communication disorders) (14)
- (b) Learning disability (Definition, characteristics and types; prevalence, causation, identification, assessment; prevention, legislation and services (e.g., medical, psychological, and educational).

Unit VI Behavioural disorders

- (a) Attention Deficit Hyperactivity Disorder (DSM-IV defining characteristics, prevalence, causation; impact of family, peers, school, society; treatment, prevention) (10)
- (b) Conduct Problems (DSM-IV defining characteristics, prevalence, causation; impact of family, peers, school, society; treatment, prevention)

Unit VII Emotional Disorders

- (a) Separation Anxiety (DSM-IV defining characteristics, age of onset, prevalence, causation; developmental course, symptomatology; treatment, prevention) (12)
- (b) School Reluctance and Phobia (DSM-IV defining characteristics, age of onset, prevalence, causation; developmental course, symptomatology; treatment, prevention)
- (c) Obsessive-Compulsive Disorder (DSM-IV defining characteristics, age of onset, prevalence, causation; developmental course, symptomatology; treatment, prevention)
- (d) Depression (DSM-IV defining characteristics, age of onset, prevalence, causation; developmental course, symptomatology; theories; significance of depression in young people, adults with depression, treatment, prevention)

Unit VIII Health – Related Disorders (Part I)

- (a) Elimination Disorders – Enuresis and Encopresis (Definitions, characteristics, prevalence, causes, treatment, prevention) (16)
- (b) Eating Disorders – Pica; Rumination; Anorexia; Bulimia; Obesity (Definitions, characteristics, prevalence, causes, treatment, prevention)
- (c) Chronic Illnesses – Diabetes, Asthma, etc. (Definitions, characteristics, prevalence, impact, intervention, hospitalization and care of the dying child and adult)
- (d) Child Abuse and Neglect (Definition and types, prevalence, causes, consequences on psychopathology and adult outcomes, causes, prevention and intervention)

Unit IX Health – Related Disorders (Part II)

(12)

- (a) Substance abuse (Factors influencing excessive drug use, prevalence, management and treatment)
- (b) Terminal Illness – AIDS and Cancer (Characteristics, prevalence, impact, prevention; intervention, hospitalization and care of the dying child and adult)
- (c) Sexual – Gynaecological Problems; Sexually transmitted diseases; Teenage pregnancy (Prevalence, causes, treatment, prevention)

Unit X Human Exceptionality and the Community

(5)

- (a) The parent, teacher and community partnerships
- (b) Guidelines for working with parents of exceptional children and those with psychological disorders.
- (c) Involving the community in advocacy and services for exceptional individuals
- (d) Ethical concerns

References

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M.Sc. II (HOME SCIENCE)
BRANCH II: HUMAN DEVELOPMENT
ADVANCED FAMILY STUDIES
(THEORY)

Marks: 50

Objectives:

1. To introduce the student to the key theories in family studies.
2. To have students reflect on and examine key issues in research in family studies with a special focus on:
 - (a) changing notions of family normality and models of family functioning,
 - (b) marital dyad, and,
 - (c) parent-child relationships.
3. To study the latest trends in family research.

Course Content :

NOL

Unit I: Overview of Family Theories

(10)

Existing family theories, their assumptions, values, propositions, and applications.

Structural/Functionalism Theory

Developmental Theory

Social Exchange Theory

Symbolic Interaction Theory

Conflict Theory

Stress Theory

Family Systems Theory

Feminist Family Theory

Biosocial Theory

Unit II : Family Processes

(8)

Changing families in a changing world: Reconstructing family normality

Models of Family Functioning: Family Function and Dysfunction

Clinical views of family normality, health and dysfunction: Change in perspective from deficits to strengths

Olson Circumplex Model: Cohesion, adaptability and communication

Beavers-Timberlawn Model of Family Competence

Family resilience: Strengths forged through adversity

Unit III : Marital Dyad

(12)

Measurement and Research on Marriages

Conceptualization: Research and theory on the quality and stability of marriage

Marital quality as a measure of dyadic adjustment: Related research

Dimensions of marital quality

Wife employment and marital quality

Marital quality over the marital career

Marital satisfaction
Bases of marital satisfaction among men and women
Self-disclosure and satisfaction in marriages
Childlessness and marital satisfaction
Marital satisfaction over the family life cycle

Marital cohesion
Communication and conflict in marriage
Marital sexuality
Marital types
Marital enrichment

The Process of Divorce
Theory and research related to marital dissolution
The impact of divorce on children and adults: Risk and resilience
Divorce intervention strategies

Unit IV: Parent-Child Relationships

(10)

Conceptual Models
Social mould perspectives: Parents as agents of socialization
Parenting styles and child outcomes
Child effects and reciprocity/Children's agency and mutuality
Extradynamic and Systemic Models: The role of context
Socio-cultural contexts of child rearing

Research Trends

Changing roles of fathers
Parent-child connectedness in adolescence: A super-protector against health and social problems
Parent-child relations in adulthood: Contexts, processes, and products of intergenerational relationships
Models of parent education

Unit V: Special Topics: Current Trends in Family Research

(10)

The Politics of Reproduction and Fertility Control

The social construction of reproduction, including discourses and practices surrounding the body, pregnancy, birth, reproductive technology, and diseases. Ethical issues and social policies affecting women.

Multicultural Families

Advanced study of multicultural (racial, ethnic, social) families. Each group's unique cultural heritage and social environment.

Social Neuroscience

Social Neuroscience: A new field of research focusing on the impact of relationships and social systems on psychological health, physical health, and illness.
Neurophysiological underpinnings of relationship-mind-body interconnections

Betrayal in Marital Relationships
Disclosed and undisclosed affairs in married couples
Interrelationships between jealousy, secrecy and intimacy

References:

- Broderick, C. B. (1993). *Understanding family process: Basics of family systems theory*. Sage.
- Heath, P. (2005). *Parent-child relations: History, theory, research, and context*. Pearson Merrill Prentice Hall.
- Ingoldsby, B. B., Smith, S., & Miller, J. E. (2004). *Exploring family theories*. Roxbury.
- Kuczynski, L. (2002). *Handbook of dynamics in parent-child relations*. Sage.
- Roy, P. K. (2003). *Family diversity in India. Patterns, practices and ethos*. Gyan.
- Saraswathi, T.S., & Kaur, B. (Eds.) (1993) *Human development and family studies in India: An agenda for research and policy*. Vedams.
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- "Beyond the Trauma of Betrayal," the fourth online symposium jointly sponsored by Family Process and PsyBC. is available in archive edition at www.psybc.com.

M.Sc. II (HOME SCIENCE)
BRANCH II: HUMAN DEVELOPMENT
SUPERVISION AND ADMINISTRATION IN HUMAN DEVELOPMENT AGENCIES
(PRACTICAL)

Marks : 50

Objective:

To provide students with training such that, on graduation, they can choose to be administrators and supervisors in human development agencies.

Course Content:

1. To enhance skills in assisting student teachers (trainees) to plan, execute, and evaluate developmentally appropriate activities for children in the following areas:
 - (a) music and movement
 - (b) fine-motor and gross-motor activities (e.g., blocks, manipulatives, outdoor play)
 - (c) transition activities
 - (d) art and craft activities
 - (e) math activities
 - (f) science activities
 - (g) language activities (e.g., picture talk/object talk/circle time/story time)
 - (h) socio-dramatic play
2. To enhance skills in assisting student teachers to plan, execute, and evaluate developmentally appropriate activities for adolescents and adults in the following areas:
 - (a) socially relevant issues
 - (b) personal growth/self-esteem
 - (c) emotional intelligence/spiritual intelligence
3. To assist student teachers in developing skills in relation to the following:
 - (a) sensitivity in interacting with children and other target groups
 - (b) building and enhancing relationships with children and other target groups
 - (c) observation and (rudimentary) assessment of children and other target groups and use in teaching.
 - (d) building a resourceful repertoire of songs, stories, transition activities, and activities enhancing each domain of development.

4. To ensure student teachers' successful participation in teamwork, and, in particular, to assist them in:
 - (a) honoring their own role in the team and respecting other team members and their roles
 - (b) completing tasks in ways that create well-being for each team member including oneself, classmates, student supervisors and teacher supervisors
5. Clarity with regard to knowledge of the following areas is sharpened in this practical:
 - (a) Developmentally-appropriate practice
 - (b) Communication, guidance, and management
 - (c) Professional ethics
 - (d) Administration practices in human development agencies
6. The following skills are targeted and honed in this practical:
 - (a) curriculum development skills
 - (b) observation and evaluation skills
 - (c) skills in role-modeling planning, execution and evaluation of developmentally-appropriate activities
 - (d) communication skills/skills in providing written and oral guidance to a trainee/distinguishing guidance from criticism/using appreciative and constructive feedback
 - (e) skills in fostering own and trainee's self-worth
 - (f) task management and facilitation skills (breaking task into simpler steps; setting and managing deadlines)
 - (g) skills in working with individuals at different levels of an administrative hierarchy
 - (h) professionalism (professional ethics and demeanour)

Methods

This course works in tandem with the T.Y.B.Sc. practicum course entitled *Developmentally Appropriate Practices II*. Thus, the M.Sc. students are divided into two groups; each group works with 15+ T.Y.B.Sc. students and a teacher supervisor.

M.Sc. student supervisors are provided guidance by the teacher supervisor in assisting skill development in T.Y.B.Sc. students. This includes guidance provided (a) separately to M.Sc. student supervisors in sessions where T.Y.B.Sc. students are excluded, as well as (b) during hands-on supervisory experiences with T.Y. B.Sc. students.

References:

- Carter, M., & Curtis, D. (1998). *The visionary director: A handbook for dreaming, organizing, & improvising in your center*. St. Paul, MN: Redleaf Press.
- Cherry, C., Harkness, B., & Kuzma, K. (2000). *Child care center management guide: A hands-on resource*. Torrance, CA: Fearon Teacher Aids.
- Click, P. M. (2004). *Administration of programs for young children*. Thomson Delmar Learning.
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- Sciarra, D. S., & Dorsey, A. G. (2002). *Developing and administering a child care center*. Thomson Delmar Learning.
- Schiller, P. M., & Dyke, P. (2001). *The practical guide to quality child care*. Beltsville, MD: Gryphon House.
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M. Sc. II (HOME SCIENCE)
BRANCH III: TEXTILE AND FASHION TECHNOLOGY

Subject	Theory/ Practical	Internal Marks	University Marks	Total Marks	Periods/ Wk (of one hour each)	University exam hours	Internal/ External
Management and Business Administration	Theory	10	40	50	2	2	Both
Garment Production Technology	Theory	10	40	50	2	2	Both
Textile and Garment Finishing	Theory	10	40	50	2	2	Both
Textile Design and Advanced Computer Application	Practical	10	40	50	3	4	Both
Draping (Woven and Knits)	Practical	10	40	50	3	4	Both
Apparel Design & Production (Paper II)- Knits	Practical	10	40	50	3	4	Both
Dissertation	Practical	75	75	150	10		Both
TOTAL				450			

M. Sc. II (HOME SCIENCE)
BRANCH III: TEXTILES AND FASHION TECHNOLOGY
MANAGEMENT AND BUSINESS ADMINISTRATION
(THEORY)

Marks : 50

Objectives:

1. To enhance personal and professional performance
2. To make students aware and improve administrative and managerial skills.

Course Content:

NOL

Unit I.	Introduction and basic functions of management	(7)
Unit II.	Human resource development: a) Self awareness b) Human Resource Development- Recruitment and selection, orientation, performance appraisal, training and evaluation c) Leadership and motivation d) Conflict management e) Stress management f) Group dynamics including decision making	(13)
Unit III.	Office management- systems and procedures.	(7)
Unit IV.	Finance management: a) Meaning, significance and objectives of finance management. b) Sources of finance. c) Working capital management. d) Tools of finance analysis and planning. e) Budget formulation and Auditing.	(13)
Unit V.	Management of Information Systems: a) Information management- Role, need, and contemporary systems of management. b) Information Technology- Use of computers in administration and research.	(10)

References:

- Arora, S. P. (1980). *Principles of business economics*. Mumbai: Vipul Prakashan.
- Aswathappa, K. (2005). *Human resource and personal management*. Text and cases. (4th Ed.). New Delhi: Tata McGraw Hill Publishing co. Ltd.
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- Prasad, L. and Banerjee, A., (1985). *Management of human resources*. New Delhi: Sterling Publishers Pvt. Ltd.
- Rao, V. S. P. (2005). *Human resource management: Text and cases*. (2nd Ed.). New Delhi: Excel Books.
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- Vaz, M. (1997). *Management and human resource development*. (9th Ed.). Mumbai: Manisha Prakashan.
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M. Sc. II (HOME SCIENCE)
BRANCH III: TEXTILE AND FASHION TECHNOLOGY

GARMENT PRODUCTION TECHNOLOGY
(THEORY)

Marks : 50

Objectives:

1. To enhance personal and professional performance.
2. To make students aware of the industrial performance.
3. To impart the knowledge of the industrial sewing machines equipment and plant layouts.

Course Content:

NOL

Unit I.	Production, management, planning and control. a) Total quality management (TQM) b) Industrial efficiency c) Industrial sickness	(10)
Unit II.	a) Drafts layouts, layering and consumption b) Industrial sewing machines, needles, irons and other equipments.	(10)
Unit III.	Industry Plant layouts- Types followed in Industry with their advantages & disadvantages.	(10)
Unit IV.	Formats and worksheets used in various departments. Cost Sheets.	(10)
Unit V.	Computer technology in garment manufacture	(10)

References:

- Batty, J. (1975). *Industrial administration and management*. (3rd Ed.) London: The English language book society and McDonald and Svans.
- Claire, B. (1981). *The complete book of sewing shortcuts*. New York: Sterling publisher
- Dani, L. M. (1990). *Industrial organization and management*. Bombay: Manan publisher
- Kallal, M. (1985). *Clothing construction*. London: Macmillan Publishing Co. Inc.
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- Mehta Pradir V. (1992) *An Introduction to Quality Control for the Apparel Industry*. ASQC. Quality Press, Marcel Dekker, Inc. Milwackee, New York, Dasel, Hongkong.



M. Sc. II (HOME SCIENCE)
BRANCH III: TEXTILE AND FASHION TECHNOLOGY
TEXTILE AND GARMENT FINISHING
(THEORY)

Marks : 50

Objectives:

1. To study about the chemicals used in textile finishing, along with the essential properties of raw materials used in their manufacture.
2. To study the recent developments in various finishing processes.

Course Content:

NOL

Unit I.	Introduction to and classification of textile auxiliaries, concept of water surface activity, hydrophilic and lyophilic balance.	(7)
Unit II.	Cationic, anionic and nonionic surfactants, soaps.	(10)
Unit III.	Current textile garment finishing in use: Durable press/easy care finishes, water-proof and water repellant finishes, anti-soil and soil release finishes, flame retardant finishes antibacterial and anti-fungal finishes, etc. Various chemicals and method used in obtaining these finishes, their mode and mechanism of reaction, effect on various fabric and fabric properties.	(16)
Unit IV.	Eco concerns of the above finishes.	(10)
Unit V.	Recent developments in textile and garment finishing.	(7)

References:

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- Davidson A. & Milwidsky B. M. (1978). *Synthetic Detergent*. Bombay: The Book Center.
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- Srivastava S. B., Gupta R. K. & Gupta R. (1980). *Household Detergents and Industrial Surfactants*. New Delhi: Small Business.

M. Sc. II (HOME SCIENCE)
BRANCH III: TEXTILE AND FASHION TECHNOLOGY
TEXTILE DESIGNING AND ADVANCED COMPUTER APPLICATION
(PRACTICAL)

Marks : 50

Objectives:

1. To introduce students to the various textile designing concepts through weaving, printing and embroidery for different end uses.
2. To enhance the creativity of students in designing.
3. To introduce students to various advanced textile designing software packages.

Course Content:

1. Woven, printed, and embroidered textile designing (3-4 of each) for various end uses like apparel, accessories and home furnishings and using various repeat units-manual work
2. Western embroidery (Bargello, Cross stitch, Cutwork, Ribbon embroidery, Bead work) sampler-manual work.
3. Creative designing and construction of apparel, fashion accessory and home furnishing (one of each)
4. Demonstrations in Advanced computer aided textile woven and printed designs.
5. Journal and Presentation

References:

- Beginner's guide to silk ribbon embroidery* (1998). (1st Ed.). Kent: Search Press Ltd.
- Cable, S. (1997). *Silk ribbon embroidery*. (1st Ed.). N.Y. The reader's digest association,
- Dalley, T. (1988). *The complete guide to illustration and design: techniques and materials*. New Jersey: Chartwell.
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- Embroidery and cross stitch* (1983) for framing, Tokyo: Ondarisha publisher.
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- Mackrel, A. (1997). *An illustrated history of fashion: 500 years of fashion illustration*. London: B. T. Batsford
- Mellick & Trott. (2002). *Beginner's guide mount embroidery*. Kent: Search Press Ltd.
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- 02 Ondari, *Embroidery*, Book 2 Japan: Olympus family club
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- Winfred, A. (1994) *CAD in clothing and textiles*. (2nd Ed.) Oxford: Blackwell Science Ltd.
- Related software catalogues.

M. Sc. II (HOME SCIENCE)
BRANCH III: TEXTILE AND FASHION TECHNOLOGY
DRAPING (WOVEN AND KNITS)
(PRACTICAL)

Marks : 50

Objectives:

1. To acquaint students with the techniques of draping for woven and knitted fabrics.
2. To design and construct garments using the principles of draping.

Course Content:

1. Basic bodice, torso, dartless sloper and skirt.	References:
2. Displacement and concealment of darts.	Armstrong, H. J.
3. Draping of four patterns including different collars, sleeves and concealments using woven and knitted fabrics. (theme garment)	(2000)
4. Speed Test (4 Garments)	<i>Draping for apparel design</i>
5. Journal and Portfolio	New

York: Fairchild publications.

Cloake, D. (1976) *Fashion design on the stand*. Batsford publication.

Crawford, Connice, A. (1989) *The art of fashion draping*. Fairchild's Publication.

Goulbourn, M. (1971) *Introducing pattern cutting, grading and modeling*. Batsford publication

Mee, J. & Prudy, M. (1987) *Modelling on the stand*. Oxford: BPS Professional Books.

Silberg, L., & Shoben, M. (1992) *The art of dress modeling*. Oxford: Butterworth Heinmann publication.

Stanley, H. (1983) *Modeling and flat cutting for fashion*. Hutchison Education publication.

M. Sc. II (HOME SCIENCE)
BRANCH III : TEXTILE AND FASHION TECHNOLOGY
APPAREL DESIGN AND PRODUCTION (PAPER II)-KNITS
(PRACTICAL)

Marks : 50

Objectives:

1. To familiarize students with special techniques of apparel making with knitted fabrics.
2. To acquaint students with the art of handling different knitted fabrics and styles
3. To acquaint students with the technique and skills of pattern making and stitching.

Course Content:

1. Pattern Drafting
 - a) Child and adults basic block, dartless sloper and sleeves.
 - b) Displacements and concealments of darts.
2. Introduction to the different types of fabrics: viz. warp and weft knits. Calculations for Knits.
3. Theme based designing, flat pattern construction and stitching of knitted garments. (Total 6 garments)
 - a) Night-wear
 - b) Jacket/Vestcoat
 - c) Shirt/T-shirt/Top
 - d) Lingerie
 - e) Leg-wear
 - f) Party-wearFollowing concepts and fundamentals to be included in garments or as samples.
 - a) Concealments
 - b) Sleeves
 - c) Collars & Necklines
 - d) Pockets & Zip attachments (Invisible and with seam).
 - e) Plackets
4. Speed Test Garments (4)
5. Journal and Presentation

References:

- Ajgaonkar, D. B. (1998). *Knitting technology*. Mumbai: Mumbai Universal.
- Aldrich, W. (1994). *CAD in clothing and textiles*. (2nd Ed.) Oxford, Blackwell, Science.
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- Bradley, G. (1954). *Costume design*. (3rd Ed.) Scarnton: International Textbook.
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M.Sc. II (HOME SCIENCE)
COMMON PAPER: FOR ALL THREE BRANCHES
DISSERTATION
(PRACTICAL)

Marks : 150

Objectives:

1. To provide students with an opportunity to conduct independent research in their specialization (i.e., Foods, Nutrition and Dietetics; Human Development; and, Textile and Fashion Technology) under supervision.
2. To encourage students to work in conjunction with relevant industries, institutes, hospitals, schools, etc.
3. To assist students in developing general research skills as well as research skills specific to their specialization.
4. To encourage students to adopt best practices in research.

Course Content:

1. Contacting and communicating with experts (locally, nationally, and internationally) initially and periodically throughout the research process; reading relevant literature (e.g., scientific journals, dissertations, theses, books, literature on the Net); selecting appropriate topics in one's specialization; prioritizing these topics; checking topics for feasibility.
2. Identifying possible focus areas with regard to one topic; specifying one such focus area (using relevant reading and communication with experts); writing research objectives/ questions/ hypotheses; conducting a thorough literature review; presenting a clear and convincing argument in support of the study; writing the first chapter of the dissertation, namely, the *Introduction and Review of Literature*, with due acknowledgement of source of ideas.
3. Specifying variables; defining variables (citing relevant literature); selecting an appropriate research design; making decisions related to sampling; selecting and/or constructing tools, pilot-testing tools; making a plan of analysis; writing the second chapter of the dissertation, namely, the *Methods*, with due acknowledgement of source of ideas; orally defending a research proposal; integrating feedback.
4. Collecting data; entering data (preferably using a computer software programme); conducting preliminary analyses; revising the first two chapters of the dissertation.
5. Analyzing data; interpreting findings; reporting results in figures/tables and text using scientific protocol; writing the third chapter of the dissertation, namely, the *Results*, by research objectives/ questions/hypotheses; orally presenting the results and integrating feedback.

6. Corroborating own findings with those in previous research; explaining findings using relevant literature and communication with experts; discussing implications of findings for practice/ industry/family/society; suggesting recommendations for future research; writing the fourth chapter of the dissertation, namely, the *Discussion*, using appropriate scientific protocol.
7. Writing the fifth chapter of the dissertation, namely, the *Summary*; writing the abstract; revising previous chapters as necessary; completing all other relevant work for the dissertation (e.g., reference list, appendices, table of contents, and list of figures/tables); submitting the dissertation for the viva voce examination.
8. Orally defending the dissertation; integrating feedback into the final document; submitting the completed dissertation (hard copy and soft copy).
9. Using the dissertation to write a research article; submitting the research article (hard copy and soft copy).