

Semester IV

S.No.	Title of the Course/ Course No.	Hours/Week			Marks	Credits
		L	T	P		
1	Advanced Nutrition HSC15401CR	4	0	0	100	4+0+0=4
2	Food Processing & Technology HSC15402CR	4	0	0	100	4+0+0=4
3	Food Processing & Technology (Lab Course) / Dissertation HSC15403CR	0	4	4	100	0+2+2=4
4	Nutrition in Critical Care HSC15404CR	4	0	0	100	4+0+0=4
5	Internship /Dissertation HSC15405CR	0	8	0	100	0+4+0=4
6	Gender and Development HSC15406CR	4	0	0	100	4+0+0=4
7	Training and Development HSC15407CR	4	0	0	100	4+0+0=4
8	Gender and Development (Lab Course) / Dissertation HSC15408CR	0	4	4	100	0+2+2=4
9	Development of Creativity HSC15409CR	4	0	0	100	4+0+0=4
10	Principles of Guidance & Counselling HSC15410CR	4	0	0	100	4+0+0=4
11	Principles of Guidance & Counselling (Lab Course) / Dissertation HSC15411CR	0	4	4	100	0+2+2=4

12	Current & Emerging Concepts in Human Nutrition HSC15412DCE	4	0	0	100	4+0+0=4
13	Food Safety & Quality Control HSC15413DCE	4	0	0	100	4+0+0=4
14	Project Management and Women Enterpreneurship HSC15414DCE	4	0	0	100	4+0+0=4
15	Parenting In Early Childhood HSC15415DCE	4	0	0	100	4+0+0=4
16	Participatory Tools and Methods HSC15416GE	2	0	0	50	2+0+0=2
17	Introduction to Guidance and Counselling HSC15417GE	2	0	0	50	2+0+0=2
18	Introduction to Disabilities HSC15418OE	2	0	0	50	2+0+0=2

Note:- Course Code HSC15401CR is common for both specializations of
Food Science & Nutrition/Dietetics & Clinical Nutrition

ADVANCED NUTRITION

Code: HSC15401CR

CORE

Credits: L 4

Periods/week: 4 Hours

M.M: 100

Objectives:

To enable the students to:

1. Gain knowledge regarding recent advances in Micro and Macro elements, Fat soluble and Water soluble Vitamins.
2. Study various methods of measuring body composition
3. Develop the desire to undertake research.

Contents:

Unit I:

- **Body composition:** Importance, components, Methods of measuring body composition. Wang's five level model of body composition.
- **Energy:** Introduction, Components of Energy Expenditure. Energy Expended in physical activity. Measurement of energy expenditure. Units of measurements, Measuring Human Energy Expenditure, Estimating Energy Requirements.
- **Carbohydrates:** Metabolic Utilization of Carbohydrates, Regulation of Blood Glucose Concentration.

Unit II:

- **Proteins:** Metabolism, Nitrogen Balance. Quality of Proteins . Methods used for evaluating protein quality (amino acid score, PER, BV, NPU).
- **Lipids:** Fatty Acids and Essential Fatty Acid deficiency.
- **Water and electrolytes:**
 - Body water, (Preformed and metabolic water) Functions, Distribution, Requirement, Water Balance. Water Retention and Depletion.
 - Sodium, Potassium, Chloride: Their Absorption, Excretion and Functions.
 - Acid- Base Balance

Unit III:

Macro Elements:

- **Calcium:** Metabolism, Absorption and factors affecting it
Calcium Balance and factors contributing to balance.
- **Phosphorous, Magnesium, Sulphur:** Functions, deficiency and toxicity.

Micro Elements:

- **Iron:** Absorption, Transport, Storage, Excretion, Functions, Deficiency and Toxicity.
- **Copper, Iodine, Manganese, Molybdenum, Zinc, Selenium, Flourine:**
Functions and Deficiency.

Unit IV: Vitamins.

Fat Soluble vitamins :

- **Vitamin A:** Metabolism, functions sources and deficiency.
- **Vitamin D:** Metabolism, functions sources and deficiency.
- **Vitamin E & K:** Metabolism, functions sources and deficiency.

Water Soluble Vitamins:

- **Thiamine: Metabolism, functions, sources and deficiency.**
- **Riboflavin:** Metabolism, functions, sources, and deficiency.
- **Ascorbic Acid:** Metabolism, functions, sources and deficiency.
- **Other water soluble vitamins.**

References:

1. Annual Reviews of Nutrition. Annual Review Inc., California USA.
2. Shils, M.E. Olson, J., Shike, M. and Roos, C. (1998): Modern Nutrition in Health and Disease. 9th Ed. Williams and Williams A. Beverly Co. London.
3. Bodwell, C. E., and Erdman, J. W. (1988): Nutrient interaction Marcel Dekker Inc., New York
4. WHO Technical Report Series.
5. Indian Council of Medical Research. Recommended Dietary Intakes for Indian Latest Recommendation.
6. Whitney, E., & Rady Rolfes, S. (2008). Understanding Nutrition (11th ed). Canda: Wadsworth, Cengage learning.
7. Insel, PEM., Turner, R.E., & Roos D. (2007). Nutrition (3rd ed) Sudnury: Jones & Bartlett Publishers.
8. Mahan, L.K., & Escogh- Sump, S. (2004). Krause's Food Nutrition & Diet Therapy (11th ed). Philadephia Sunders an imprint of Elsevier.

Journals

1. Nutrition Review
2. Journal of Nutrition.
3. American Journal of Clinical Nutrition

FOOD PROCESSING AND TECHNOLOGY

Code: HSC15402CR

CORE

Credits: L 4

Periods/week: 4 Hours

M.M: 100

Objectives:

1. Impart systematic knowledge of basic and applied aspects of food processing and technology.
2. Provide the necessary knowledge of basic principles and procedures in the production of important food products.
3. Orient the students to potential use of various by-products of food industry.

Contents:

Unit I: Principles in Food Processing Operations - thermal, refrigeration, freezing and dehydration.

- **Thermal processing:** Degree of processing or preservation, selecting heat treatments, heat resistance of micro organisms, nature of heat transfer, protective effects of food constituents & types of thermal treatments.
- **Refrigeration:** Refrigeration, cool storage and shelf life extension; cool storages with air circulation humidity, control and gas modification.
- **Freezing:** Changes during freezing, rate of freezing, choice for final temperature for frozen foods, freezing effects & freezing methods.
- **Dehydration:** Food dehydration, water activity and food safety/quality & methods of dehydration.

Unit II: Principles in Food Processing Operations, Ionizing Radiation, Chemical Preservation and Fermentation.

- **Ionizing radiation:** Forms of radiant energy, ionizing radiation's, sources and properties, radiation units, radiation's effects, limiting indirect effects, objectives and food irradiation, safety and quality of irradiated food, irradiation of various foods and comparison with other methods of preservation.
- **Chemical Preservation:** By sugar, salt, curing, smoke, acid and chemicals. Chemical changes in foods that affect texture, flavour, colour, nutritive value, during handling and processing.
- **Fermentation:** Benefits.

Unit III: Processing Technology of Foods and Nutritional Implications for Cereal and Pulses, Fruits and Vegetables.

Cereals and Pulses

- **Wheat grain:** Characteristics & products, wheat milling products.
- **Maize:** Varieties, milling
- **Barley :** Production and composition, milling and malting
- **Rice:** Production, structure, composition, parboiling, milling, cooking & nutritive value & rice products.
- **Pluses:** composition, processing, elimination of toxic factors, fermentation and germination.

Fruits and Vegetables

- **Fruits:** Structure, composition, changes during ripening and storage.
- **Fruit processing:** Citrus fruits, apple juices and grape juice. Canning of fruits.
- **Fruit based beverages and concentrates:** Ketchups, sauces, squashes, jams, jellies and marmalades.
- **Vegetables:** Structure, composition, harvesting, post harvest practices and processing of vegetables.

Unit IV: Processing Technology of Foods and Nutritional Implications for Milk and Milk Products, Meat, Fish and Eggs, Fats & Oils, Spices and Food Additives.

Milk and Milk Products.

- **Milk processing:** Clarification, separation, pasteurization, standardization & homogenization.
- **Milk products:** Fortified, skimmed & concentrate milks, cream, butter, cheese, cultured milk products, dehydrated milk products & ice creams.
- **Indigenous milk products:** khoa, paneer, curd, yoghurt, ghee, mallai & rababri.

Meat, Fish and Egg, Fats and Oils, Spices and Food Additives.

- **Meat:** Ageing, tenderizing, curing, smoking, freezing, and storage of meat.
- **Fish:** Preservation and processing, (freezing, canning, inspection and grading).
- **Egg:** Frozen, storage and dehydrated egg powder.
- **Fats and oils:** Processing
- **Major spices of India:** Processing, composition and uses.
- **Food Additives:** Definition, need broad classification.

References:

1. Gould, G.W. (1995), *New Methods of Food Preservation*, Blackie Academic & Professional, London.
2. Connor, J.M. and Schick W.A. (1997), *Food Processing An Industrial Powerhouse in Transition*, John Wiley and Sons, New York.
3. Stadelman, W.J. and Cotterill, D.J. (1986), *Egg Science and Technology*, AVI Publishing Co., INC., Westport.
4. Arthey, D. and Ashurst, P.R. (1996), *Fruit Processing*, Blackie Academic & Professional, London.
5. Phillips, R.D. and Finley J.W. (1989), *Protein Quality & Effects of Processing*, Marcel Dekker, INC. New York.
6. Inglett, G.C. and Munet, L. (1980), *Cereals for Food and Beverages*, Academic Press, New York.

7. Jelen, P. (1985), Reston Publishing Co., INC, A Prentice-hall Co., Virginia.
8. Hirasa, K and Takemasa, M. (1998), Spice Science and Technology, Lion Corporation, Tokyo, Japan.
9. Kalp, K. Lorenz, K. and Brummer, J. (1995), Frozen and Refrigerated Doughs and Batters, American Association of Cereal Chemists INC. St. Paul, Minnesota.
10. Von Loesecke, H.W. (1998), Food Technology Series: Drying and Dehydration of Foods, Allied Scientific Publishers.
11. Matz, S.A. (1996), Bakery Technology and Engineering, Third Edition, CBS Publishers, New Delhi.
12. Fellows, P.J. (2000), Food Processing Technology: Principles and Practice, Second Edition, CRC Woodhead Publishing Ltd, Cambridge.
13. Hosney, R.C. (1996), Principles of Cereal Science and Technology, Second Edition, American Association of Cereal Chemists, St. Paul, Minnesota.
14. Salunkhe, D.K. and S.S. Kadam (1995), Handbook of Fruit Science and Technology: Production, Composition, Storage and Processing, Marcel Dekker INC. New York.
15. Askar, A., Freptor, H. (1993) Quality Assurance in Tropical Fruit Processing, Springer-Verlag, Berlin.
16. Oliveira, A.R., Oliveira, J.C. (1999), Processing Foods Quality Optimization and Process Assessment, CRC Press, Boca Raton.
17. Peter Fellows (ed) (1997), Traditional Foods: Processing for Profit, Intermediate Technology Publications, London.
18. Harris, R.S. and Karmas, E. (1975), Nutritional Evaluation of Food Processing, AVI Publishing Co., Westport, Connecticut.
19. Fabriani, G. and Lintas, C. (1988), Durum Wheat-Chemistry and Technology, American Association of Cereal Chemists, Inc.
20. Fennema, O.R., Powrie, W.D., Marth, E.H., Low-Temperature Preservation of Food and Living Matter, Marcel Dekker INC. New York.
21. Tannerbaum, S.R., Nutritional and Safety Aspects of Food Processing, Marcel Dekker INC. New York.

22. Van Beynum, G.M.A. and Roels, J.A., Starch Conversion Technology, Marcel Dekker INC. New York
23. Ting, S.V. and Rouseff, R.L., Citrus Fruits and Their Products: Analysis and Technology.
24. Mathews, R.H., Legumes: Chemistry, Technology and Human Nutrition, Marcel Dekker INC. New York.
25. Kokini, J.L., Ho, C.T. and Karwe, M.V., Food Extension Science and Technology, Marcel Dekker INC. New York.
26. Potter. Norman N., Hotchkiss Joseph H, (5th Edition) Food Science, CBS publishers and distributors Darya Ganj, New Delhi
27. Kallia Manoranjan, Sood Sangeeta , food preservation and processing, Kaliyani Publishers.
28. Desrosier, Norman W. Dessoser N. James 4th edition, The technology food preservation. CBS, Publishers and distributors.
29. Shakuntala Manay, Shadaksharaswami, M. Food Facts and Principles, New Age International Private Limited

FOOD PROCESSING AND TECHNOLOGY(LAB COURSE)
/DISSERTATION

PRACTICAL (P2)

Code: HSC15403CR

CORE

Credits: P2

Periods/week: 4 Hours

M.M(Pract) 50

1. Thermal processing - canning and bottling of fruits and vegetables.
2. Freezing of meat to study the effect on acceptability and nutritive value. (Restricted to Protein)
3. Dehydration and sun drying of one seasonal fruit and comparison of acceptability and nutritive value of fresh and dehydrated products. (Restricted to Vitamin-C & Sugar)
4. Dehydration and sun drying of one seasonal vegetable and comparison of acceptability and nutritive value of fresh and dehydrated products. (Restricted to Vitamin-C & Sugar)
5. Re-hydration of dried vegetables and observing effects of preservation on acceptability .
6. Preparation and preservation of fruit squash.
7. Preparation and preservation of jam and jelly of one seasonal fruit.
8. Preparation and preservation of pickle.
9. Preparation and preservation of tomato ketchup and tomato sauce.

10. Compare the cost of products made in the lab with those of commercial products of similar quality.
11. Preservation of different food by using different preservatives (Salt, sugar, vinegar, sulphur and dioxide).
12. Procuring a list of food processing units in government and private sector. (Urban/Rural)
13. Visit to a food processing unit and submitting a report.

DISSERTATION (T2)

Code: HSC15403CR

Credits: T2

CORE

Periods/week: 4 Hours

M.M(Tutot) 50

- To undertake an independent piece of research work on an issue of contemporary concern that contributes to the advancement of knowledge in the field of Food Science and Nutrition/any other topic related to this field.
- The student will be guided and supervised by a member of the teaching faculty of the Institute. However, the dissertation in which the research culminates should reflect the student's own work.

NUTRITION IN CRITICAL CARE

Code: HSC15404CR

CORE

Credits: L 4

Periods/week: 4 Hours

M.M: 100

Objectives:

1. To understand the method of nutritional screening and nutritional assessment procedures.
2. To know about different methods of feeding for critically ill patients.
3. To know about the nutritional and special diet requirements in critical care.

Contents:

Unit I: Procedures of Nutritional Screening and Nutritional Status Assessment of the critically ill

Nutritional Screening

- Planning nutritional care
- Concept of screening, aims and objectives, explanation of the term screening, case finding and diagnostic tests.
- Uses, Types, Criteria of screening.

Nutritional Assessment

- Assessment procedure - Body weight in relation to height, Estimation of energy stores, estimation of somatic protein-circumference of mid-arm muscle. Clinical observation and dietary assessment.

Unit II: Conventional feeding method of Nutritional Support for Critically ill Patients.

- Conventional feeding
- Purpose of modified diets.
- Types of diets - Routine diets, modified diets, test diet, quantitative and qualitative diets.
- Increasing nutrient intake.
- Adaptation for individual characteristics- vegetarianism, cultural factors.
- Summary of routine hospital diets.

Unit III: Tube, Parenteral and Transitional methods of nutritional support for critically ill patients

Tube feeding:

- Types, Characteristics of an ideal tube feeding.
- Nutritional related problem in the tube-fed patients.

Parenteral Feeding:

- Composition of solutions, estimating nutritional needs.
- Complications, cyclic parenteral nutrition
- Transitional feeding.

Unit IV: Nutritional Requirements and Special Diets in Critical Care.

- Stress, sepsis and burns.
- CV complications and surgery
- GIT tract surgery
- AIDS, Cancer
- Hepatic failure.
- Neuro surgery.

References:

1. Clinical Nutrition and Dietetics 2/c Frances J. Zeina
2. Modern Nutrition in health and disease 7th edition Maurice E. Skills; Vernon R. Young.
3. Zaloga, G. P.,(1994) Nutrition in Critical Care, Times Mirror/Mosby.
4. Shills, M.E., Olson, J.A shike, M. Rose, A. C. (Ed) Modern Nutritional in health and disease. 9th Edition Williams and Wilkins.
5. Shikora, S.A and Blackburn G. L. (ed) (1999) Nutritional Support - Theory and Therapeutics, Chapman and Hall, ITP (International Thomson Publishing).
6. Mahan, L. K. and Escott - Stump, S. (2000) Krause's Food Nutrition and Diet Therapy, 10th Ed. W.B. Saunders Ltd.
7. Phillips G.d., and Lodgers c. L., (1986) Parental and Enternal Nutrition. A practical Guide, Chuchhill Livingstone.
8. Kinney, J. M., and borum, P. R. (Editors) (1989) Perspective in clinical Nutrition, Urban and Schwarzengerg.
9. Torosian, M. H., (Editor) (1995) Nutirtion for the Hospitalised patient. Basic sciences and principles of practice.
10. Keynes W. H., and fowler P.B.S (1984) Clinical Endocrinology. William Heinemann medical Books, London. Shields, R. (editor) (1992) Bailliere's clinical Gastroentrology Bailliere London.
11. Galanbos, J.P. (1979) cirrohiss in the series Major problems in Internal medicine, W.B., Sunders Company Philadelphia..
12. Frances, J. Zeman 2nd edition Clinical nutrition and dietetics

INTERSHIP/DISSERTATION

INTERNSHIP (P2)

Code: HSC15405CR

Credits: P2

Time period : 6 weeks

M.M: (Intern) 50

CORE

Objective:

The internship programme shall be of 6 weeks duration. The interns are expected to have considerable theoretical knowledge and competencies related to the following aspects:-

- Nutrition Screening and Assessment
- Dietary guidelines and practices
- Planning, nutrition care and intervention
- Implementing care plans
- Evaluating nutrition care
- Food Service Management
- Counseling

The internship is split up as follows:

➤ **A. Food Service:** Administration

(Kitchen functioning, Stores, Accounting Practices, Purchasing, Food Preparation, Distribution, Service, Safety and Sanitation, Facility layout and Management).

➤ **B. Clinical Posting** Renal Unit

Endocrinology

Cardiovascular

Surgical and Post Operative Unit

Pediatrics

Gastrointestinal Unit

Private ward

Outpatients ward (OPD) etc.

➤ **Nutrition and Diet Counseling:**

Exposure to OPD Diet Clinic.

Prescribing therapeutic diets to OPD patients.

Prescribing therapeutic diets to discharged warded patients under the supervision of dietitian.

➤ **Research and Training:**

Case study work

Presentation of case study(s)

Assignment

DISSERTATION (T2)

Code: HSC15405CR

Credits: T2

CORE

Periods/Week: 4 Hours

M.M: (Disser) 50

- To undertake an independent piece of research work on an issue of contemporary concern that contributes to the advancement of knowledge in the field of Dietetics of Clinical Nutrition/any other topic related to this field.
- The student will be guided and supervised by a member of the teaching faculty of the Institute. However, the dissertation in which the research culminates should reflect the student's own work.

GENDER AND DEVELOPMENT

Code: HSC15406CR

Credits: L 4

CORE

Periods/Week: 4 Hours

M.M: 100

Objectives:

1. To understand the concept, need, relevance and dimensions of gender empowerment.
2. To get sensitized to gender disparities/imbbalances and problems of women.
3. To know the efforts made at different levels for empowering women.
4. To know the support system in the country for women's development.

Contents:

Unit I: Gender and Development:

- Concept of gender, gender roles, changing trends, matrix shifts from welfare to development and empowerment, gender and development. National and International efforts for gender empowerment.
- Status of Women - Status, meaning, situational analysis, demographic education, employment, political and health- changing scenario.

Unit II: Violence against Women

- Dowry, divorce,
- Female foeticide and infanticide,
- Domestic violence, sexual harassment and exploitation

- Portrayal of women in mass media.
- Efforts for elimination of all forms of discrimination.

Unit III: Policies and programmes for women's development and support system

- National policy for empowerment of women, policy perspectives, mainstreaming, a gender perspective in the development process.
- Economic development - Poverty eradication, micro credit, self help groups, women and agriculture, women and industry and support services.
- Social empowerment - Education, health, nutrition, drinking water and sanitation, housing and shelter environment.

Unit IV: Legal Empowerment

- Legal literacy on personal and family laws, role of family court and legal aid centres.
- Political empowerment - Role of Panchayati Raj in the political empowerment of women.
- Support system- Role and functions of the department of Women and Child Development, Central Social Welfare Board, State Social Welfare Boards, National Commission for Women, Women's Development Corporation.

References:

1. Black M. (1993): Girls and women. A UNICEF Development Priority, UNICEF, New York.
2. Country Report (1995), Department of Women and Child Development Government of India: New Delhi.
3. Desia,N. (1986) Indian Women -- Change and Challenge to International Women's Decade.
4. Laxmi Devi, (1998). Women and Development. Institute for Sustainable Development and Anmol Publications Pvt. Ltd.; New Delhi.
5. National Perspective Plan for women (1998): Department of Women and child Development, New Delhi.
6. Sahays (1998) Women and Empowerment: Approaches and Strategies. Discovery Publishing House; New Delhi.
7. Shamim Aleen (ed) Women's Development Problems and prospects. APH Publishing Corporation.
8. Sharma, O.C. (1994) Crime Against Women Sterling Publishers Private Limited; New Delhi.
9. Subbama, M. (1985). Women, Tradition, Culture. Ashish Publishing House; New Delhi.
10. Yadav, C.P. (2000) Empowerment of Women Vol. 1 & 11. Laxmi Shikshan Sansthan and Anmol Publications Pvt. Ltd; New Delhi.

TRAINING AND DEVELOPMENT

Code: HSC15407CR

CORE

Credits: L 4

Periods/Week: 4 hrs

M.M: 100

Objectives:

1. To be aware of designing training programme for development.
2. To conceptualize the training process.
3. To provide experimental learning in training methodologies.
4. To evaluate sustainability of training programme.

Contents:

Unit I: Training and Learning

- Concept of learning, factors affecting learning among adults.
- Types and methods of learning, learning paradigms – learning knowledge, attitudes, skills practices, values, learning, reflective learning, literature learning.
- Concept of training: Goals of training, self-development, action learning, transformation and organizational development, enhancing organizational effectiveness, team spirit.

Unit II: Learning Methodologies.

- Current trends in training methodologies, organizational development approach, and competency based training, participatory training methodologies aspects, advantages,

limitations, and implication for training process.

- Training administration: policies, guidelines, authority --- the formation of training plans --- whom to be given training, when and how.
- Budget records, resourcing, use and choice of consultants.

Unit III: Trainers and Trainee Interface.

- Roles of a trainer, counsellor, partner, facilitators, teacher, advisor, model expert.
- Competencies of trainer attitudes, behavioural traits ---combining competencies of trainers , trainer – trainee perceptions.
- Factors affecting, implications on training, building and developing assertive skills.
- Different phases of training, conceptual models of training
- System approach to training - inputs, process, outputs.
- Evaluation process— components, process, methods and techniques.

Unit IV: Training Process, Organizational Factors and Training

- Training Strategy and Designs - Training need assessment, Planning training and other resources programme, organizational environmental, training facilities and other resources.
- Arranging for strategies from training design. Training methods and interaction styles : classification of training methods, their importance, use and limitations— selecting appropriate methods to suit situations and circumstances. Case study, role play, psychodrama, sensitivity, buzz group discussion, transactional analysis, process work, micro – lab, business games etc.
- Cost, organizational support and other factors facilitating training, post training factors.
- Organizational factors and training. Working climate, leadership, values, mechanics of change - organizational structures for facilitating micro and macro level interventions for facilitating development.

References:

1. Berger, M. L. and Berger, P. J. (1973) Group Training Technologies. Lowe and Bryalone Pvt. Ltd; Haver Hill; Britian.
2. Bhatnagar, D.P. (1989) Evaluation Methodologies for Training theory and Practical. Oxford and IBH Publishing Company; New Delhi.
3. Easterby Smith, Mark (1986) Evaluation Management, training and Development. Growers Publishing England.
4. Flippo Edwin, B. (1972) Principles, of Personnel Management. McGraw Hill Co.; New York.
5. Hacked, P. (1997). Introduction to Training. Universities Press Hyderabad.
6. Kolb, D. (1984). Experimental learning. Experiences as the source of learning and development. Prentice Hall Inc; New Jersey.
7. Lyton, R. and Parek, O. (1990). Training for Development. Vistar Publications:
New Delhi.
8. Lyton, R. and Pareek, V. (1992). Facilitating Development. Sage Publications, New Delhi.
9. Moss Geoffrey (1988). The trainers Handbook for Managers and Trainers. Institute of Management; Singapore.
10. Myshia, D.C. (1998) New Directions in Extension Training Directorate of Extension, Ministry of Agriculture, Govt. of India: New Delhi.
11. Palmer, A.B. (1981), Learning cycle: Models of Behavioural Change - A Handbook of Group facilitator. University Associates: California.
12. Pareek, U. (1989). Behavioural Process in Organization. Oxford and IBH; New Delhi.

13. Prior, F. (1994) Handbook of Training and Development. Jaico Publishing House;Bombay.
14. Singh, P. N. (1989). Training for Management Development. Forum of Asian Managers Bombay.
15. Spaihawk, S. (1998). Identifying Targeted Training needs. Wheeler Publishing; New Delhi.
16. Stephen, P. R. (1989). Organizational Behaviour.
17. Truelove, S. (1997). Handbook of Training and Development. Beacon, A Blackwell Asia, Imprint, New Delhi.
18. Vanments Mony (1983). The effective Role Play – A Handbook for teachers and Trainers Kogan Page Ltd. London.
19. Virmane and seth, P. (1989) Evaluation Management in training and Development. Vision; New Delhi.
20. York, A. (1989) The System Approach to Training Royal Institute of Publishing, Administration Studies, London.

GENDER AND DEVELOPMENT/ DISSERTATION (LAB COURSE)

Practical (P2)

Code: HSC15408CR

CORE

Credits: P2

Periods/week: 4 Hours

M.M: (Pract) 50

1. Studying status of women in rural and urban community.
2. Identification of problems faced by women in rural and urban community.
3. Preparation of an album on women's issues and its presentation.
4. Assessment of self-concept with reference to identity and power of women.
5. Designing and conducting training programmes for women related to Health Education Social and Economic aspects.
6. Study & Reporting on institutions supporting women Entrepreneurship in Kashmir. (Govt & Non-Govt).
7. Visit to 3 urban women entrepreneurial units and submitting a report in relation to its technical, marketing, economical, educational and financial analysis.
8. Visit to 3 rural women entrepreneur units and submitting a report.
9. Preparing and submitting a report for an entrepreneur unit and its presentation.

DISSERTATION (T2)

Code: HSC154508CR

Credits: T2

CORE

Periods/Week: 4 Hours

M.M: (Disser) 50

- To undertake an independent piece of research work on an issue of contemporary concern that contributes to the advancement of knowledge in the field of Extension and Communication and Women and Child Studies/any other topic related to this field.
- The student will be guided and supervised by a member of the teaching faculty of the Institute. However, the dissertation in which the research culminates should reflect the student's own work.

DEVELOPMENT OF CREATIVITY

Code: HSC15409CR

Credits: L 4

CORE

Periods/Week: 4 Hours

M.M: 100

Objectives

1. To understand the relevance & scope of studying creativity.
2. Become aware of the concept of creativity & various approaches to its study.
3. Understand the role of the individual, the content & socialization in developing creativity.
4. Become familiar with psychometric measurement & alternate ways of assessing.

Contents:

Unit I - Concepts of Creativity

- Historical development of creativity.
- Conceptual frame work----levels & traits of creativity.
- Types, process & stages of creativity.

Unit II - Approaches and perspectives to the study of creativity

- Neuropsychological perspective
 - Neuropsychological base of hemispherity
 - Learning motivational model
- Traditional perspective
- Modern psychological perspective
 - Psycho analytical, Humanstic perspective

- Cognitive and Non cognitive perspective
- Models on creative and training teaching

Unit III - Creativity and developmental Factors

- Creativity through the life span
- Creativity in relation to intelligence, achievement, personality
- Factors affecting creativity.

Unit IV - Identification & Development of Creativity

- Measurement---Testing & non-testing techniques of assessing creativity & techniques of development of creativity.
- Training methods---Problem solving, brain storming, inquiry training, synectics, morphological analysis, attribute listing, forced relationship, lateral thinking technique, creative problems Solving.

References

1. Rather, A. R. Creativity.
2. Passi, B. K. (1979) Passi test of creativity Agra: National psychological corporation
3. Chaddha, N. K. (1984) Perspectives in creativity. New Delhi: Ess Ess publication.
4. Dagar, B. S. (1989) Cultural Education & creativity, New Delhi: Uppal publication House.
5. Sternberg, R. J. (1999) Handbook of creativity. U. K. Cambridge University Press.
6. Sharma, V.P. (2000) Creativity potentials and prospectus, Agra: Print Palace.
7. Rajamanikam, M. (2004) Experimental Psychology with Advanced experiments, New Delhi: Concept Publishing Company.

PRINCIPLES OF GUIDANCE AND COUNSELLING

Code: HSC15410CR

CORE

Credits: L 4

Periods/Week: 4 Hours

M.M: 100

Objectives:

1. To understand the need for guidance and counseling in human development
2. To introduce basic concept in guidance and counseling.
3. To discuss the processes involved in counseling a different stages in life.

Contents:

Unit-I - Guidance and counseling

- Guidance: Concept, Objectives, Characteristics, Need and Principles.
- Counselling: Concept, Levels, Purpose, Need, Principles and Elements.
- Ethical and Legal Guidelines.

Unit-II - Basic Approaches and theories

- Psychoanalytic(Freud)
- Person Centered Theory
- Cognitive Behaviour Theory
- Eclectic Counselling
- Counseling and Psychotherapy(Major differences)
- Differences in emphasis between directive and client centered techniques
- Types and steps of counseling:

Unit-III - Need for counseling for parents & children at Different stages of development

- Infancy
- Childhood
- Adolescence
- Adult and old age
- Types of Guidance and Counselling Services
 - Educational
 - Vocational
 - Social Relationships
 - Family and Marital Areas

Unit-IV - Guidance and counseling of special groups:

- Gifted
- Mentally Challenged
- Physical, Social, Emotional Disabilities
- Socially Educationally backward

References:

1. Nicolson, D & Ayrns 11 (1995) Individual Counseling: Therapy and practice. London: David Fulton.
2. Manth, R. (1997) Counseling: The skills of finding solution to problems. London : Routledge.
3. Burnard, P. (1999) Counseling Skills training. New Delhi: Viva Books.
4. Gibson, R.L. & Mitchell, M.H., (2003) Introduction to Counselling and Guidance, New Delhi: Prentice Hall.
5. Welfel, E. R & Patterson L. E (2004) The counseling Process - A multi Theoretical Integrative Approach. Thomson/ Brooks/ Cole.
6. Rao, S. N; Hari M & Rao D. B. (2006) Guidance & Counselling, New Delhi Discovery publishing House.

7. Sharma, R.L & Sharma R. (2007) Guidance & Counselling in India, New Delhi, Atlantic Publishers.
8. Shrivastava K.K., (2008) Principles of Guidance & Counselling New Delhi: Kanishka Publishers.
9. Capuzzi D & Gross D.R. Counselling & Psycho therapy-Theories and Interventions (4th Ed) Pearsons Education India.

PRINCIPLES OF GUIDANCE AND COUNSELLING (Lab Course) / DISSERTATION

Practical (P2)

Code: HSC15411CR

CORE

Credits: P2

Periods/Week: 4 Hours

M.M: (Prac) 50

1. Interaction with practising counselors and therapists through visits to:
 - Hospitals
 - Orphanages
2. Learn about the counseling process:
 - Role play- (Psycho-Social problems of Adolescents)
 - Puppetry-(Traumatic disorders/ Social evils among Women)
3. Analysis of one case study about psycho social problems. Preparing and submitting a case report.
4. Plan and organize life style educational programme for adolescents on:
 - Nutrition and diet.(Nutrition awareness and recommended diets)
 - Healthy family life.(Reproductive health, Sexually transmitted diseases, Family planning measure

Dissertation (T2)

Code: HSC15411CR

Credits: T2

CORE

Periods/Week: 4 Hours

M.M: (Tutori) :50

- To undertake an independent piece of research work on an issue of contemporary concern that contributes to the advancement of knowledge in the field of Human Development and Childhood Studies/any other topic related to this field.
- The student will be guided and supervised by a member of the teaching faculty of the Institute. However, the dissertation in which the research culminates should reflect the student's own work.

Current & Emerging Concepts In Human Nutrition

Code: HSC15412DCE

Discipline Centric Elective

Credits: L 4

Periods/week: 4 Hours

M.M: 100

Objectives:

1. To orient students with current concepts in Human Nutrition
2. To Know about the Emerging trends in Nutrition
3. To make students understand the importance of fiber in relation to Health

Contents:

UNIT I: Defensive Nutrition Paradigm

- Phytochemicals: Concept and its role in prevention of diseases, Antioxidants & their health benefits.
- Concept of Nutrogenomics & Nutraceuticals.
- Probiotics and their beneficial effects, prebiotics.
- Genetically Modified Foods and their benefits. Safety of GM Foods.
- Nutritional Supplements & Ergogenic Aids- Types.
- Government Regulations of Food Safety- FSSAI.

UNIT II: Emerging trends in Nutrition

- Organic Foods & Organic Farming
- Functional Foods & their Benefits
- Commonly used Milk Substitutes
- Artificial sweetener and its types.
- Various Fat replacers in the diet
- Advanced concept of food preservation
- Placebo effect

Unit III: Food Technology

- Food Spelling.
- Food fortification & Enrichment- objectives, commonly fortified foods & methods of fortification.
- Irradiation- Safety & Quality of irradiated foods.
- Microwave Cooking- Its advantages & disadvantages.

UNIT IV: Fiber & its benefits

- Dietary fiber & its types (Soluble And Insoluble Fiber)
- Sources of Fiber & its components
- Importance of Fiber in Human Nutrition
- Role of Fiber in Prevention of Diseases
- Resistant starch & its Potential health benefits.

References:

1. Robinson, C. H., Normal and Therapeutic Nutrition. (17th Edition) Macmillan Publishing Company.
2. Lea & Febiger USA Publishing.
3. Shills M.E., et.al., Modern Nutrition in Health and Disease.
4. B. Shri. Lakshmi., Dietetics, 4th Edition. New age, International (p) Ltd. Publishing.
5. Davis J., and Sherer, K. (1994): Applied Nutrition and Diet Therapy for nurses 2nd Ed. W.B.Saunders. Co.
6. William, S. R. (1993): Nutritional & Diet Therapy 7th Ed. Times Mirror/Mosby College Publishers.

FOOD SAFETY AND QUALITY CONTROL

Code: HSC15413DCE

DISCIPLINE CENTRIC ELECTIVE

Credits: L 4

Periods/week: 4 Hours

M.M: 100

Objectives:

1. Understand the importance of quality assurance in food industry.
2. Understand various tests and standards for quality assessment and food safety.
3. Understand various tests used to detect food adulterants
4. Be familiar with the fundamentals that should be considered for successful quality control programme.

Contents:

Unit I: Quality Control

- Definition of quality, quality control and quality assurance, Total Quality Management and Different Quality Standards.
- Factors affecting Food Quality - Extrinsic and Intrinsic
- Functions of quality control in food Industry
- Introduction to statistical quality control and control charts

Unit II: Sensory Evaluation of Food Quality.

- Sensory tests – Trained panel members, testing laboratory, preparation of samples, techniques of smelling and tasting, testing time, design of experiment, reasoning for testing good quality evaluation card.
- Types of tests –
 - Difference tests – paired comparison test, duo-trio test, triangle test.
 - Rating tests – ranking test, single sample (Monadic test), two sample difference test, multiple sample difference test, Hedonic rating scale, numerical scoring test, composite scoring test.
 - Sensitivity test – sensitivity threshold test, dilution test, descriptive flavour profile method.
- Limitation of sensory evaluation

Unit III: Objective Evaluation of Food Quality

- Advantage, disadvantages and basic guide lines,
- Chemical methods, Physico-chemical methods, Microscopic examination and Physical methods.

Unit IV: Hazard analysis critical control point (HACCP)

- Introduction and Principles of HACCP
- Physical, chemical and biological Hazards in foods
- Consumers role and safe food practices – buying, storing, preparing cooking and serving .
- Food Safety and Standards Act.

References:

1. Early, R. (1995): Guide to Quality Management Systems for the food Industry, Blackie, Academic and professional, London.
2. Gould, W. A., and Gould, R. W (1988): Total quality Assurance for the Food Industries, CTI Publication Inc, Baltimore.
3. Pomeranz, Y. and Meloan, C.E., (1996): Food Analysis: theory and practice, CBS publishers and distributor New Delhi.
4. Ranganna, S. (1986): Handbook of analysis and quality control for Fruit and vegetables products 2nd, edition Tata, McGraw Hill Publishing co, Ltd, New Delhi.
5. Hagstad, H.V and Hubbert, W.T. (1986) Food Control, Foods of animal Origin, Iowa State University Press, AMES.
6. James C.S., (1995) Analytical Chemistry of Foods, Blackie Academic and Professional (Chapman and Hall) Madras.
7. Bryan, F. L. (1992): Hazard Analysis Critical Control Evaluations. A Guide to Identifying Hazards and Assessing Risks Associated with Food Preparation and Storage. World Health Organization, Geneva.
8. Kirk, R. S. and Sawyer, R. (1991) Pearsons Composition and Analysis of Foods, Longman Scientific and Technical. 9th Edition, England.
9. Food and Agricultural Organization (1980): Manuals of Food Quality Control. 2 Additives Contaminants Techniques, Rome.
10. Bureau of Indian Standards: Specifications and Standards Methods.

11. Herschderfer (1987): *Quality Control in Food Industry, Food Science and Technology -- A series of Monographs*, Academic Press, London.
12. Marion Bennion 10th Edition, *Introductory Foods*.
13. Norman W. Desrosier, James N. Desrosier, 4th Edition, 1987, *The Technology of Food Preservation*.
14. B. Srilakshmi, 3rd Edition 2003, *Food Science*.
15. Paul Insel, R. Elaine Turner, Don Rose, 2002 edition, *Nutrition*
16. N. Shakuntala Nanay, M. Shadaksharaswamy, 2nd Edition 1996 *Foods Facts and Principles*.
17. Singh, S.P. Funk, J., Tripathi, S.C., & Joshi, N. (2009). *Food Safety Quality Assurance and global trade*. VP (India): International Book Distributing Co.
18. Jaub, I.A., & Singh, R.P. (1998) *Food Storage Stability*, New York CRC Press.
19. Pearson, A.M., & Dutson, T.R. (1995) *HCCP in meat, Poultry and Fish processing*. New York: Aspen Publishers, Inc.
20. Iarber, J.M., & Todd, E.C.D. (2000) *Safe handling of foods*. New York Marcel Dekker, Inc.
21. Vrema, L.R., & Joshi, V.K. (2000) *Post harvest technology of fruits & vegetables handling, processing formation and waste management*, New Delhi, Indus Publishing Company.

PROJECT MANAGEMENT AND WOMEN ENTREPRENEURSHIP

Code: HSC15414DCE

Discipline Centric Elective

Credits: L 4

Periods/Week: 4 Hours

M.M: 100

Objectives:

1. To provide conceptual inputs regarding structure and development of women entrepreneurship.
2. To sensitize and motivate students towards entrepreneur management.
3. To understand the framework for identifying and evaluating projects.
4. To impart skills for planning and management of the projects undertaken.

Contents:

Unit I: Women Entrepreneurship:

- Concept and development of women entrepreneurship. Functions and role of women entrepreneurs.
- Characteristics and personal attributes of successful entrepreneurs. Developing entrepreneurial competencies.
- Institutional support in women entrepreneurship. Problems faced by SSI in J&K
- Problems faced by women entrepreneurs and their remedies.

Unit II: Project Identification:

- Identification of project, generation and screening of project ideas. Classification of projects.
- Forms of ownership - sole proprietorship, partnership, company and cooperative society. Factors influencing the choice.
- Steps for starting a small business, procedure and formalities for registration.
- Incentives and subsidies- need and problems.

Unit III: Project Analysis:

- Market and demand analysis- Demand forecasting. Marketing problems and their remedies.
- Technical, management and economic analysis of projects.
- Estimation of cost of projects- objectives, components and basis of estimates.
- Working capita requirement and its estimates.
- Sources of finance - short term and long term sources.

Unit IV: Financial Analysis and Project Implementation:

- Proforma profit & loss statement and balance sheet.
- Techniques of financial analysis - Break-even analysis, pay back period, average rate of return. Net present value and internal rate of return.
- Project format—common format of a project proposal. Information base and rules governing the preparation of project proposal.
- Project implementation—pre-requisites for successful implementation. Monitoring, controlling and follow-up.

References:

1. Akhauri, M.M.P. (1990) Entrepreneurship for women in India, NIESBUD, NewDelhi.
2. Hisrich, R.D. and Brush, C.G. (1986) The women Entrepreneurs, D.C Health & Co Toranto.
3. Hisrich, R.D. and Peters, M. P. (1995) Entrepreneurship –Starting Developing and Managing a New Enterprise, Richard D., Irwin, INC, USA.
4. Meredith, G.G. et, al, (1982): Practice of Entrepreneurship, ILO Geneva.
5. Patel, V.C. (1987): Women Entrepreneurship –Developing New entrepreneurs, Ahmadabad EDII.
6. Grover, Indu, & Grover, (2002). Women and empowerment, Agrotech. Publishers, Udaipur.

PARENTING IN EARLY CHILDHOOD

Code: HSC15415DCE

Discipline Centric Elective

Credits: L4

Periods/week: 4 Hours

M.M: 100

Objectives

- To understand the significance of parents role in early childhood.
- To develop skills to involve parents in early childhood education programmes.
- To learn to conduct parent education programmes.

Contents:

Unit I: Individual Parenting Roles.

- The task of parenting and the concept of parenting skills.
- Changing concept of parenthood and childhood.
- Being a competent parent.
- Determinants of parenting behaviour.
- Characteristics of the parenting roles.
 - The mothering role.
 - The fathering role.
- Concept of family, and family life cycle stages.

Unit II: Developmental Interaction in Early Childhood Years

- Parents role in developing self awareness in children.
- Family relations and communication.

- Helping the child to learn to express and control emotions.
- Helping children discover personal capabilities.
- Establishing routines and showing responsible behaviour.
- Learning social role and interactions with others.
- Meeting the family needs during this stage.
- Meeting the children's needs.

Unit III: Techniques of parent Education in Preschool Setting

- Informal Meeting: Occasional/accidental meeting, written/printed-newsletters, circulars, notices etc.
- Parent library, toy library.
- Workshops/demonstration centre.
- Parents corner.
- Open house.
- Large/small group meetings.
- Individual meetings: Home visits, individual sessions.
- Working with vulnerable families.

Unit IV: Parent Education and Support

- Role of professionals.
- Parents as family workers.
- Flexibility to different needs.
- Personal development of parents.

References:

1. Bigner, J.(1979): Parent child relations: An introduction to parenting. N.Y. : McMillian Pub.
2. Brim, Harman (1980); Learning to be parents, principles, programmes and methods. Saga Pub.
3. Fine Marwin (1980): Handbook on parent education, New York: Academic Press Inc.
4. Goldelein, J.C. (Ed.)(1994). toys, Child Development, Cambridge University Press.
5. Gordon, Thomas (1975): Parent effectiveness training, New York: New American Library.
6. Gillian, Pugh (1984): The needs of parents, practice and policy in parent education, Macmillan,
7. Gupta (1991). Speaking of Child Care, Everything You Wanted to Know: (2nd Ed.). New delhi : Sterling.
8. Lidhop, M. (1987). Child rearing and Psycho-social Development. New Delhi: Ashish Publications.
9. Kulkarni, Sudha (1988): Parent Education, Jaipur: Rawat Pub.
10. Naidu, U.S. and Nakhate, V.S. (1985). Child Development Studies in India. Bombay: Tata Institute of Social Sciences.
11. Wagh, Anutai (1984): Parent and Community Participation in the PreSchool Programme, New Delhi: NCERT.

Participatory Tools and Methods

GENERIC ELECTIVE

Code: HSC15416GE

Credits: L2

Periods/week: 2 Hours

Marks: 50

Objectives:-

1. To understand meaning and principles of PRA.
2. To acquaint the students with different PRA methods.

UNIT I: Participatory Rural Appraisal & Space related PRA Methods

- Meaning, principles and advantages.
- PRA; process, team, structuring and choosing PRA team.
- Social , Resource and Mobility Map
- Services and opportunities
- Participatory Census Method.

UNIT II: Time related and Relation PRA Methods.

- Time line and Trend Analysis
- Daily Activity Schedule
- Dream Map
- Well Being Ranking
- Venn Diagram
- Spider Diagram

References:

1. Somesh Kumar., Methods for Community participation. A Complete Guide for Practitioners.
2. Chandramouli., K (1991) "Pass on the Pen Approach. Identifying the poorest of the poor families; PRA notes 14: December, PP 29-32 IIED, London.
3. Cornwall, A. (1992) "Body Mapping in Health PRA/ PRA' PRA notes 16 July PP 69-76 IIED, London.
4. Kumar Somesh ed., (1996) ABC of PRA - Attitude and Behaviour changes, A report of the Proceeding of South - East Workshop on Attitudes and Behaviour in PRA. Action Aid India and PRAXIS, Patna.
5. Dr. A. Adivi Reddy, 7th Edition 2001, Extension Education.
6. G. L. Ray, 2nd revised and enlarged edition 1996, first published 1991.

Introduction to Guidance & Counselling

GENERIC ELECTIVE

Code: HSC15417GE

Credits: L2

Periods/week: 2 Hours

Marks: 50

Objectives:

1. To understand general concepts of guidance and counselling
2. To discuss different theories involved in counselling
3. Importance & need of guidance and counselling

Unit-I - Guidance

- Guidance: Definition , nature and its functions
- Basic principles of Guidance
- Characteristics of Guidance
- Model of Guidance : Personal and vocational Guidance
- Need of Guidance for Adolescence

Counselling

- Meaning and purpose of counselling
- Elements and steps in counselling
- Theories of counselling
 - Directive/Non-Directive
 - Psychoanalytic (Freud)
- Ethical and legal guidelines of counselling

Unit II: Need of Guidance for:

- Adolescence
- Gifted Children
- Family with special child
- Conflicted families

Need of Counselling for

- Adolescence
- Gifted Children
- Family with special child
- Conflicted families

References:

1. Bonow, 4. (1964) Milestone of Notable events in the history of vocational guidance. In Henry Bonow (ed) Man is a world at wor, PP 45-64.
2. Dave, I. (1984) The Basic Essentials of Counselling. New Delhi Sterling publications
3. Fuster, J.M (2005) Personal counselling (11th ed). Mumbai better yourself books.
4. Gibson, R. L. I Mitchell, M.H. (2003) Introduction to counselling and guidance , New Delhi, Practice Hall.
5. Rao, S.N; Hari M & Rao D. B. (2006) Guidance and counselling, New Delhi Discovery publishing Course .
6. Shrivastava K.K ; (2008) Principles of Guidance and counselling New Delhi: Kanishke publishers

Introduction to Disabilities

OPEN ELECTIVE

Code: HSC15418OE

Credits: L2

Periods/week: 2 Hours

Marks: 50

Objectives:

1. To make the student aware about the concept of disabilities
2. To acquaint the student with different types of disabilities

Contents:

Unit I - Disability (Physical & Skeletal Disorders)

- Concept of normality, disability, impairment and handicap
- Physical disorders (causes of CNS disorders, Cerebral Palsy, Epilepsy, Spinal bifida, Spinal cord injuries)
- Arthritis, Amputation (causes)
- Mental retardation (causes and types)

Unit II - Sensory and Emotional Impairments (concept, causes and characteristics)

- Visual impairment
- Speech impairment
- Emotional impairments:
 - Autism
 - Schizophrenia
 - obsession and compulsion

References:

1. Kanga F. (1990) *Heaven on wheels*, New Delhi Penguin Books
2. Narasimhan M.C & Mukherjee A.K. (1986) *Disability a continuing challenge*, New Delhi Wiley Eastern limited.
3. Oliver M.(1996) *Understanding Disability, from theory to practice*, London Macmillan press.
4. Pandey R.S & Advani L. (1996) *Perspectives in disability and rehabilitation*. New Delhi Vikas Publishing House Private Limited.
5. Kirk, S.A., Gallagher, J.J., Anastaslow, N.J., & Coleman, M.R. (2006). *Educating conceptual children* (11th ed.) New York: Houghton Mifflin Company.
6. Micheal L. Hardman, Clifford J. Drew, M. Winston Egan, Hardman (2004) *Human Exceptionality – Society, School & Family*, 8th Edition, Allyn & Bacon.