

FPN – SCT 1.6.2: NUTRITION AND PHYSICAL FITNESS

Theory

52 Hours

OBJECTIVES

Integration and application of principles of sound nutrition and physical activities to optimize the physiological, psychological, and social lifelong development of the individual and use of scientific principles and current technological advances to help assess and evaluate physical fitness, body composition, dietary patterns, energy expenditure, and their interrelationships.

Unit I: INTRODUCTION TO PHYSICAL FITNESS

16 hours

Definition and Components- Health related and Skill related. Assessment of Physical Fitness: Anthropometry, Body composition, Cardio-respiratory, endurance, muscular fitness, musculoskeletal flexibility Benefits of physical fitness on wellness dimensions, Healthy life style: strategies ,factors that promote life style change, Nutrition, Exercise, Physical Fitness and Health – their interrelationship, Factors affecting Physical Work Capacity and Work Efficiency. Alternative system for health and fitness: Ayurveda, Yoga , Meditation, Vegetarianism.

Unit II: EFFECTS OF EXERCISE:

12 hours

Sports Physiology, Types of exercises and its impact on fitness, Effect of exercise on musculoskeletal system, Muscle fatigue , prevention and recovery, Effect of exercise on cardiac cycle, cardiac output, blood pressure, Athlete heart, Index of training, importance of heart rate monitoring, Effect of exercise on respiratory system,

Unit III: DIETARY INTAKE AND OPTIMAL EXERCISE PERFORMANCE:

12 hours

Nutritional Requirement of sports person as compared to normal active person. Factors affecting fuel utilization, Energy substrate for activities of different intensities and duration, aerobic and anaerobic activities. Carbohydrate as a energy source for sports and exercise. Role of fat as energy source for sports and exercise, Protein and amino acid requirements for sport and exercise. Important micronutrients for exercise. B complex vitamin and specific minerals, Exercise induced oxidative stress and role of antioxidants. Fluid balance in sports : importance , symptoms and prevention of dehydration,

Unit IV: SPORT SPECIFIC NUTRIENT REQUIREMENT

12 hours

Sport specific requirement of nutrient: diet manipulation. Pre game and Post game regime, Special Nutrition for Female Athlete, Menstrual problem of female athlete, athlete triad, Chronic dieting and eating disorder- sports anaemia. Dietary supplements and ergogenic aids (nutritional. Pharmacological and physiological).

LEARNING OUTCOMES:

Upon successful completion of the course students shall be able to:

1. Explain how the principles of fitness and nutrition (such as body composition, energy intake, energy expenditure, and the acute and chronic physical changes related to exercise and nutrition) complement each other in helping to develop physiological well-being and overall health.

1.2.3

FPN – HCT 2.3: FOOD PROCESSING

Theory

52 Hours

Objectives:

1. Gain knowledge of basic and applied aspects of food processing operations
2. Gain knowledge of basic principles of food processing methods.

UNIT 1: Cold preservation

12 Hours

Freezing: requirements of refrigerated storage - controlled low temperature, air circulation and humidity, changes in food during refrigerated storage, progressive freezing, changes during freezing –concentration effect and ice crystal damage, freezer burn. Refrigeration load, factors determining freezing rate-food composition and non compositional influences.

UNIT 2: Freezing- Mechanism and freezers
Hours

8

Freezing methods -direct and indirect, still air sharp freezer, blast freezer, fluidized freezer, plate freezer, spiral freezer and cryogenic freezing.

UNIT 3: Dehydration
Hours

12

Normal drying curve, effect of food properties on dehydration, change in food during drying, drying methods and equipments air convection dryer, tray dryer, tunnel dryer, continuous belt dryer, fluidized bed dryer, spray dryer, drum dryer, vacuum dryer, freeze drying ,foam mat drying.

UNIT 4: Food Irradiation and Microwave Heating
Hours

10

Ionizing radiation and sources, unit of radiations, direct and indirect radiation effects, safety and wholesomeness of irradiated food. Microwave heating and application.

UNIT 5: Thermal processing
Hours

10

Introduction, Classification of Thermal Processes, Principles of thermal processing, Thermal resistance of microorganisms, Thermal Death Time, Lethality concept, characterization of heat penetration data, Thermal process Calculations.

PRACTICALS :

1. Comparison of conventional and microwave processing of food
2. Preservation of food by the process of freezing
3. Drying of food using Tray dryer/other dryers
4. Preservation of food by canning (Fruit/Vegetable/meat)
5. Processing by Irradiation
6. Cut-out analysis of canned food
7. Osmotic dehydration
8. Minimal Processing
9. Testing of Packaging material
10. Study Tour & Visits to Food industries

LEARNING OUTCOMES:

Students will learn particularly:

- Describe the source and variability of raw food material and their impact on food processing operations.
- Explain the spoilage and deterioration mechanisms in foods and methods to control deterioration and spoilage.
- List the principles that make a food product safe for consumption.
- Describe the transport processes and unit operations in food processing as demonstrated both conceptually and in practical laboratory settings.
- Operate the mass and energy balances for a given food process.
- Describe the unit operations required to produce a given food product.
- Explain the principles and current practices of processing techniques and the effects of processing parameters on product quality.
- Explain the properties and uses of various packaging materials.
- Describe the basic principles and practices of cleaning and sanitation in food processing operations.
- Identify the requirements for water utilization and waste management in food and food processing.

Recommended Readings

1. Desrosier NW and Desrosier JN, The Technology of Food Preservation, CBS Publication, New Delhi, 1998
2. Paine FA and Paine HY, Handbook of Food Packaging, Thomson Press India Pvt Ltd, New Delhi- 1992
3. Potter NH, Food Science, CBS Publication, New Delhi, 1998
4. Ramaswamy H and Marcott M, Food Processing Principles and Applications CRC Press, 2006
5. Rao PG, Fundamentals of Food Engineering, PHI Learning Pvt Ltd, New Delhi, 2010
6. Toledo Romeo T, Fundamentals of Food Process Engineering, Aspen Publishers, 1999

FPN-SCT 2.6.1 - FOOD PRODUCT DEVELOPMENT

Theory

52 hours

OBJECTIVES:

The overall goals are to provide the opportunity for students to integrate their training in food science and technology courses and related disciplines and to gain experience with the theory and practice of developing food products. Lectures and labs/discussion sessions will involve understanding and applying practices to develop food products with traditional and novel food ingredients and processes in the context of existing and projected national and international legal, regulatory, economic, environmental and social constraints. Nutritional and health implications relating to food products will be considered.

UNIT 1

17 hours

Introduction and product development

Definition; stages of new product development; types of new product development; characteristics of product development; role of consumer research in new product development; purpose of product development; ways for success in product development.

UNIT 2

18 hours

Sensory evaluation of foods

Definition; terms related to sensory evaluation; importance of sensory evaluation; different types of sensory evaluation test with example; selection of sensory evaluation panel; Objectives of sensory evaluation; Sensory evaluation test using different senses; Variables controlled during sensory evaluation; Factors affecting sensory evaluation

UNIT 3

17 hours

Consumer behaviour

Definition of consumer and consumer behaviour; Introduction to marketing strategies; application of marketing strategies; factors affecting consumer behaviour; consumption process- pre-consumption, consumption and post-consumptional

Practicals

1. To perform sensitivity tests for four basic tastes
2. Recognition tests for various food flavors
3. Texture evaluation of various food samples- cookies/ biscuits/ snack foods
4. Use of traditional recipe and modification
5. Sensory evaluation by hedonic scale
6. Designing a new product
7. Standardising a new product
8. Developing a new product
9. Cost calculation for the developed product
10. Visits to food industries

LEARNING OUTCOMES:

On successful completion of the course students will be able to:

- Review advances in flavour and ingredient science and technology;
- Apply a product development process to generate ideas, design, develop and evaluate new products and their markets;
- Apply principles of project management and work as a member of a team to bring a product development project to completion;
- Demonstrate skill in the application of standard methods for the measurement and evaluation of sensory differences;
- Evaluate models for the definition and assessment of quality in manufactured food products;

Textbooks and Reference Materials:

1. Lawless, H. T., and Heymann, H., 2010, Sensory Evaluation of Food: Principles and Practices. 2nd edition, New York, NY: Springer.
2. Moskowitz, H. R., Beckley, J. H., Resurreccion, A. V. A., 2006, Sensory and Consumer Research in Food Product Design and Development. Blackwell Publishing.
3. Brody, A.L. and Lord, J. 2008, Developing New Food Products for a Changing Marketplace. 2nd Edition, CRC Press, Boca Raton, FL.
4. Fuller, G.W., 2011, New Food Product Development. 3rd Edition, CRC Press, Boca Raton, FL.
5. Lyon, D. H., Francombe, M. A., Hasdell, T. A., Lawson, K., 2002, Guidelines for Sensory Analysis in Food Products Development and Quality Control. Chapman and Hall, London.
6. Lawless, H.T. and Klein, B.P., 2001, Sensory Science Theory and Applications in Foods. Marcel Dekker Inc. New York.
7. Piggott, J.R., 2008, Sensory Analysis of Foods. Elsevier Applied Science London.

1.1.3

FPN – SCT 4.4.1: FOOD QUALITY, SAFTY AND CERTIFICATION

Theory

52 hours

Course objectives:

1. To provide fundamental theoretical concepts on food safety systems; technical knowledge for identifying food safety problems and give solutions and to build confidence among the students to handle the food safety projects in food industries industries.
2. More exposure and awareness on food safety systems in Food industries
3. They can easily identify the sources for food standards, regulations and specifications prescribed by different certificate bodies
4. They can implement strong control systems through different techniques

UNIT I

10 Hours

Concept and meaning of Food quality and food Safety, Importance of quality control and assurance, food laws and regulations. National and international food laws, Governing bodies. Application and specifications for food standards, food products, additives, preservatives, colouring agents, emulsifiers, stabilizers and antioxidants, Natural toxins.

UNIT II

15 Hours

Methods/techniques for assessment of quality of different foods. Safety aspects of water and beverages such as soft drinks, tea, coffee, cocoa., Safety assessment of food contaminants and pesticide residues., Safety evaluation of heat treatments and related processing techniques

UNIT III

15 Hours

Hazard analysis and critical control point. Nutritional labeling, bar coding, meaning and importance.

UNIT IV

12 Hours

Food adulteration, detection techniques for processed foods. Municipal health services, mobile units Prevention and control of food, water and air borne diseases.

Practicals

1. PFA, FPO, Agmark, BIS and HACCP for common foods:
2. Cereals and flours, Pulses, nuts and oilseeds, Fruits and vegetables, Oil, butter, ghee, vanaspati and other fats, Milk and milk products, Sugar, jaggery and miscellaneous foods, Meat, fish and poultry, Eggs
3. Physical and chemical methods/techniques for assessment of food quality.
4. Quality evaluation of processed foods with cereal, pulse, vegetable, fruit, milk, milk products, meat, fish and poultry as main component by chemical and sensory methods
5. Market survey of processed foods with reference to food labeling
6. Visit to Consumer Forum/Food Quality Laboratory
7. Food adulteration tests for processed foods

Learning outcome: Students shall

1. Develop a HACCP plans for different food industries
2. Learn HACCP certification
3. Understand laws and regulations governing food safety principles (FSMA, HACCP)
4. Understand industry food safety requirements and certifications: organic, halal, kosher etc.
5. Understand auditing, and different auditing schemes, and be able to complete internal (first party) audits

References

1. Handbook of Analysis and Quality Control for Fruit and Vegetable Products (English, Hardcover, Ranganna S.)
2. Quality Control in the Food Industry, Volume 2 edited by S Herschdoerfer

FPN – SCT 1.6.1: TECHNICAL WRITING SKILLS

Theory

Course Objectives

- This course enables to identify and model effective scientific and technical writing which are frequently required in a variety of careers.
- To develop effective communication strategies for a variety of audiences/ target groups such as professional peer audience and public audiences.
- To demonstrate the effective writing skills for scientific journal or dissertation and the communication principles encouraged by professional writers.
- To improve the ability of reading and understanding of scientific research papers and review articles together with research design and analytical measures taken in a research.

UNIT 1: Communication and technical writing communication **13 hours**

- Definition, scope and role of biostatistics, biomedical and social research in life sciences.
- Need for research and challenges in life science research
- Data: Types of data and its presentation.
- Levels of measurements

UNIT 2: Research- Types and measures **13 hours**

- Types of research and techniques
- Statistical measures: Measures of central tendencies, Measures of dispersion, Standard distributions and Probability.

UNIT 3: Research- Designs and Measures **13 hours**

- Research process/steps
- Abstract writing
- Health Indicators (Mortality and Morbidity rates)
- Ethical issues in biomedical research

UNIT 4: Data Collection **13 hours**

- Sampling fundamentals and designs: Define population, sample, characteristics of a good sample design; Sampling design and methods: (probability and Non probability); Sample size and errors in sampling
- Methods of data collection: Quantitative methods (interview method, observation method and questionnaire method) and Qualitative methods (case study and focus group discussion)

Practicals

1. Various forms of scientific writings- theses, technical papers, reviews, manuals, etc.,
2. Various parts of thesis and research communications (title page, authorship contents page, preface)
3. Various parts of thesis and research communications (introduction, review of literature, material and methods, experimental results and discussion)
4. Writing of abstracts, summaries, précis, citations etc
5. Commonly used abbreviations in the theses and research communications
6. Illustrations, photographs and drawings with suitable captions
7. Pagination, numbering of tables and illustrations

8. Writing of numbers and dates in scientific write-ups
9. Editing and proof-reading
10. Writing of a review article

Learning Outcomes

- Participate actively in writing activities that model effective scientific and technical writings that use appropriate formats and conventions derived from individual disciplines.
- Understand how to apply scientific information and knowledge in practical documents related to nutrition research
- Design and produce a scientifically sound research project appropriate to the student's major and/or career interests.
- Write scientific papers according to professional guidelines.
- To know the different types of technical writing communications, data collection and research designs and measures.
- To be familiar with writing chapters/ parts of a thesis and dissertation where they can collect, analyze, document and report research clearly

Suggested Reading:

1. Creswell, W. J., 2014, Research design: qualitative, quantitative, and mixed methods approaches. Fourth Edition, Sage Publication.
2. Kothari, C. R. And Garg, G., 2014, Research methodology: methods and techniques. Third edition, New age international publication.
3. Sharma, S.D., A Text book of Scientific and Technical Writing. Vikas publication, Delhi.

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FPN – SCT 1.6.2: NUTRITION AND PHYSICAL FITNESS

Theory

52 Hours

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12 hours

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12 hours

Nutritional Requirement of sports person as compared to normal active person. Factors affecting fuel utilization, Energy substrate for activities of different intensities and duration, aerobic and anaerobic activities. Carbohydrate as a energy source for sports and exercise. Role of fat as energy source for sports and exercise, Protein and amino acid requirements for sport and exercise. Important micronutrients for exercise. B complex vitamin and specific minerals, Exercise induced oxidative stress and role of antioxidants. Fluid balance in sports : importance , symptoms and prevention of dehydration,

Unit IV: SPORT SPECIFIC NUTRIENT REQUIREMENT

12 hours

Sport specific requirement of nutrient: diet manipulation. Pre game and Post game regime, Special Nutrition for Female Athlete, Menstrual problem of female athlete, athlete triad, Chronic dieting and eating disorder- sports anaemia. Dietary supplements and ergogenic aids (nutritional. Pharmacological and physiological).

LEARNING OUTCOMES:

Upon successful completion of the course students shall be able to:

1. Explain how the principles of fitness and nutrition (such as body composition, energy intake, energy expenditure, and the acute and chronic physical changes related to exercise and nutrition) complement each other in helping to develop physiological well-being and overall health.

2. Explain how the principles of fitness and nutrition (such as setting realistic short-term behavior change goals and the relationship of exercise and diet to stress reduction) complement each other in helping to develop psychological well-being and overall health.

3. Identify some of the social and cultural influences on food habits and exercise/activity patterns.

BOOKS RECOMMENDED

1. Bamji S.M., Rao N P and Reddy V.1998. Text book of Human Nutrition. Oxford and IBH publishing C. New delhi.
2. Fink H.H.,Mikesky E.A and Burgoon A.L.2012.Practical Applications in sports Nutrition.3 rd ed. Jones and Barlett Learning, USA.
3. Burke Louse and Deakin Vicky (2006) Clinical sports Nutrition.
4. Ira Wolinsky (Ed) (1998): Nutrition in Exercise and Spots,3rd Edition, CRC.Press.

SUGGESTED REFERENCES FOR ADDITIONAL READING

1. Mahan, L. K & Ecott- Stump, S. (2000): Krause's Food, Nutrition and Diet Therapy
2. Shils, M.E., Olson,J.A., Shike,N. and Ross, A. C(Ed) (1999): Modern Nutrition in Health & Disease,9th Edition, Williams& Wilkins.
3. Mc Ardle, W.Katch, F. and Katch, V.(1996) Exercise Physiology. Nutrition and Human Performance, 4th edition, Williams and Wilkins, Philadelphia.
4. Gibney J.M. Macdonald A. I and Roche M. H.2003. Nutrition and Metabolism. Blackwell publishing.
5. Nutrition for Health, Fitness and Sports, eight edition, by Melvin Williams, 2007, McGraw-Hill.

1.2.1

FPN – SCT 1.6.3: UNIT OPERATIONS FOOD INDUSTRIES

Theory

52 Hours

Course objectives:

1. To study the principles and laws governing the physical, chemical or biochemical stages of different processes and the apparatus or equipment by which such stages are industrially carried out.
2. The studies should be focused on the transformation processes of agricultural raw materials in to final products or on conservation of materials and products

Unit-1

10 hours

Screening; types of screens ; Grizzly; Revolving screen; Shaking screen; Rotary screen; Vibratory screen; Horizontal screen; Perforated metal screens; wire mesh screen; Ideal and Actual screen; Effectiveness of screen; Air screen cleaners;

Unit -2

10 hours

Definition and Introduction to Separation; Types of Separator- Disk, Indented cylinder, Spiral, Specific Gravity, Destoner, Inclined Draper, Velvet roll, Pneumatic & aspirator, separation based fluidisation technique, Magnetic and Cyclone Separator.

Unit -3

12 hours

Size reduction procedures- Crushing, Impact, Shearing, Cutting; Cereal grinding, Degree of grinding; Size reduction machinery- crusher, grinder, attrition mills, hammer mill, ball mills, rietz mill & oil expression and extractions- hydraulic press, screw press

Unit-4

12 hours

Utilities of Drying; thermal properties; Equilibrium moisture content (EMC); Drying theories; methods of drying;- Contact drying, Convective drying, freeze drying, radiation drying, Superheated steam, Drying rate period; types of dryers-Deep bed, Flat bed, Continuous, Recirculating, LSU, Fluidised bed, Rotary, Tray, Tunnel and solar, Etc.

Unit-5

08 hours

Material handling & transportation- Belt conveyor, bucket elevator, screw conveyor, pneumatic conveyor; transportation. Applications of unit operations to the food industry.

Learning outcome: Students shall

1. Familiar with basic unit operation principles of several food processing methods including thermal pasteurization, retorting, blanching, freezing, dehydration, advanced thermal preservation (aseptic processing, ohmic heating, microwave heating), nonthermal processing (high pressure processing, pulsed electric field processing, irradiation), separation and concentration, and extrusion.
2. Learn basic components of different process equipment and unit operation associated with them. Role of packaging material in food preservation.
3. Identify key food processing and product parameters that can influence microbiological safety and quality of the processed product.
4. Appreciate the importance of integrating engineering, chemistry, microbiology and other disciplines for processing microbiologically safe, wholesome foods.

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Text books/ References:

1. Sahay KM & Singh KK 1994. Unit Operation of Agricultural Processing. Vikash Publication House.
2. Fellos PJ 2005 Food Processing Technology: Principle & Practice 2nd Ed. CRC.
3. Potter NN & Hochkiss 1997 Food Science 5th Ed. CBS.
4. Potty VH & Mulky MJ 1993 Food Processing. Oxford & IBH.
5. Ramaswamy H & Marcotte M. 2006 Food Processing: Principles & Applications. Taylor & Francis.
6. Berk Z. 2009. Food Process Engineering and Technology. Elsevier.
7. Brennan JG, Butters JR, Cowell ND & Lilly AEI. 1990. Food Engineering Operations. Elsevier.
8. Earle RL. 1985. Unit Operations in Food Processing. Pergamon Press.
9. Fellows P. 1988. Food Processing Technology: Principle and Practice. VCH Publ.
10. Heldmen DR & Hartel RW. 1997. Principles of Food Processing. Springer.
11. McCabe WL & Smith JC. 1999 Unit Operations of Chemical Engineering. McGraw-Hill.
12. Sahay KM & Singh KK. 1994. Unit Operation of Agricultural Processing. Vikas Publ. House.
13. Singh RP & Heldman DR. 1993. Introduction to Food Engineering. Academic Press.
14. Sun Da Wen. 2006. Handbook of Frozen Food Processing and Packaging. Francis and Taylor, CRC press.
15. Toledo RT. 2007. Fundamentals for Food process Engineering. Springer.

16. Kenneth J. Valentas, Enrique Rotstein and R. Paul Singh. 1997. Handbook of Food Engineering Practice. CRC Press, Boca Raton, FL, USA.
17. Robert E. Treybal. 1980. Mass Transfer Operations, 3rd Ed. McGraw-Hill Book Company, Auckland, USA.
18. Warren L. McCabe, Julian Smith, Peter Harriott. 2004. Unit Operations of Chemical Engineering, 7th Ed. McGraw-Hill, Inc., NY, USA.
19. Christie John Geankoplis. 2003. Transport Processes and Separation Process Principles (Includes Unit Operations), 4th Ed. Prentice-Hall, NY, USA.
20. George D. Saravacos and Athanasios E. Kostaropoulos. 2002. Handbook of Food Processing Equipment. Springer Science+Business Media, New York, USA.
21. J. F. Richardson, J. H. Harker and J. R. Backhurst. 2002. Coulson & Richardson's Chemical Engineering, Vol. 2, Particle Technology and Separation Processes, 5th Ed. Butterworth-Heinemann, Oxford, UK.
22. R. Paul Singh and Dennis R. Heldman. 2014. Introduction to Food Engineering, 5th Ed. Elsevier, Amsterdam, The Netherlands.
23. Warren L. McCabe, Julian Smith, Peter Harriott. 2004. Unit Operations of Chemical Engineering, 7th Ed. McGraw-Hill, Inc., NY, USA.
24. Albert Ibarz and Gustavo V. Barbosa-Cánovas. 2003. Unit Operations in Food Engineering. CRC Press, Boca Raton, FL, USA.
25. Christie John Geankoplis. 2003. Transport Processes and Separation Process Principles (Includes Unit Operations), 4th Ed. Prentice-Hall, NY, USA.
26. George D. Saravacos and Athanasios E. Kostaropoulos. 2002. Handbook of Food Processing Equipment. Springer Science+Business Media, New York, USA.
27. J. F. Richardson, J. H. Harker and J. R. Backhurst. 2002. Coulson & Richardson's Chemical Engineering, Vol. 2, Particle Technology and Separation Processes, 5th Ed. Butterworth-Heinemann, Oxford, UK.
28. P. Fellows. 2000. Food Processing Technology: Principles and Practice, 2nd Ed. CRC Press, Boca Raton, FL, USA.
29. R. K. Sinnott. 1999. Chemical Engineering, Vol. 6, Chemical Engineering Design, 3rd Ed. Butterworth-Heinemann, Oxford, UK.

1.2.1

FPN – SCP 3.5.1: FOOD SERVICE MANAGEMENT

OBJECTIVES:

Enhance your entrepreneurial qualities and skills and learn to: develop menus and pricing, manage human and material resources and plan strategies for promoting restaurants.

Theory

16 Hours

UNIT I

Types of food services. Organization: Definition, types. Management: tools of management.

UNIT II

Personnel management. Books, records and record keeping. Cost control in food services. Menu planning.

UNIT III

Meal services management: types of services. Quantity food production: Principles involved in development of recipes in large scale cooking, Standardization of recipes, Utilization of left over foods.

UNIT IV

Planning of layout and equipment for foods services. Sanitation and hygiene in handling foods. Personnel hygiene and its importance.

Practicals

36 hours

1. Standardization of recipes:
2. Recipes planning and preparation,
3. Modification in basic recipe,
4. Preparation of standard recipe.
5. Use of left over foods.
6. Visit to different types of food service institutions and study the Organization, physical plan and layout,
7. Visit to different types of food service institutions and study the Food service equipments
8. Visit to different types of food service institutions and study the sanitation and hygiene.
9. Practical experience in organization and management of a college cafeteria/ hotels.
10. Report Writing on the Visits

LEARNING OUTCOMES

After successful completion of the program, you should be able to:

- Manage the human resources within a food services organization or department
- Communicate appropriately with clients, staff and management
- Apply food services technology and operate industry equipment
- Develop nutritional menus for food service production
- Manage food service production
- Demonstrate professional behaviours expected within the food service industry
- Manage food services budgets

Suggested Readings

1. Fuller J. 1966. Chefs Manual and a Kitchen Management.
2. B.T. Badtsford Ltd. Kazarian EA. 1975. Food Service Facilities - Planning, AVI Publ.
3. Kotschevar LH. 1961. Food Service, Layout and Equipment Planning. John Wiley & Sons.
4. Sethi M & Malhan S. 1997. Catering Management - An Integral Approach. New Age International.
5. Treat N & Richards 1997. Quantity Cookery. Little Brown & Co.
6. West BB, Wood L, Harger VF & Shugart GS. 1977. Food Service in Institutions, John Wiley & Sons.

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FPN – SCT 3.5.3: NUTRITION EDUCATION AND COUNSELING

Theory

52 hours

Objectives:

1. To reinforce specific nutrition-related practices or behaviors to change habits that contributes to poor health.
2. Helps to learn new information about nutrition and to develop the attitudes, skills and confidence that they need to improve their nutrition practices.

UNIT I

10 hours

Objectives, Principles and Importance of nutrition education. Nutrition Counseling: Definition, concept, the role of clinical dietician, the recipients, counseling environment.

Nutritional problems and identification of target groups. Imparting nutrition education through different communication techniques for individuals, group and mass contact programmes. Developing messages for imparting nutrition education.

UNIT II

15 hours

Factors to be considered for counseling: Nutritional and health conditions, including body care, skin, hair, face, hands, feet etc. Psychological conditions, food allergies, aging, gender related and other problems. Techniques for development of nutrition educational material and aids. Nutrition counselling for vulnerable groups and geriatrics. Counselling for dietary management of underweight, over weight, fever, diabetes, CVD, GIT, Liver and renal disorders. Nutrition and diet counselling for arthritis, cancer and gout. Planning effective counselling and nutrition education for selected groups.

UNIT III

15 hours

Assessment component: Methods of interview – verbal and nonverbal techniques. Counseling models – data analysis (dietary, biological, environmental, behavioral data). Facilitator resource analysis – Culmination of the assessment process.

Planning component: Designing of counseling plans – goals & objectives, classifying objections, resource planning – client care plan and designing evaluation instruments.

Implementation component: counseling the client/patient – client concurrence, co-ordination of care plans-the provision of learning experience.

Evaluation component: Measuring the success of performance of client and evaluating the counseling process.

UNIT IV

12 hours

Hand on experience: Preparation of counseling aids for any two disease conditions and conduct counseling sessions

Learning outcomes:

Students will be able to demonstrate a variety of communication strategies in nutrition and food education emphasizing information technology

- Produce oral and written communications for a group education session
- Interview individuals for diet histories
- Counsel individuals

References

1. Text book of Dietetics, B srilaksmi
2. Charley, H. (1982): Food Science (2nd edition), John Wiley & Sons, New York.
3. Potter, N. and Hotchkiss, J.H. (1996): Food Science, Fifth edition CBS Publishers and Distributors, New Delhi.
4. Belitz, H.D. and Grosch, W (1999) Food Chemistry, (2nd edition), Springer, New York.
5. Abers, R.J. (Ed) 1976) Foams, Academic Press, New York.

1.2.1

FPN- OET - 3.6: NUTRITION AND HEALTHY LIFESTYLE

Theory

52 Hours

Course Objectives

- To interpret and apply nutrition concepts to evaluate and improve the nutritional health of communities and to understand the triad of health, hygiene and nutrition.
- To interpret and apply nutrition concepts of balance diet and modified diet which will focus on disease conditions to evaluate and improve the nutritional health of individuals.
- To assess the nutritional status of an individual and the community based on different indicators. To identify and apply food principles to food and nutrition systems.
- To integrate the knowledge and skills of food labeling in food safety and nutrition security with professional issues affecting the nutrition and/or dietetics.

UNIT I

10 hours

Food, Nutrition, Health and Hygiene – Interrelationships - Concepts, Dimensions, Determinants, Inter-relationship

Nutrients in Food: Types, functions, sources, deficiency/toxicity of macro and micronutrients

Conserving and enhancing nutritive value of food: concept, conserving food nutrients, germination and fermentation, supplementation and combination, fortification

UNIT II

15 hours

Balanced Diet: Concept, food pyramid, dietary guidelines, minimum dietary diversity

Food Selection for health and fitness: concept, food groups and selection from each food group, nutrient profiling of packaged foods, HFSS food

Meal planning and minimizing food wastage: concept, principles, advantages and factors affecting food planning, RDA, portion size, minimizing food wastage

UNIT III

15 hours

Assessment of Nutritional Status: Concept and type of assessment, anthropometry, biochemical, clinical and dietary assessment

Lifestyle for health and wellness: Dietary, physical activity and exercise, sleep, stress, addiction

Personal Hygiene: Concept, WASH, GHP

Common Health Problems: Concepts – Disease, Infectious and non-infectious diseases, prophylaxes, immunity, causes and preventive measures, infectious diseases, non-infectious diseases

UNIT IV

12 hours

Food Labels: understanding and interpreting – concept, mandatory and non-mandatory labeling requirements, interpreting food labels

Food Safety: concept, food quality, food contamination, food spoilage, health hazards, safe handling of food