Syllabus templateM.Sc. FOOD SCIENCE & NUTRITION SEMESTER I

Semester: I	
Course : Food Science & Nutrition	
Paper Title: Human Nutrition & Community Nutrition	
Paper code: M2C4FN260131T	**Credits:6**
Hours/week : 6	
Category: Core/MDC/SEC/VAC : CORE (Major)	
Theory / Practical / Composite : Theory	
No of Modules : 2 Modules	

Course Overview: This course tries to equip students with the knowledge and skills to assess nutritional status, prevent diet-related illnesses, and promote healthy eating habits at both individual and population levels. This course emphasizes to bridge the gap between scientific nutritional knowledge and practical application within communities.

Course Outcome:

1. Remember the concept of nutrients for the functional organization of the human body.

2. Understand the historical perspective of nutrient requirements.

3. Apply the knowledge of nutrients for balanced and nutrient rich healthy diet for different population groups.

4. Analysethe importance of nutrition immunity interactions and their implications.

5. Evaluatecritically the methodology and derivation of requirements for specific micro and macronutrients.

6. Create and develop new approaches & various measures for enhancing nutritional quality of diets.

Prerequisites: ***Basic knowledge about any prior course***

SYLLABUS

UNIT/Module	CONTENT	HOURS or NUMBER OF CLASSES	CO Mapping	COGNITIVE LEVEL
I. / I **Module I – Human Nutrition**	**Human Nutrient Requirements–Macronutrients** a) Historical perspective of nutrient requirements. b) Critical evaluation of sensitive methods and derivations of requirements and recommended dietary allowances of macronutrients for all age groups: -Energy, -Carbohydrates and dietary fibre, -Proteins and amino acids,	**6**	**CO1,CO2,CO4**	**K1,K2,K4**

		-Lipids, -Water c) Critical evaluation of national and international nutrient allowances; factors affecting the requirements.			
II.	**/I**	**Human Nutrient Requirements- Micronutrients** a) Critical evaluation of sensitive methods and derivations of requirements and recommended dietary allowances of micronutrients for all age groups: - Water soluble vitamins - Fat soluble vitamins - Minerals and trace elements b) Critical evaluation of national and international nutrient allowances; factors affecting the requirements, dietary guidelines for Indians.	**6**	**CO1,CO3,CO5,**	**K1,K3,K5**
III.	**/I**	**Nutrition in Special Conditions** a) Extreme temperatures- low and high b) High altitude - c) Space nutrition and food systems - d) Sports nutrition –	**5**	**CO1,CO3,CO5**	**K1,K3,K5**
IV.	**/I**	**Interactions of Nutrition, Immunity and Infection and emerging concepts** a) Host defense mechanisms and nutrients essential in the development of immune system. b) Effect of Infections on the nutritional status of an individual. c) Nutrient deficiencies and excesses affecting the immuno-competence and susceptibility to infections. d) Ongoing nutrition transition and its implications. e) Changing trends in life style patterns in population groups and their implications. f) Nutrigenomics, nutraceuticals, bioactive compounds.	6	**CO2,CO3,CO4**	**K2,K3,K4**
V.	**/I**	**Improving Nutritional Quality of Diets** a) Ways of enhancing nutritional quality of diets. b) Assessment of protein quality- By	**7**	**CO2,CO5,CO6**	**K2,K5,K6**

	various indices and their interpretation c) Dietary diversification. d) Bioavailability of nutrients. e) Nutrient losses during cooking and processing			
VI. /II **Module II- Community Nutrition**	**Introduction** to concept of community, rural and urban communities, community health, healthcare, community nutritional and its future projections.	5	**CO1,CO2,CO3, CO4**	**K1,K2,K3 ,K4**
VII. /II	**Protein Energy malnutrition** – etiology, prevalence, causes, prevention and control. **Other Major nutritional problems** – Macro nutrient deficiencies and micronutrient deficiencies, etiology, symptoms, prevention and control.	6	**CO3,CO4,CO6**	**K3,K4,K6**
VIII. /II	**Assessment of nutritional status** – meaning need, objectives, and techniques. Primary Methods: Anthropometric measurement, Weight, Height skin fold, Head circumference MUAC. Chest circumference, use of growth chart, Biochemical assessment, clinical assessment, Diet surveys. **Secondary Methods**: Vital statistics, Mortality rates, survival rate, morbidity rate, fertility rate.	6	**CO1,CO2,CO3, CO5**	**K1,K2,K3 ,K5**
IX. /II	**Nutrition Monitoring** and Nutrition surveillance objectives and components of nutrition monitoring and current programmes. Nutrition Surveillance – Objectives, Uses, infrastructure and computerization **Nutrition Education** – Need and scope, importance, theories, Nutrition	5	**CO2,CO5,CO6**	**K2,K5,K6**

	education programmes – formulations, Implementation and Evaluation. **Nutrition Programmes** in developing and developed countries – Role of various agencies – National, International and voluntary. **National & International Agencies**: Introduction, mission, vision, objectives, functions, policies of CFTRI,NIN,FAO, NIPCCD, CARE,WHO, UNICEF,ICMR,ICAR,CSIR.			

Text Books

1. Mayer, J., Human Nutrition, Charles, C. Thomas, spring field.
2. Michael, J. Gibney, Barrie, M. Margetis, John, M. Kearney. Lenore Arab. Public Health Nutrition. Blackwell science, Blackwell Publishing Company (2004).
3. Textbook of Food Science and Nutrition by Sunita Roy Chowdhury and BaniTamberAeri,

Suggested readings

1. Exercise physiology, fitness and sports physiology by B. Srilakshmi, V. Suganthi, C. kalaivani Ashok, 2016
2. A Laboratory Manual of Food Analysis by Shalini Sehgal, Year – 2016

Web Resources

1.

2.

Evaluation Theory CIA: 30 Semester Exam: 70

Paper Structure for Theory Semester Exam Module :
Full marks 70
Module 1: 35 marks
SHORT QUESTION: FROM 7 QTNS ANSWER 5 (EACH 1 MARK) = 5x1=5
LONG QUESTION: FROM 5 QTNS ANSWER 3 (EACH 10 MARKS)= 3x10=30

Module 2: 35 marks
SHORT QUESTION: FROM 7 QTNS ANSWER 5 (EACH 1 MARK) = 5x1=5
LONG QUESTION: FROM 5 QTNS ANSWER 3 (EACH 10 MARKS)= 3x10=30

Course outcomes (COs) and Cognitive Level Mapping

COs	CO Description	Cognitive levels
CO1	**Remember** thenutrient requirements of the human body.	K1
CO2	**Understand**the historical perspective of nutrient requirements.	K2
CO3	**Apply** the knowledge of nutrients to stay updated with	K3

	emerging concepts in nutrition.	
CO4	**Analyse**andlearn various measures for enhancing nutritional quality of diets.	K4
CO5	**Evaluate**the methodology and derivation of requirements for specific micro &macronutrients.	K5
CO6	**Create** and develop Nutrition Monitoring and Nutrition surveillance methods.	K6