

**Mukesh Patel School of Technology Management and Engineering
Basic Science & Humanities Department**

Course Policy

Program/Branch/Semester	:	BTI (computer) sem IX
Academic Year	:	2023-24
Course Code & Name	:	Nutrition for Health
Credit Details	:	L T P C 3 0 0 3
Course Coordinator Faculty	:	Dr. Ketakee Durve
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Course Faculty: Dr. Ketakee Durve		
<i><u>Queries by Emails are encouraged.</u></i>		
Course link	:	Portal Link MS Teams Link

1 Introduction to the Course

1.1 Importance of the course

Good nutrition is essential to keeping current and future generations healthy across the lifespan. A nutritious diet supports average growth, development, and ageing. It helps people maintain healthy body weight, and lowers their chance of developing chronic diseases, all of which contribute to overall health and wellbeing.

1.2 Objective of the Course

The course intends to familiarize students with fundamentals of food, nutrients and their relationship to health. It will further help to create awareness about deriving maximum benefit from available food resources. It will impart knowledge regarding nutritional disorders coming from nutritional deficiencies.

1.3 Pre-requisite

Knowledge of Chemistry and Biology upto 12th standard or equivalent

2 Course Outcomes (CO) and mapping with Program Outcomes (PO)

2.1 Course Outcomes

After successful completion of the course, a student will be able to-

1. Understand the concept of nutrition and health in a holistic and multidimensional way
2. Evaluate the inter relation between nutrition, food, diet and related health
3. Design diet rules and plans for healthy living by realizing the ill effects of nutritional deficiency

2.2 CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												

3 Syllabus, Pre-class activity and References

3.1 Teaching and evaluation scheme

Teaching Scheme				Evaluation Scheme	
Lecture Hours per week	Practical Hours per week	Tutorial Hours per week	Credit	Internal Continuous Assessment (ICA) As per Institute Norms (100 Marks)	Theory (3 Hrs, 100 Marks)
3	0	0	3	Marks Scaled to 50	Marks Scaled to 50

3.2 Syllabus

Unit	Description	Duration
1.	Basic concepts in food and nutrition: Basic terms used in study of food and nutrition. Understanding relationship between food, nutrition and health. Functions of food and nutrients - Physiological, psychological and social	7

2.	<p>Nutrients from Food groups and methods of cooking:</p> <p>Nutrients: Functions, dietary sources and clinical manifestations of deficiency/ excess of the following nutrients: Carbohydrates, lipids and proteins, Fat soluble vitamins-A, D, E and K, Water soluble vitamins – thiamin, riboflavin, niacin, pyridoxine, folate, vitamin B12 and vitamin C, Minerals – calcium, iron and iodine</p> <p>Selection, nutritional contribution and changes during cooking of the following food groups: Cereals, Pulses, Fruits and vegetables, Milk & milk products, Eggs, Meat, poultry and fish, Fats and Oils</p> <p>Methods of Cooking and Preventing Nutrient Losses: Dry, moist, frying and microwave cooking. Advantages, disadvantages and the effect of various methods of cooking on nutrients. Minimizing nutrient losses</p>	7
3.	<p>Basic concepts of meal planning:</p> <p>Food groups and concept of balanced diet. Food exchange list. Concept of Dietary Reference Intakes. Factors effecting meal planning and food related behavior. Dietary guidelines for Indians and food pyramid</p>	8
4.	<p>Introduction to Nutritional deficiency diseases:</p> <p>Causes, symptoms, treatment, prevention of the following: Protein Energy Malnutrition (PEM), Vitamin A Deficiency (VAD), Iron Deficiency Anaemia (IDA), Iodine Deficiency Disorders (IDD), Zinc Deficiency, Flurosis. Causes and symptoms of food allergies and food tolerances</p>	8
5.	<p>Nutrition and Fitness:</p> <p>Definition of fitness, health and related terms. Assessment of fitness. Approaches for remaining fit, Role of nutrition in physical fitness and sport, Nutritional supplements. Importance and benefits of physical activity. Weight Management: Health complications of overweight and obesity. Diet and exercise for weight management. Fad diets. Principles of planning weight reducing diets.</p>	8
6.	<p>Nutrition standards:</p> <p>quantitative values that specify the amounts of the key nutrients for the age-grade groups, nutrition guidelines followed worldwide, global nutrition policy</p>	7
	Total hours	45

3.3 Pre-class activity

Outline for preliminary study to be done for each unit will be provided prior to commencement of each unit. Preliminary study material (video links, presentation, notes, etc.) will be made available on the student portal. Students are expected to go through this material before attending the upcoming session. It is expected that the students put in at least two hours of self-study for every one hour of classroom teaching. During the lecture session, more emphasis will be given on in-depth topics, practical applications and doubt solving.

3.4 References:**Text Books:**

1. Srilakshmi B. Nutrition Science; New Age International (P) Ltd. 2012.
2. Suri S. and Malhotra A. Food Science, Nutrition & Food Safety Pearson India Ltd. 2014

Reference Books:

1. Wardlaw GM, Hampl JS. Perspectives in Nutrition. McGraw Hill. Seventh Ed; 2007

Note: The latest edition of books should be referred.

4 Assessment Policy4.1 Component wise Continuous Evaluation Internal Continuous Assessment (ICA) and Term End Examination (TEE)

Assessment Component	ICA (100 Marks) (Marks scaled to 50)				TEE (100 marks) (Marks scaled to 50)
	Class Test 1 and Class Test 2	Assignment	Group Presentation	Class Participation	
Weightage	20%	15%	10%	5%	50%
Marks	20+20	20	20	20	100

4.2 Assessment Policy for Internal Continuous Assessment (ICA)

Assessment of ICA comprises of the following components:

1. Class test 1 and 2 (40 marks)

- a. Two class tests will be conducted as per the academic calendar.
- b. It may be conducted online/ offline for 20 marks each

2. Assignments (30 marks)

Written assignments will be given to students based on the theory units learnt in class (total 6 assignments during the semester). Students will be assessed on punctuality of submission and correctness of the content.

3. Presentation / report on real life applications / poster / videos (2-3 videos of 2-3 minute duration each) on advanced topics for submission (20 marks)

- Presentation will be a group activity. Faculty will make group of 2-3 students.
- Every group will present a pre-approved topic
- Report/poster/animated videos submission will be a group activity, selected by the students in the group.
- Assessment will be based on the content, quality, understanding and originality, of work presented.

4. Class Participation (10 marks)

The course instructor will ask some questions after teaching every unit. The question could be asked to a chosen student or a student group (of 4 students). Marks will be given for correct answer. The idea is to encourage students to pay attention in class and actively participate. These marks will be added in ICA class participation component.

4.3 Assessment Policy for Term End Examination (TEE)

A written examination of 100 marks for specified duration will be conducted for the course as per the academic calendar.

5 Lesson Plan

Session no.	Topic	Mapped CO	Text Book	Extra reading
1	Course policy discussion			
2	Basic terms used in study of food and nutrition. Understanding relationship between food, nutrition and health.		TB1	RB1
3	Functions of food and nutrients - Physiological, psychological and social		TB1	RB1
4	Assignment-1			
5	Nutrients: Functions, dietary sources and clinical manifestations of deficiency/ excess of the following nutrients: Carbohydrates, lipids and proteins		TB1	RB1
6	Fat soluble vitamins-A, D, E and K,		TB1	RB1
7	Water soluble vitamins – thiamin, riboflavin, niacin, pyridoxine, folate, vitamin B12 and vitamin C		TB1	RB1

8	Minerals – calcium, iron and iodine		TB1	RB1
9	Selection, nutritional contribution and changes during cooking of the following food groups: Cereals, Pulses, Fruits and vegetables, Milk & milk products, Eggs, Meat, poultry and fish, Fats and Oils		TB1	RB1
	Tutorial-1			
10	Methods of Cooking and Preventing Nutrient Losses: Dry, moist, frying and microwave cooking. Advantages, disadvantages and the effect of various methods of cooking on nutrients. Minimizing nutrient losses		TB1	RB1
11	Assignment-2		TB1	RB1
12	M-1			
13	Basic concepts of meal planning: Food groups and concept of balanced diet. Food exchange list.		TB1	RB1
14	Concept of Dietary Reference Intakes. Factors effecting meal planning and food related behaviour. Dietary guidelines for Indians and food pyramid		TB1	RB1
15	Causes, symptoms, treatment, prevention of: Protein Energy Malnutrition (PEM), Vitamin A Deficiency (VAD), Iron Deficiency Anaemia (IDA),		TB1	RB1
16	Causes, symptoms, treatment, prevention of: Iodine Deficiency Disorders (IDD), Zinc Deficiency, Fluorosis		TB1	RB1
17	Tutorial-2			
18	Tutorial-3			
19	Causes and symptoms of food allergies and food intolerances		TB1	RB1
20	Assignment-3			
21	M-2			
22	Definition of fitness, health and related terms. Assessment of fitness. Approaches for remaining fit		TB1	RB1

23	Role of nutrition in physical fitness and sport, Nutritional supplements. Importance and benefits of physical activity		TB1	RB1
24	Weight Management: Health complications of overweight and obesity.		TB1	RB1
25	Tutorial-4			
26	Diet and exercise for weight management. Fad diets. Principles of planning weight reducing diets.			RB1
27	Assignment-4			
28	quantitative values that specify the amounts of the key nutrients for the age-grade groups,		TB1	RB1
29	nutrition guidelines followed worldwide, global nutrition policy.		TB1	RB1
30	Assignment-5		TB1	RB1
31	Assignment-6		TB2	RB1
32	Tutorial-5		TB2	RB1
33	Tutorial-6		TB2	RB1
34	Discussion and revision		TB1, TB2	RB1
35	Discussion and revision		TB1, TB2	RB1
36	Class participation		TB1, TB2	RB1
37	Class participation		TB1, TB2	RB1
38	Presentations		TB1, TB2	RB1
39	Presentations		TB1, TB2	RB1
40	Class participation		TB1, TB2	RB1
41	Class participation		TB1	RB1
42	Class participation		TB1	RB1
43	Presentations		TB1	RB1
44	Presentations		TB2	RB1
45	Presentations		TB2	RB1

6 Teaching-learning methodology

Faculty will make a group of 2-3 students for any group based activity such as class participation, question answer session. Lecture session will be conducted as follows-

1. Lectures:

- Outline for preliminary study (to be done for each unit) will be provided prior to commencement of each unit.
- Deeper concepts and applications would be explained through Presentation and Video Lectures.
- Numerical based on concept will be solved during the session.

7 Active learning techniques

Active learning is a method of learning in which students are actively or experientially involved in the learning process. Following active learning techniques will be adopted for the course.

1. **Muddiest topic:** Faculty will find out the least understood point/topic in the session. This topic is then further explained to ensure that it is understood well.
2. **The "One Minute Paper":** The faculty will ask students to take out a blank sheet of paper, pose a question (either specific or open-ended), and give them one (or perhaps two - but not many) minute(s) to respond.
3. **Wait Time:** Rather than choosing the student who will answer the question presented, this variation has the faculty WAITING before calling on someone to answer it.
4. **Blended Learning:** Students will be introduced to the topic at home while the faculty will discuss the in-depth topics, applications and numerical problems in the lecture session. Outline for preliminary study to be done for each unit will be provided prior to commencement of each unit. Preliminary study material (video links, presentation, notes, etc.) will be made available on the student portal / Microsoft Teams
5. **Frame a question:** Student will be asked to design and frame their own questions pertaining to the topic being taught. The idea is to stimulate students' curiosity, engage the students in collaborative teaching and learning, and motivating students to develop deeper understating of the topic.
6. **Brainstorming:** Students will be asked to generate ideas on a certain topic, category or question while the faculty will facilitate and record the answers on the student portal / Microsoft Teams

8 Course Material

Following course material will be uploaded on the student portal / Microsoft Teams

- Course Policy
- Lecture Notes/Videos
- List of Books / Reference Books / NPTEL video lectures link

- Assignments
- List of Program Outcomes

9 Course Outcome Attainment

Following means will be used to assess attainment of course learning outcomes.

- Use of formal evaluation components of continuous evaluation, assignments, semester end examination
- Informal feedback during course conduction

10 Academic Integrity Statement

Students are expected to carry out assigned work under Internal Continuous Assessment (ICA) independently. Copying in any form is not acceptable and will invite strict disciplinary action. Evaluation of corresponding component will be affected proportionately in such cases. Plagiarism detection software will be used to check plagiarism wherever applicable. Academic integrity is expected from students in all components of course assessment.