



TEACHING PLAN: PRINCIPLES OF FOOD AND NUTRITION

Course Teacher: Mr. Mukesh Choudhary

SCHOOL: SOAS		ACADEMIC SESSION: 2023 – 2024		FOR STUDENT’S BATCH: 6 th SEM		
1	Course Code	AFT-302				
2	Course Title	PRINCIPLES OF FOOD AND NUTRITION				
3	Credits	2 (2+0)				
4	Learning Hours		Contact Hours	48		
			Assessment	20		
			Guided Study	32		
			Total hours	100		
5	Course Objective	1. This course provides the knowledge about the concepts of food science. 2. The course provides knowledge of food composition and chemistry. 3. It also presents a brief overview of food microbiology, principles and methods of food processing and preservation. 4. The course provides the idea of food regarding the malnutrition.				
6	Course Outcomes	1. Students will be able to critically evaluate information on food science and nutrition issues appearing in the popular press. 2. Students will be able to discuss the important pathogen and spoilage microorganism in foods. 3. Students will be able to discuss basic principles and practices of cleaning and sanitation in food preparation operation. 4. Students will be able to identify and explain nutrients in foods and the specific functions in maintaining health.				
7	Outline Syllabus:					
7.01	Paper Code	Unit		Reference Number	Teaching Methods	
7.02	PS-201	UNIT-I CONCEPT OF FOOD SCIENCE	a) Concepts of Food Science (definitions, measurements, density, phase change, pH, osmosis, surface tension, colloidal systems etc.);	Chaudhary, Principles of Food Science and Nutrition pp. 1-5	Lecture , ppt	

		UNIT-II FOOD CHEMISTR Y	a) Food composition and chemistry (water, carbohydrates, proteins, fats, vitamins, minerals, flavours, colours, miscellaneous bioactives, important reactions)	Chaudha ry, Principl es of Food Science and Nutritio n pp. 6- 10	Lec ture and PPT
		UNIT-III FOOD MICROBIOL OGY	a) Food microbiology (bacteria, yeast, moulds, spoilage of fresh & processed foods, Production of fermented foods) b) Principles and methods of food processing and preservation (use of heat, low temperature, chemicals, radiation, drying etc.)	Chaudha ry, Principl es of Food Science and Nutritio n pp. 11-18	Lec ture and PPT
7.03		UNIT-IV: LATEST TREND	a) Food and nutrition, Malnutrition (over and under nutrition) b) nutritional disorders c) Energy metabolism (carbohydrate, fat, proteins); Balanced/ modified diets; Menu planning d) New trends in food science and nutrition	Chaudha ry, Principl es of Food Science and Nutritio n pp. 19-36	Lec ture and PPT
8	Course Evaluation				
8.1	COURSE ASSESEMENT: 50%				
8.1.1	Attendance	5 %			
8.1.2	Homework	5 %			
8.1.3	ClassTest	5 %			
8.1.5	Presentation	5%			
8.1.6	Any other	20%			
8.2	MTE	10%			
8.3	End-term examination: 50%				
9	Text Books & References				
9.1	Text book	1. Srilakshmi, B. 2010. Text Book of Food Science. New age international (P) limited, publisher, New Delhi 2. Sehgal, S. and Raghuvanshi, R.S. 2007. Text Book of Community Nutrition, ICAR Publication. 3. Khaddar V. 1999. Text Book of Food. Storage and Preservation. Kalyani Publishers, New Delhi. 4. Srilakshmi, B. 2010. Text Book of Nutrition Science. New age international (P) limited, publisher, New Delhi.			

9.2	Reference	1. Owen R, Fennema. 1996. Food Chemistry, 3rd Ed. Marcel Dekker, Inc., New York, USA. 2. M. Shafiur Rahman. 2007. Handbook of Food Preservation, 2nd Ed. CRC Press, Boca Raton, FL, USA. 3. Carolyn D. Berdanier, Elaine B. Feldman and Johanna Dwyer. 2008. Handbook of Nutrition and Food, 2nd Ed. CRC Press, Boca Raton, FL, USA. 4. Sehgal, S. and Raghuvanshi, R.S. (2007) Text Book of Community Nutrition. ICAR, New Delhi. 5. Agarwal, A and Udipi, S. (2014). Text Book of Human Nutrition. Jaypee Medical Publication, Delhi
9.3	Video References	1. https://www.youtube.com/watch?v=j2UPjOpkkac 2. https://www.youtube.com/watch?v=kf9yZR4ZnU 3. https://www.youtube.com/watch?v=Y6kMD3sRp2Q 4. https://www.youtube.com/watch?v=zp4gEqN_Zfk 5. https://www.youtube.com/watch?v=zp4gEqN_Zfk 6. https://www.youtube.com/watch?v=1hZ39eTaVGQ 7. https://www.youtube.com/watch?v=ZF0hIPAB93c

Mapping of Outcomes v. Topics

Outcome no. → Syllabus topic↓	1	2	3	4	5
Paper Code. Unit I (a)	✓				✓
Paper Code. Unit II (a)	✓			✓	✓
Paper Code. Unit III (a)			✓		
Paper Code. Unit III (b)			✓		
Paper Code. Unit IV (a)					✓
Paper Code. Unit IV (b)					✓
Paper Code. Unit IV (c)					✓
Paper Code. Unit IV (d)					✓

QUESTION BANK

1. Define the term nutrition
2. What do you mean by “malnutrition”?
3. Define Health
4. What is RDA?
5. What is the RDA for energy and protein for a coal mine worker?
6. What is “Balanced Diet”?
7. Define Energy
8. Write two units of energy
9. Define Reference Women
10. Define Reference Men
11. Define BMR
12. Define Growth
13. Mention any two importance of RDA
14. What do you mean by the term development?
15. Classify amino acids according to their structure and give one example of each class
16. Discuss the digestion of Carbohydrates in our digestive system.
17. Discuss the digestion of Fats in our digestive system
18. Discuss the digestion of Protein in our digestive system
19. Classify Carbohydrates according to their structures. Write the effects of too high and too low intake of carbohydrate
20. Discuss about the functional role of sugars in food
21. How blood glucose is regulated in our body?
22. Discuss the functions of carbohydrates in our body.

23. Discuss the functions of proteins in our body
 24. What do you mean by “nutritional status”?
 25. What are ‘Nutrition Surveillance’ & ‘Nutrition Monitoring’? Write in short about the need, objectives & importance of nutritional surveillance.
 26. Discuss the role of NIN and ICMR as national agencies for combating malnutrition.
 27. Describe any four methods of diet survey. Which is the best method of diet survey? Justify our answer. Discuss any six preventive measures for PEM.
 28. What is the full form of NADP and C-ATP?
 29. What is glycolysis?
 30. Define glycogenesis?
 31. Name the sugar and bases present in DNA
 32. Name any two basic amino acids.
 33. Name any two acidic amino acids
 34. Give an example of water borne disease and its causative agent
 35. What is a bacteriocidal agent? Give an example
 36. Define pasteurization.
 37. Define radiation and sterilization.
 38. Define disinfection. Name some disinfectants.
 39. Name some bacteria involved with food spoilage.
 40. What is meant by food spoilage?
 41. Name four causative agents of food spoilage.
 42. What is dry heat sterilization?
 43. Define moist heat sterilization.
 44. Name some preservatives used in food industry
 45. Describe in details the need for maintenance of hygiene of food. Describe the various techniques used for microbiological testing of food
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PROJECTS (To be given to group of students)

1. To make the jam from apple
2. To make the sauce from the fresh tomatoes
3. Field Food Industry
4. MOOC Courses