AC – 20/04/2024
Item No. – 6.6 Sem. I (8a)

As Per NEP 2020

University of Mumbai

Syllabus for Basket of OE	
Board of Studies in Biotechnology	
UG First Year Programme	
Semester – I	
Title of Paper	**Credits 2/ 4**
I) OE: Nutrition, Life style diseases and their management	**2**
II)	**2**
From the Academic Year (2023-24 Progressively)	

Name of the Course: Nutrition, Life style diseases and their management

Sr. No.	Heading	Particulars
1	**Description the course :** **Including but Not limited to :**	This syllabus offers a comprehensive understanding of nutrition's role in preventing and managing lifestyle diseases, with a focus on theoretical foundations and practical applications. Students delve into the relevance and usefulness of nutrition knowledge, preparing them to address contemporary health challenges effectively.
2	**Vertical :**	Open Elective
3	**Type :**	Theory
4	**Credit**:	2 credits
5	**Hours Allotted :**	30 Hours
6	**Marks Allotted**:	50 Marks
7	**Course Objectives**: **CO1:** To understand the principles of nutrition and their role in human health. **CO2 :** To learn about various nutrients,their sources, functions and requirements **CO3:** To understand Diet planning **CO4:** To understand the relationship between nutrition and various health conditions **CO5**: . To create awareness about arising from day to day activities which could be prevented/ managed by controlling life style.	
8	**Course Outcomes**: Learner will be able to **OC1**: Demonstrate knowledge of principles of nutrition science **OC2:** Develop dietary plans to meet nutritional needs of individual across the life span and in various health conditions. **OC3:** Understand the role of nutrition in the prevention and management of chronic diseases **OC4:** Understand concept of life style disorders and their impact on individual health and well being **OC5:** Learn strategies for prevention, early detection and management of lifestyle disorders through lifestyle modifications, including diet, exercise.	

9	**Modules**:- **Module 1: Nutrition and Dietetics**
	1. Food, Nutrition and Nutrients: Food groups based on functions and chemical nature. Nutritional disorders due to deficiency and excess **(3 lectures)** **2. Energy Value of Foods:** Methods of measurement of energy, value of nutrients, BMR (basal metabolic rate) - measurement and factors affecting BMR **(2 lectures)** **3. Adequate Diet:** food guide pyramid, balanced diet **(1 lecture)** **4. Cereals and Millets:** composition, nutritive value and nutrient losses during processing. **(2 lectures)** **5. Pulses, Legumes, Nuts and Oilseeds:** composition, nutritive value and nutrient losses during processing. Importance of germination and malting, anti-nutritional factors. Rancidity of oils and preservation. **(3 lectures)** **6. Vegetables and fruits:** Vegetables-composition and nutritive value, changes during cooking, storage. Fruits - composition, nutritive value, storage and ripening, enzymatic browning and its prevention. **(2 lectures)** **7. Animal Foods:** Composition, nutritive value of Milk, Eggs, Poultry, Meat and Fish **(2 lectures)**
	Module 2: Life style Diseases and their management
	1. Concept of lifestyle diseases- Importance of lifestyle factors in preventing disease development: diet, exercise, smoking, alcohol etc. **(2 lectures)** **2. Diabetes-** Type 1 and type 2, Characteristics, causes, diagnosis, prevention and management **(2 lectures)** **3. Cancer-**Characteristics, causes, diagnosis, prevention, management, basis of treatment modalities **(2 lectures)** **4. Arteriosclerosis and cardiovascular diseases-** Myocardial infarction, congestive heart failure, ischemic diseases - causes, diagnosis and management, hypertension **(3 lectures)** **5. Obesity-** causes, prevention and management.**(2 lecture)** **6. Respiratory diseases, Cirrhosis and stroke (2 lectures)** **7. Importance of diet and physical exercise in health**. **(2 lectures)**
10	**Text Books:** **1. Fundamentals of Food and Nutrition, 4th Edition, Mudambi R. and Rajgopal M.V. 2001, New Age International Ltd. Publication** **2. Principles of Nutrition and Dietetics, 2nd Edition, Swaminathan M.** **3. Food Science, 5th Edition, 2011, Srilakshmi B. New Age International Publishers, New Delhi**

11	**Reference Books:** **1. Textbook of Lifestyle Medicine- Labros Sidossis and Stefanos Kales, Wiley 2020, ISBN # 978.1.119.70442.3** **2. Food Facts and Principles, Shakuntala Manay N., 2005,New Age International Publishers, New Delhi** **3. Food Science, Norman Potter N. 2007, CBS Publishers and Distributors, New Delhi**

12	**Internal Continuous Assessment: 40%**	**External, Semester End Examination : 60% Individual Passing in Internal and External Examination**
13	**Continuous Evaluation through:** Quizzes, Class Tests, presentation, project, role play, creative writing, assignment etc. (at least 3)	
14	**Format of Question Paper:** Semester End Examination theory - 50 Marks	

Sign of the BOS Chairman
Dr. Varsha Kelkar-Mane
Ad-hoc BoS (Biotechnology)

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Sign of the Offg. Dean
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