

AC-

Item No-



RayatShikshanSanstha's

Karmaveer Bhaurao Patil College, Vashi

Sector-15- A, Vashi, Navi Mumbai - 400 703

(Autonomous)

Department of Biotechnology

SKILL BASED COURSE

(UG & PG)

“FOOD SCIENCE AND NUTRITION”

1. NAME OF THE COURSE: - FOOD SCIENCE AND NUTRITION

2. OBJECTIVES OF THE COURSE:

Courses address the fundamentals of science of food and nutrition, and promote awareness regarding the importance of healthy diet and disease prevention as well as other current areas in nutrition.

Objective of the course is:

- To provide up-to-date knowledge in foods, nutrition.
- To promote health and disease management
- To prepare students for
 - working in diverse areas of food and nutrition
 - communication of nutrition principles to the individual/community
 - focusing on the relationship between nutrition and health.
- Students will be able to apply and incorporate the principles of food science in practical, real-world situations and problems.

3. Course Duration: 60 Hrs.

4. Intake Capacity: 30 students

6. Duration: 3 months

7. Evaluation Pattern:

Total: 100 Marks

Continuous Assessment (40%): 40Marks

| | |
|---|-------------|
| Quizzes/MCQ | 10 M |
| Assignments | 10M |
| Instructor observation and evaluation of lab performance Practical Reports | 15M |
| Participation and Attendance | 05M |

Final Examination (60%): 60 Marks

- Final Written Exam – 30 Marks
- Final Practical Exam – 30 Marks

8. Course taken by: Department of Biotechnology, KBP College, Vashi.

SYLLABUS :- FOOD SCIENCE AND NUTRITION

| No. | Module | Number of lectures |
|-----------------|---|--------------------|
| Module 1 | <p>Basic Food Science & Nutritional Biochemistry Basic concept of food, nutrition and nutrients, classification of food, and nutrients. Introduction to the biochemistry and the main properties of the principle constituents of foods- lipids, proteins, carbohydrates, vitamins, minerals in nutrition. Physiochemical properties of food.</p> | 07 |
| Module 2 | <p>Human Physiology, Microbiome and Human Nutrition - I Overview of human physiology – body systems, Human gut microbiome, Basis for computing nutrient requirements Body fluids and water balance Body composition</p> | 07 |
| Module 3 | <p>Human Nutrition – II and Nutraceuticals Energy metabolism Regulation of food intake Nutrition during life span Functional foods Overview of nutraceuticals Food laws</p> | 07 |
| Module 4 | <p>Healthy Diet, Over nutrition and Malnutrition Healthy diet, Constituents Over nutrition & health risk Malnutrition & health risk Health Risks of Being Underweight Major nutritional problems prevalent in India Nutrition policy and programs Advances in nutritional sciences Geriatrics and pediatric nutrition</p> | 07 |
| Module 5 | <p>Diet Therapy and Diet Counseling Introduction to clinical nutrition and dietetics Role and responsibility of dieticians Basic principles of planning a normal diet Objectives of diet therapy Dietary principles and management for special condition Nutrition Counseling Factors to be considered for counseling Assessment component</p> | 07 |

Practicals (25 Lectures)

1. Determination of pulse rate in resting condition and after exercise.
2. Determination of blood pressure by Sphygmomanometer.
3. Preparation of food from different food groups and their significance in relation to health.
4. Preparation of supplementary food for different age group and their nutritional significance.
5. Planning and preparation of low cost diet for malnourished child.
6. Comparison with norms and interpretation of the nutritional assessment data and its significance, Weight for age, height for age, weight for height, body Mass Index (BMI), Waist - Hip Ratio (WHR), Skin fold thickness.
7. Planning and preparation of adequate meal for different age groups with special reference to different physiological conditions: infants, pre-schooler, school children, adolescents, adults, pregnancy, lactation and old age.
8. Planning and preparation of normal diets.
9. Planning and preparation of Diets for the diseases.
10. Preparation of dishes suitable for older person- soft, semisolid and easily digestible balanced diet.
11. Preparation of audio visual aids like charts, posters, models related to health and nutrition education.
12. Role of dietitian /nutritionist in diet counseling.

References:

1. Fundamentals of Foods, Nutrition and diet Therapy, 5th Ed. , Mudambi, SR and Rajagopal MV.
2. Food Science, 2nd Ed., Mudambi, S, Rao SM and Rajagopal MV.
3. Handbook of Foods and Nutrition, 5th Ed., M Swaminathan.
4. Textbook of Human Nutrition, Bamji MS, Rao NP, Reddy V.

COURSE OUTCOMES:

- Explain the chemistry underlying the properties of various food components.
- Apply knowledge of the role of nutrition and healthy eating for disease prevention and wellness
- Explain the structure and components of food systems and analyze the relationships between nutritional health and food selection.
- Develop effective strategies to engage populations in promotion of nutritional well-being.
- Identify the structure and functional roles of macronutrients and micronutrients.
- Explain digestion, absorption, and metabolism of nutrients.
- Explain diet and lifestyle factors that affect body weight and risk of chronic disease.
- Identify effective, evidence-based strategies for health promotion and disease prevention.
- Learn importance of dietetics and counseling.