

**SEMESTER – III**  
**FITNESS CAPSULE**  
**GENERIC ELECTIVE**

**Programme: B.Sc.**  
**Course Code: U20/BIC/GE/301**  
**Course Type: GE**  
**No. of credits: 3**

**Max. Hours: 45**  
**Hours per week: 3**  
**Max. Marks: 50**

**Course Objective:**

Helps the students to learn and practice various forms of exercise which enables them to meet their academic, social, emotional and physical challenges of student life.

**Course Outcomes:**

- CO1:** Develop awareness for wellness and fitness with the knowledge of body composition and type.
- CO2:** Gain knowledge of human physiology in health and lifestyle disorders.
- CO3:** Appreciate the benefits of exercising and other muscular conditioning activities.
- CO4:** Integrate the nutritional aspect for fitness and wellness

**MODULE I: INTRODUCTION TO FITNESS****(15 Hrs)**

What is fitness? Wellness and fitness. Why fitness?  
Types of physical fitness – Health related and Skill related fitness.  
Fitness parameters – Body composition, flexibility, cardiovascular endurance, muscle strength, muscle endurance; Assessment of these parameters.  
Body type and Body shape.

**MODULE II: FITNESS PHYSIOLOGY****(15 Hrs)**

Bone – Structure and composition of bone; Tendons and ligaments; Age related changes in bone, osteoporosis. Posture related disorders.  
Muscle – Structure and composition; Major muscles involved in movement; Muscle tone, muscle twitch;  
Adipose tissue – Distribution of fat in men and women, Function, Why energy stored as fat?  
Life Style disorders-Obesity, PCOS, Diabetes, Coronary heart diseases, (CHD), Hypertension, Spondylitis, Frozen joints, Smoking and alcoholism.

**MODULE III: FITNESS-EXERCISE AND NUTRITION****(15 Hrs)**

Types of Exercise, Categories of physical exercise ; Benefits - Effect on the immune system, Effects on brain function ,Effects on depression, Effects on sleep. Common misconceptions of Muscle and fat tissue Excessive Exercise, Exercise trends.  
Food pyramids, Balanced diet, Foods to go for, foods to avoid ; Trans fats  
Fad diets – pros and cons..Eating disorders – Anorexia, Bulimia. Basics of the Nutrition Table and FDA regulations on labeling food stuffs as “ Fat free” etc. Food allergies and it's complications.

**Reference Books:**

1. B. Srilakshmi, Nutrition science, New age international publishers, 6<sup>th</sup> edition.
2. Swami Rama, A Practical Guide to Holistic Health, Himalayan institute press, ISBN-13978-0893892043.

**FITNESS CAPSULE****PRACTICAL**

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**PRACTICAL SESSIONS**

1. Know your ideal weight.
2. Check your pulse and heart rate.
3. Calculate waist hip ratio.
4. Assessment of Posture.
5. Body Mass Index
6. Demo and use of different fitness equipments in gymnasium
7. Assessment of Fitness - Body composition( Body fat percentage by skin fold thickness)
8. Flexibility tests – Sit and reach, Goniometer
9. Cardio respiratory fitness- 3 mins step test
10. Muscular strength – Crunch test
11. Cardio funk –Aerobics
12. Yoga
13. Secrets of healthy cooking
14. Deciphering food labels
15. Nutritional analysis of different food products (Online)
16. Calorie requirement calculator (Online)
17. Calorie burnt calculator (Online)
18. Ideal body weight calculator (Online)
19. Diabetes Risk calculator (Online)
20. First aid.

**FITNESS CAPSULE**  
**MODEL QUESTION PAPER**

**Course Code: U20/BIC/GE/301**  
**Credits: 2**

**Max. Marks: 30**  
**Time: 1 Hr**

**I. Answer any TWO**

**5 x 2 = 10 M**

1. How do we assess fitness? Discuss in terms of fitness parameters.
2. How does Anaerobic Exercise Work? Explain it
3. List the Functions of muscles..
4. Explain the Food pyramid with suitable examples.

**II. Answer the following**

**5 x 1 = 5 M**

5. Identify the Gym equipment in the given picture and list it's uses.



**III. Answer the following**

6. Read the Following Nutrition label and answer the questions given below

10 M

Nutrition Facts		
Serving Size 1/2 oz. (15 g) 4 Crackers		
Servings Per Container 16		
Amount per serving		
Calories 70	Calories from fat 15	
% Daily Value *		
Total Fat 1.5 g		2%
Saturated Fat 0 g		0%
Trans Fat 0 g		
Cholesterol 0 mg		0%
Sodium 132 mg		6%
Total Carbohydrate 12 g		4%
Dietary Fiber 1 g		2%
Sugar 1 g		
Protein 2 g		
Vitamin A 0%	*	Vitamin C 0%
Calcium 0%	*	Iron 2%
Folate 6%		
* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:		
	Calories	2,000 2,500
Total Fat	Less than	65g 80g
Sat Fat	Less than	20g 25g
Cholesterol	Less than	300mg 300mg
Sodium	Less than	2,400mg 2,400mg
Total Carbohydrate		300g 375g
Dietary Fiber		25g 30g
Calories per gram		
Fat 9	•	Carbohydrate 4 • Protein 4

1. How many calories would you take in if you ate the whole box of crackers in one sitting?
2. If you ate 2 servings of crackers, how many grams of carbohydrates would you get?
3. If each gram of carbohydrates provides 4 calories, how many calories would you take in by eating 2 servings of crackers?
4. If fat provides 9 calories per gram, how many calories would you get by eating 2 servings?
5. Which Vitamin is present?

7. Calculate the BMI of Ramya if her Height is 1.63 m and her Weight is 52 kg.

5 M

Comment on your result.