

**DEPARTMENT OF NURSING**  
**MPMRVAC02- Health and fitness**

**Learning Objective**

This course will enable students to understand the modern concept of health and fitness. It aims to develop understanding fitness, role of exercises for enhancing fitness, cardio respiratory function, muscular strength, endurance, flexibility, stress management, nutrition and weight management.

**Course outcomes**

After completing this course, the students will be able to

- Define health, wellness, and the different dimensions of wellness.
- Understand the modern concepts of anatomy and exercise physiology in the field of fitness.
- Introduce and promote the fundamentals of a well balanced conditioning program emphasizing aerobic and anaerobic workouts.
- Define the goal of physical training and the basic principles of training for health and fitness.
- Describe strategies that can help you maintain a fitness program over the long term.
- Be able to describe the role proper nutrition plays in attaining and keeping a high level of fitness.
- Describe the effect stress has on health and performance.
- Be able to develop personalized plans for cardio respiratory fitness, muscular fitness and flexibility.
- Describe the importance of nutrition and weight management.
- Describe the role of exercise in cardiovascular function for health maintenance.

**Unit I Introduction to human anatomy and exercise physiology**

Basic introduction to anatomy, Basic terminologies, Anatomical and fundamental position, Anatomical divisions of body, Types and structure of bones, joints & movements, Bony landmarks and identification. Metabolism, anabolism and catabolism, Energy for muscular contractions, ATP-Creatine phosphate, Glycolysis, Lactic acid, Aerobic oxidation, Fat metabolism, Krebs cycle, Immediate cardiac responses to exercise, Heart rate, Stroke volume, Cardiac output, Blood flow and blood pressure, Maximal oxygen conception, Anaerobic threshold, Adaptation to exercise, Neuromuscular changes, Motor unit recruitment and muscle fiber type, DOMS, principles of resistance training program, PRE, Periodisation, Programme variables, choice of equipment, choice of exercise, order of exercise, Reps and sets, Intensity, Hemodynamic response to resistance exercise, Endurance exercises and glycogen supply, Fatigue, Detraining effects, Environmental factors affecting exercise.

**Unit- II Total fitness**

Physical activity – Concept, Benefits of participation in physical activities with specific reference to health; Components and significance of total fitness. Types of physical activities – Walking, Jogging, Running, Calisthenics, Rope skipping, Cycling, Swimming, Circuit training, Weight training, Adventure sports. Components of physical fitness (Health, skill & Cosmetic fitness). Need and importance of measurement and evaluation of physical fitness. Methods to develop and measure health and skill related components of physical fitness.

**Unit III Wellness and Nutrition and Weight management**

Wellness – concept, components, significance with reference to positive lifestyle, concepts of quality of life and body image factors affecting wellness, wellness programs. Concepts of nutrients, Balanced diet, Dietary aids, Energy and activity, Calorie intake and expenditure, Energy balance equation, Obesity – concept, causes, assessment, management; Obesity related health problems. Weight management through behavioral modifications.

**Unit IV Training effects on anatomical and physiological systems**

Effects of exercise on skeletal system, Muscular system, Circulatory system, Respiratory system, Digestive system, Excretory system, Nervous system and Endocrine system. Concepts of warming-up, Conditioning, Cooling-down. Concepts of Fatigue, Cramp, Oxygen debt, Physiological adaptations. Markers for training effects – Maximum heart rate, Vital capacity, Stroke volume, Temperature regulation, Lactate threshold and VO<sub>2</sub> max.

**Unit V Fitness for lifestyle diseases**

Coronary artery disease, Diabetes mellitus, Hypertension, Osteoporosis, Obesity. First aid and Rehabilitation. Fitness for women, children, elderly and differently abled. Perform the fundamental skills of the chosen activity with proper body mechanics and adherence to health and safety standards. Perform the activity as dictated by the rules and traditional standards, limited only by personal capacities. Continue performing or learning the activity according to personal goals.

**References:**

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- Corbin, C.B., G.J. Welk., W.R. Corbin. and K.A. Welk. 2008. 14<sup>th</sup> Edition. Concepts of Physical Fitness: Active Lifestyle for Wellness, McGraw Hill, New York:
- Hoeger, W.W. and S. Hoeger. 2004. Fitness and Wellness 7<sup>th</sup> Edition, Published by Thomson Wadsworth, Boston, USA.
- Lumpkin, A. 2017. Introduction to Physical Education, Exercise Science and Sports Studies. Published by McGraw-Hill Publishers, New York, USA.
- Melvin, H.W. 1990. Lifetime Fitness and Wellness. Published by Brown Publishers, New York.
- Savard, M and Svec, C. 2007. The body shape solution to weight loss and wellness : The apples & pears approach to losing weight, living longer and feeling healthier. Published by Atria books publishers, Sydney, Australia.
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