**Fitness theory, techniques and training**

## Prof. Ferdinando Cereda

***COURSE AIMS AND INTENDED LEARNING OUTCOMES***

The course provides the knowledge, skills and abilities to meet the need for procedures that, based on a Physical Fitness evaluation, allow for suitable choice of exercises and correct planning according to pre-determined objectives.

At the end of the course, students will be able to:

– devise physical exercise proposals, pathways and protocols for specific individuals or groups, and specific educational and re-educational objectives;

– organise and manage a wealth of exercises, as well as exercises to be proposed in a multi-varied form and adapted to different types of needs.

***COURSE CONTENT***

Evaluation of health, lifestyle and physical fitness

– The 5 components of physical fitness.

– Hypokinetic illnesses, health and physical activity.

– Evaluation of a person’s state of health.

– Evaluation of a person’s lifestyle.

– Evaluation of a person’s physical condition.

Posture and joint flexibility

– Fundamental principles.

– Analysing posture.

– Joint movements.

– Factors determining mobility.

– Test to determine muscle length.

– Techniques and exercises for lengthening muscles.

The body’s composition

– Techniques for evaluating the body’s composition.

– Somatotyping.

– The value of being thin and of being the ideal weight.

– Quantitative and qualitative analysis of the body’s composition.

– Reconstruction of the Basal Metabolism.

– Evaluation of energy consumption and calorie intake.

– The principles and practice of weight control.

*Aerobic exercise*

– Definition and benefits of aerobic exercise.

– Submaximal tests for VO2 max: introduction.

– Heart rate and VO2 max correlation.

– Cardiorespiratory fitness evaluation at rest and during exercise.

– Aerobic activity and energy expenditure.

– Equipment for aerobic exercise.

– Guidelines for correct planning.

Strength and muscle resistance

– Definition and benefits of strength training.

– The effects of training programmes using weights.

– Measuring strength and muscle resistance.

– The principles and methods of weight training.

– Equipment for training against resistance.

– Guidelines for correct planning.

Evaluation of stress

– How the mind responds to stress.

– Stress, exercise and illness.

***READING LIST***

Basic

F. Cereda, *Teoria, tecnica e didattica del Fitness*, Vita e Pensiero, Milan, 2013.

F. Cereda-A. Gambaretto, *Appunti e dispensa laboratori a.a. 2023-2024.*

Recommended

American College of Sports Medicine (ACSM), *ACSM's: Guidelines for Exercise Testing and Prescription,* Wolters Kluver-Lippincott, Williams & Wilkins, 2021 (11th ed.).

B.J. Schoenfeld-R.L. Snarr (eds.), *NSCA’s essential of personal training*, Human Kinetics, 2022.

T. Rieger-F. Naclerio-A. Jimenez-J. Moody (eds.), *Foundations for exercise professionals,* Human Kinetics, 2015.

T.R. Baechle-R.W. Earle (a cura di),NSCA, *Il manuale del Personal Trainer*, Calzetti & Mariucci Editori, Torgiano (Pg), 2010.

V.H. Heyward, *Fitness: un approccio scientifico,* (edited by F. Cereda), Edizioni Sporting Club Leonardo Da Vinci, Milan, 2013.

***TEACHING METHOD***

The course includes a theoretical study of the topics and their implementation in specifically equipped areas.

*“In addition to theoretical hours the course* *includes practice learning activities* *(distinct courses and workshops) with mandatory attendance for at least 70% of hours”.*

***ASSESSMENT METHOD AND CRITERIA***

The date of the test will be communicated on lecturer’s webpage. The final exam is divided into a written test with multiple-choice questions aimed at verify the knowledge of the main subject contents. Assessment will be based on the score obtained according to appropriate docimological criteria. The written exam consists of 35 multiple-choice questions (only one correct answer). Correct answer given: 2 (two) marks. Wrong answer given: -1 (minus one) mark. Answer not given: 0 (zero) marks. The final mark will permit an assessment out of thirty. The test is passed with a mark between 32 and 60 (32 marks = 18/30, 47 marks = 25/30, 60 marks = 30 cum laude).

***NOTES AND PREREQUISITES***

Students are requested to have basic knowledge of general and sport physiology, of theory and methods of physical training and of locomotor system anatomy.

Further information can be found on the lecturer's webpage at http://docenti.unicatt.it/web/searchByName.do?language=ENG or on the Faculty notice board.