## **Theory and Methods of Physical Training**

Prof. Paolo Bruseghini

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

The  course aims to provide students with the knowledge necessary for the structuring of skills, in the sport sciences area, related to training theory. The knowledge both on a theoretical level and on a practical level of the exercises to be used in the various training programs determining, in relation to the objective to be reached, the organic load through the right choice of volume of work and recovery will contribute to the construction of the future professional of the movement. The contents of the course are also intended to provide students with the knowledge and skills to independently conduct, manage and evaluate individual or group motor activities of a sports, aimed at maximizing athletic performance.

Expected results (according to the European Dublin descriptors).

*Knowledge and Understanding*

Apply the principles of general and specific physical conditioning and apply the elements of physical training methodology in various sports contexts. Design training sessions aimed at increasing physical performance and apply the program design variables to create a periodized training program.

*Making Judgment*

Students should be able to integrate the specific knowledge and competence in order to critically assess the effects of physical training considering the individual conditions and specific context.

*Communication Skills*

The communication skills acquired at the end of the course will mainly be aimed at using the specific technical language to define the different aspects that characterize sport training, with particular reference to the performance model in all its peculiarities.

*Learning Skills*

Students should acquire the skills necessary to autonomously deepen the knowledge of training theory and elaborate on it considering the professional setting in which he/she will operate.

***COURSE CONTENT***

– Sports training principles.

– Energy systems and physiological adaptations to exercise.

– The functional model of training.

– Training methodologies for muscle strength and power, aerobic and anaerobic components, speed and rapidity, coordinative skills.

– Training planning and periodization strategies: from the single session to the multi-year design.

– Management and monitoring of the effects of training and training-load.

***READING LIST***

T. Bompa - C. Buzzichelli, *Periodization - Theory and Methodology of Training-6th Edition,* Human Kinetics, 2019.

G.G. Haff – N.T. Triplett *, Essentials of Strength Training and Conditioning-4th Edition* NSCA, Human Kinetics, 2016.

V.B. Issurin, *La preparazione fisico-sportiva nel XXI secolo: fondamenti, nuovi percorsi ed evidenze scientifiche*, Calzetti&Mariucci Editori, 2020.

W.D. Mcardle-F.I. Katch-V.l. Katch, *Fisiologia applicata allo sport: Aspetti Energetici, Nutrizionali e Performance-3^ edizione*, Zanichelli, 2018.

M. McGuigan, *Monitoring training and performance in athletes,* Human Kinetics, 2017.

Further books and/or scientific papers will be indicated during the course.

***TEACHING METHOD***

The course includes lectures with the support of slides and analysis of scientific papers, for a total of 15 hours, in which the main methodologies for sports training will be introduced. The course also includes practical classes (with mandatory attendance for at least 70% of hours) fora total of 50 hours, where the main aspects related to the training methods and the management of training will be explored through laboratory activities. The teaching materials will be available in digital format through the Blackboard platform.

***ASSESSMENT METHOD AND CRITERIA***

Learning test will occur by means of a written exam and oral exam.

The written test includes 24 multiple choice questions about the basic knowledge of the fundamentals of the discipline. To pass the written test it is necessary to obtain a minimum mark of 18/24 (correct answer: 1 point; wrong or missing answer: 0 points). In the oral exam, the skills acquired during the course and the appropriate use of specific terminology will be evaluated. To pass the oral test it is necessary to obtain a minimum mark of 18/30. The weighted mean of the test results obtained by both test, written and oral, is reported as the final result.

***NOTES AND PREREQUISITES***

Attendance at the course is still strongly recommended.

Students participating in Erasmus or Dual Career programs are kindly requested to contact the teacher by email (paolo.bruseghini@unicatt.it).

Any communication will be provided through the Blackboard platform and messaging system.

Prof. Paolo Bruseghini is available to receive students at the end of the curricular lessons and at the Laboratory of Exercise and Sport Sciences exclusively by appointment via email ([paolo.bruseghini@unicatt.it](mailto:paolo.bruseghini@unicatt.it)).