



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze Psicologiche, Pedagogiche, dell'Esercizio Fisico e della Formazione
ACADEMIC YEAR	2023/2024
BACHELOR'S DEGREE (BSC)	PHYSICAL EDUCATION AND SPORT SCIENCES
INTEGRATED COURSE	THEORY AND METHODOLOGY OF SPORT ACTIVITIES - INTEGRATED COURSE
CODE	11521
MODULES	Yes
NUMBER OF MODULES	2
SCIENTIFIC SECTOR(S)	M-EDF/02
HEAD PROFESSOR(S)	BIANCO ANTONINO Professore Ordinario Univ. di PALERMO
OTHER PROFESSOR(S)	BIANCO ANTONINO Professore Ordinario Univ. di PALERMO BELLAFFIORE MARIANNA Professore Ordinario Univ. di PALERMO
CREDITS	12
PROPAEDEUTICAL SUBJECTS	03380 - HUMAN PHYSIOLOGY - INTEGRATED COURSE
MUTUALIZATION	
YEAR	3
TERM (SEMESTER)	2° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	BELLAFFIORE MARIANNA Monday 10:00 13:00 Microsoft teams - codice: 2fkgv90 BIANCO ANTONINO Tuesday 11:00 15:00 Via Giovanni Pascoli 6. 2 piano

MODULE
MOTORIAL AND APTITUDE ASSESSMENT METHODS FOR SPORTS

Prof.ssa MARIANNA BELLAFFIORE

SUGGESTED BIBLIOGRAPHY

Miller T. NSCA's guide to tests and assessments. Human Kinetics. 2012.
Winter E.M., Jones A.M., Davison R.C., Bromley P.D., Mercer T.H. Test per lo sport e l'attivita' fisica. Linee guida per test fisiologico-sportivi e clinico-fisiologici. Calzetti & Mariucci Editori, Torgiano (PG), 2010.
Reiman M.P., Manske R.C. Functional testing in human performance. Human Kinetics, 2009.
Dispenza A. La valutazione in educazione fisica. Societa' stampa sportiva. Roma. 1992.
Carbonaro G., Madella A., Manno F., Merni F., Mussino A. La valutazione nello sport dei giovani. Societa' stampa sportiva. Roma. 1988.

AMBIT	50101-Discipline motorie e sportive
INDIVIDUAL STUDY (Hrs)	99
COURSE ACTIVITY (Hrs)	51

EDUCATIONAL OBJECTIVES OF THE MODULE

Acquisition of knowledge and skills on methods and tools of functional assessment in the exercise and sport field. After completing the course, the student will be able to plan independently an evaluation program of the motor capacities and exercise training control.

SYLLABUS

Hrs	Frontal teaching
3	Presentation of the course program and exam modalities. Definition of functional evaluation. General and specific aims of the functional assessment. General characteristics of the motor assessment tests. Validity, reproducibility, reliability, objectivity, specificity, protocol.
3	Direct tests. Indirect tests. Maximal tests. Sub-maximal tests. Field tests. Laboratory tests. Batteries of tests. Definition of anthropometry. Methods for the evaluation of anthropometric parameters. Body mass index, Livi's weight index, Scelico- Cormico's index, Grant's index. Method of the circumferences.
3	Definition of body composition. Fat Free Mass (FFM). Fat Mass (FM). Indirect methods and doubly indirect for the evaluation of body composition. Densitometry. Skinfold thickness. Bioimpedentiometry.
3	Definition of joint mobility and muscle flexibility. Test to evaluate the flexibility of shoulders. Tests to assess the mobility of the trunk (Sit and reach test, Trunk lift, Spinal Mouse®). Test to evaluate the mobility of the lower limbs. Test to evaluate the mobility of the upper limbs. Tests to assess the mobility of the ankles.
4	Evaluation of coordination skills. Differentiation or modulation of strength (throw the basketball forward and back at 50% by sitting position. Reactivity (response time to visual and acoustic signals). Balance (Translocation on the beam). Rhythmicity (race upbeat on site; tapping). Orientation in space. Combination (Mixer). Körperkoordinationstest Für Kinder (KTK) test.
3	Evaluation of motor and sports skills in children. Self-assessment and peer review. Quantitative and qualitative evaluation through the observation. The use of the circuits for testing and evaluation.
3	Direct methods for the evaluation of strength: muscle biopsy, electromyography, magnetic resonance imaging. Isometric dynamometry. Morehouse's strength index. Dal Monte's global torque index and relative strength index. Dinamografia isometric. Curve force / time (maximum strength). Force / speed curve. Peak of moment of force. Verchoshansky's index. Method of maximum single repetition (1-RM). Vertical jump on dynamometric platform. Optojump. Squatting jump test. Counter movement jump test. Standing long jump test. Abalakov Test. Sergeant test. Throw of the weighted ball. Push up test. Cin up test. Sit up test.
3	Classification of the sports activities from a metabolic point of view. Anaerobic alactacid metabolism. Factors limiting the anaerobic alactacid metabolism. Direct tests for the assessment of anaerobic alactacid metabolism: muscle biopsy, MRI, analysis of blood metabolites. Single jump test. Margaria and Kalamen's test. Wingate test 10 s. Bosco Tests 15s. Sprint Test.
3	Evaluation of the anaerobic lactate metabolism. Factors limiting the anaerobic lactate metabolism. Direct tests (muscle biopsy, magnetic resonance imaging; blood lactate; acid-base balance). Measurement of physiological parameters. Measurement of mechanical parameters (constant power test; resistance tests at constant time). De Bruyn-Prevost's test. Wingate test 30 s.
3	Evaluation of the aerobic metabolism. Evaluation of the basal metabolism. Relationship between oxygen consumption and intensity of physical activity. Definition of maximum oxygen consumption.

3	Direct and indirect tests to evaluate the maximum oxygen consumption in the field and lab (triangular and rectangular test). Maximal tests (Cooper test, Leger test, Balke test, Bruce test, Yo Yo intermittent endurance test, Yo Yo intermittent recovery test). Sub-maximal test (1-mile Rockport Fitness Walking Test; 6 min walking test; test di Astrand/3-Minute Step Test; test di Margaria; test di Fox). Assessment of oxygen consumption kinetic, ventilatory oxygen equivalent; ventilatory carbon dioxide equivalent, respiratory quotient, EPOC). Direct and indirect Evaluation of anaerobic threshold (Mader, Wasserman, Conconi).
3	Evaluation of the exercise training load. Parameters of external and internal workload. Methods and instruments for the assessment of external and internal workload in individual and team sports.
3	Using the pinch caliper and the impedancemeter for measuring the amount of fat mass. Measurement of body circumferences. Measurement of coordination skills. Measuring muscle flexibility. Measuring the strength of horizontal and vertical jump. Measurement of the maximum strength. Measuring the resisting strength.
3	Processing of observations grids for the evaluation of motor skills. Planning of technical circuits for evaluation of sports skills.
3	Using the heart rate monitor. Manual heart rate measurement. Using the Borg scale. Measurement of aerobic capacity with field tests.
3	Using OptoJump. Using the Monark bike. Measurement of maximal, explosive, explosive-elastic, reactive-elastic and endurance strength.
3	Using metabolimeter. Measurement of basal VO ₂ , VO ₂ max, anaerobic threshold, respiratory quotient.