UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Scienze Psicologiche, Pedagogiche, dell'Esercizio Fisico e della Formazione
ACADEMIC YEAR	2020/2021
MASTER'S DEGREE (MSC)	SCIENCE OF PREVENTIVE AND ADAPTED PHYSICAL ACTIVITY AND SPORT PERFORMANCE
INTEGRATED COURSE	METHODOLOGY AND DESIGN OF FUNCTIONAL EVALUATION IN HIGH LEVEL ATHLETES - INTEGRATED COURSE
CODE	13507
MODULES	Yes
NUMBER OF MODULES	2
SCIENTIFIC SECTOR(S)	M-EDF/02, M-EDF/01
HEAD PROFESSOR(S)	PALMA ANTONIO Professore Ordinario Univ. di PALERMO
OTHER PROFESSOR(S)	PALMA ANTONIO Professore Ordinario Univ. di PALERMO BELLAFIORE MARIANNA Professore Ordinario Univ. di PALERMO
CREDITS	12
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	1
TERM (SEMESTER)	1° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	**BELLAFIORE MARIANNA** Monday 10:00 13:00 Microsoft teams - codice: 2fkgv90 **PALMA ANTONIO** Wednesday 10:00 12:00 Via Giovanni Pascoli N. 6 o su piattaforma Teams da concordare tramite e-mail.

DOCENTE: Prof. ANTONIO PALMA

PREREQUISITES	The knowledge that a student must have in order to understand the content and objectives of the course are: a sufficient knowledge of English and a good knowledge of the Microsoft Office (word applications, excel and power point).
LEARNING OUTCOMES	The acquisition of knowledge and abilities of understanding that extend and / or reinforce the basic ones and allow them to develop and / or apply original ideas in a research context applied to exercise and sport sciences. The development of the ability to apply knowledge, the ability of understanding and skills for solving problems in new or unfamiliar issues, included in more broader contexts (or multidisciplinary) related to the development of research projects in the field of exercise and sport. The development of the ability to integrate knowledge and handle complexity, as well as to make judgments based on incomplete or limited information, but that include reflecting on social and ethical responsibility linked to the application of their knowledge and judgments. The acquisition of the ability to communicate the results of a research project applied to the exercise and sport in a clear and appropriate manner using appropriate scientific terminology. Be able to support and motivate the importance of the impact of the project results both with experts that with a non-specialist audience. The development of the capacity of learning that allows students to continue studying mostly so self-directed or self by consulting scientific publications and the use of multimedia systems. Being able to design and fully pursue research undertaken using the knowledge gained in the course.
ASSESSMENT METHODS	Learning evaluation includes three tests: a written test in progress; a written test and an oral exam at the end of the course. The written test in progress is to review a scientific paper, whose theme concerns exercise and sport fields, according to specific assessment indicators and aims to verify the knowledge and criticism skills acquired. The indicators taken into consideration are as follows: 1) total value and originality of the study; 2) analysis of the literature, 3) Research Design; 4) data analysis methodology; 5) Interpretation and Conclusions. A score ranging from 18 to 30 cum laude is given for each indicator. The written test at the end of the course consists of 19 multiple-choice questions and 4 open-ended questions and it is designed to ascertain the knowledge and synthesis skills by the student. For evaluating this test the same indicators described above are used. The oral exam is aimed at verifying the application of knowledge acquired at the end of the course for the elaboration of a design idea, as well as analytical and expository skills. Knowledge check includes scrutiny of the capability to establish relationships between contents, theories, patterns and methodologies which have been an object of study during the course. The assessment has a final grade included in the following range: 30-30 with honours (excellent), corresponding to excellent knowledge of topics, excellent use of language, good analytical skills, the student can implement his \her knowledge to solve the submitted issues; 26-29 (very good), good mastery of topics, very good use of language, the student can implement his\her knowledge in order to solve the submitted issues; 24-25 (good), corresponding to basic knowledge of the main topics, fair use of language, with moderate capability to independently implement knowledge to solve the submitted issues; 21-23 (satisfactory), she\he doesn't possess full mastery of the main teaching topics but she\he possesses knowledge of them, satisfactory use of language, poor capability to independently implement the acquired knowledge; 18-20 (passing grade), very poor basic knowledge of both the main teaching topics and the technical language, no or very poor capability to independently implement the acquired knowlege; unsatisfactory, she\he doesn't possess an acceptable knowledge of the contents of the topics dealt with during the course.
TEACHING METHODS	Frontal lectures, individual and group exercise, practice in the laboratory of functional assessment and informatics.

MODULE
METHODOLOGY AND DESIGN OF FUNCTIONAL EVALUATION AND RESEARCH IN PHYSICAL EDUCATION

Prof. ANTONIO PALMA

SUGGESTED BIBLIOGRAPHY

Thomas J.R., Nelson J.K. and Silvermann S.J. Metodologia della ricerca per le scienze motorie e sportive. Prima edizione italiana a cura di Bellotti P. e Rainoldi A. Calzetti & Mariucci Editori. 2012.
Thomas J.R., Nelson J.K. and Silvermann S.J. “Research Methods in Physical Activity” (Fifth edition). Human Kinetics. 2005.

AMBIT	21001-Attività formative affini o integrative| 50540-Discipline motorie e sportive
INDIVIDUAL STUDY (Hrs)	98
COURSE ACTIVITY (Hrs)	52

EDUCATIONAL OBJECTIVES OF THE MODULE

Acquisition of methodological skills for the writing of a research project in the field of exercise science.

SYLLABUS

Hrs	Frontal teaching
3	Presentation of the course. Introduction to the scientific research applied to the physical exercise.
3	The methodology of scientific research. Difference between scientific method and empirical method.
3	Types of research: analytical, descriptive, experimental, qualitative.
3	Examples of research patterns in the field of physical exercise.
3	Description of the steps for the writing of a review on a theme inherent in the physical exercise sciences.
3	The objective of the review and identification of keywords. Search of papers in scientific websites.
3	Definition of inclusion / exclusion criteria and selection of research papers.
3	Fundamentals of statistics and measures for research.
3	The use of computers in statistical analysis.
3	Sport functional assessment and use of laboratory instruments
3	Processing data through the software excel of microsoft office.
3	Examples of systematic reviews (meta-analyzes).
3	The review of research papers
3	Concepts of Myofascial Chains
3	Prescription of physical activity in the context of the rehabilitation.
5	Test for the evaluation of the main musculoskeletal complications

MODULE
METHODOLOGY AND DESIGN OF FUNCTIONAL EVALUATION AND RESEARCH IN SPORTS

Prof.ssa MARIANNA BELLAFIORE

SUGGESTED BIBLIOGRAPHY

Thomas J.R., Nelson J.K. and Silvermann S.J. Metodologia della ricerca per le scienze motorie e sportive. I edizione italiana a cura di Bellotti P. e Rainoldi A.; Calzetti & Mariucci editori, 2012.
Thomas J.R., Nelson J.K. and Silvermann S.J. “Research Methods in Physical Activity” (Fifth edition). Human Kinetics. 2005.

AMBIT	50540-Discipline motorie e sportive
INDIVIDUAL STUDY (Hrs)	98
COURSE ACTIVITY (Hrs)	52

EDUCATIONAL OBJECTIVES OF THE MODULE

The objective of the present course aims at the acquisition of knowledge and skills that they can allow the student to apply a scientific approach in the preparation of a research project in the sport field.

SYLLABUS

Hrs	Frontal teaching
3	Introduction to research in sport. Unscientific versus scientific methods of problem solving.
3	Developing the problem and usoing the literature. Identifying the research problem. Purpose of the literature review. Basic literature search strategies. Steps in the literature search.
3	Choosing the title. Writing the introduction. Stating the research problem. Presenting the research hypothesis. Operationally defining your terms. Basic assumption, delimitations and limitations. Justifying the significance of the study. The differences between the thesis and the research article.
3	Formulating the method. How to present methodological details. Why planning the method is important. Two principles for planning experiments. Describing participants.
3	Describing instruments. Describing procedures. Describing design and analysis. Establishing cause and effect. Interaction of participants, measurements and treatments.
3	Ethical issue in research and scholarship. Seven areas of scientific dishonesty. Ethical issue regarding copyright. Model for considering scientific misconduct. Working with faculty. Protecting human participants. Protecting animal subjects.
3	Statistical concepts for the processing of data. Using Excel software. How to prepare tables and figures.
3	Observationalversus experimental research. What is epidemiology? Epidemiologic study designs in sport. Reading and interpreting an epidemiologic study in the sport field.
3	Describing results and discussion. How to handle multiple experiments in a single report. How to use tables and figures. Writing proposal for granting agencies. Submitting internal proposal.
3	Examples of scientific articles in sports. Brainstorming.
3	Critical review of a scientific article.
3	Guidelines for the Individual design of an experimental research applied to sport.
3	Practical examples of laboratory physiological tests. Using tools for evaluation.
3	Practical examples of laboratory physiological tests. Using tools for evaluation.
3	Practical examples of laboratory physiological tests. Using tools for evaluation.
3	Preparation of an abstract for oral and poster presentations at conferences.
2	Preparation of an abstract for oral and poster presentations at conferences.