Universidad Zaragoza

Year : 2019/20

60857 - Body composition and health

Syllabus Information

Academic Year: 2019/20
Subject: 60857 - Body composition and health
Faculty / School: 229 - Facultad de Ciencias de la Salud y del Deporte
Degree: 549 - Master's in Evaluation and Physical Training for Health
ECTS: 6.0
Year: 1
Semester: First semester
Subject Type: Compulsory
Module: ---

1.General information

1.1.Aims of the course

The subject and its expected results respond to the following approaches and objectives:
This course is intended for the student to have a global vision of physical activity as a means of maintaining a healthy body composition or improving body composition in undesirable or pathological situations to improve health. Specifying a little more:

- Know its history, how it has evolved and what is the most current in this field.
- Study the special characteristics of some population groups whose evaluation, as well as the prescription of exercise for their health, have peculiarities that must be known and taken into account.
- Know how to carry out previous evaluations that inform us of the starting levels and that motivate the planning and prescription of exercise, whose results will have to be assessed.

1.2.Context and importance of this course in the degree

The effect that physical exercise and physical activity has on the organism and specifically on the different compartments of body composition (fatty tissue, muscle tissue and bone tissue) has been a very interesting and fruitful field of study for sports sciences and physical activity. The body of knowledge that we have in this field today allows us to affirm that the exercise, developed under proper supervision (planning, design, prescription ...), is an excellent determinant of an adequate and healthy body composition. And not surprisingly, according to Delgado (1995), one of the main professional activities carried out by graduates and current Graduates in Physical Activity Sciences is the "hygienic or aimed at improving health." This facet of Physical Education dates back to the time of the Greeks and was firmly recovered in the Renaissance. Since then it has achieved great influence, to the extent that since the second half of the 20th century it has prevailed over the other currents, especially in the Anglo-Saxon and Scandinavian countries. The objective of this activity is to raise the health status of the population, contributing to prevent the development of diseases and reducing the socioeconomic costs associated with getting sick. In all the aforementioned areas, but especially in the latter, a good knowledge of the functioning of the human organism during the exercise, as well as of the adaptations and bodily changes caused by the continued sports practice, can facilitate and guide with a more scientific and professional, of the work of the Licentiate / Graduate in Physical Activity and Sports Sciences.

On the other hand, not only is the role of these sports professionals fundamental. Other agents involved in the health of the population and people such as doctors, nurses, physiotherapy, nutrition or even psychology,

could benefit from this knowledge for greater and better professional development. In addition, multidisciplinary work in this area is, more than desirable, practically mandatory and a perfect gear of these disciplines will result in an active and healthy population.

Delgado M. Teaching Project. University of Granada: (unpublished); nineteen ninety five

1.3.Recommendations to take this course

LEGAL: they do not exist.

ESSENTIALS: Basic knowledge of basic anatomy and physiology as well as notions of training planning and human nutrition are essential. To understand the procedures and results that will be discussed throughout the course, it is essential to have basic knowledge of descriptive statistics.

ADVICE: You can easily follow the subject if you have knowledge of Physiology, Exercise Physiology, Nutrition and Physical Activity and Health. It is advisable to have knowledge of computer science and bibliographic search, as well as a basic knowledge of English as you must comment on scientific texts.

2.Learning goals

2.1.Competences

?In this subject, as in the rest of the Master's subjects, all the general competencies (instrumental, personal and interpersonal and systemic relations) that appear in the Master's Report will be attended?

Specific ones:
These competences are textual to the file of the subject of the Master's report:

1. To control the different methodological alternatives that can be applied within the framework of physical activity oriented towards health.
2. To use different research techniques and apply them appropriately to the field of knowledge of the assessment and prescription of physical exercise for health in different population groups.
3. To Identify and assess the health problems that affect different population groups, and in which physical exercise can have a positive impact on their treatment and subsequent improvement.
4. To extract and properly analyze the information from scientific texts within the framework of the Physical Activity Sciences, assessing their possible link to the field of Health.
5. To evaluate the changes that occur as a result of a physical activity program oriented to health.
6. To perform optimized bibliographic searches in the field of health-oriented physical activity, strategically selecting the most relevant information for the purpose of the research.
7. To analyze the psycho-physiological variables associated with health-oriented physical activity, using the most appropriate scientific methodology.
8. To use advanced methodologies in the analysis of energy expenditure and body composition from experimental designs.
9. To identify and interpret the most appropriate methodology for the assessment of body composition and its influence on the health of different population groups.
10. To identify and interpret in scientific texts the most appropriate rules of action for the design of health-oriented physical activity programs in people with hypertension, metabolic or osteoarticular problems.
11. To find and interpret conveniently in the scientific literature the most important elements for the prescription of physical activity programs aimed at health in children, youth, adults, elderly and / or people with special needs.

2.2.Learning goals

The student nows the methods of evaluation and estimation of body composition and the influence of biological and environmental factors with special attention to specific population groups.

Manages equipment and methods of assessment and estimation of body composition.

And has the capacity to analyze and interpret the body composition and the effects of physical activity in the general population and in different specific population groups.

2.3.Importance of learning goals

They will allow the student to know the health benefits and in particular for a healthy body composition of physical activity and the damages of their absence. In addition, they will provide tools for the performance of their work as a professional in the field of Physical Activity and Sports Sciences in their facet most related to health and quality of life.

3.Assessment (1st and 2nd call)

3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

The students must demonstrate that they have achieved the intended learning outcomes

by the following evaluation activities:

1: The student in this subject will be evaluated by a global test.

The evaluation is done according to the agreement of the 22 December 2010 by which the regulation of learning assessment standards of the University of Zaragoza is approved.

4.1. Evaluation activities

The students must demonstrate that they have achieved the intended learning outcomes through an overall assessment test consisting of a theoretical and practical assignment and a written test.

Global Test:

Evaluation Test 1: Test.

The assessment of the extent of the knowledge acquisition and understanding of the conceptual and practical knowledge will be performed through a written exam. It will consist of a double test:

1) Based on multiple choice questions, which will provide 5 possible answers, having the

Students to choose the one that they consider correct. 1/3 points are deducted with each failure (50% exam mark).

2) It also may include short questions, problem solving, interpretation of graphs, design protocols or anything related to practical sessions (50% of the note contents exam).

The final grade will be obtained as the sum of the note of Parts 1 and 2, granting a rating of 1 to 10.

The objective test will contribute 85% to the final grade.

Evaluation Test 2: Work

Students will have to carry out the review and common discussion of 3 scientific articles previously agreed with the teacher and all related to the main topic or study population of the final masterwork that the student has chosen.

The oral presentation of this work will be required to pass the course. It is scored from 0 to 10 and will contribute 15% to the final grade.

Summary:

To pass the course it is necessary to obtain a score greater than or equal to 5 in the evaluation of the examination and work. The weighted overall rating will be computed as follows: theoretical examination 85% and 15% for work.

Tests for the second call for each academic year.

According to Article 10 of Title II of Regulation Evaluation cited above, the second evaluation will be undertaken using a global test in the period established for this purpose by the Governing Council in the academic calendar.

It will consist of a similar work and test described above:

1) based on multiple choice questions, which will be provided with 5 possible answers, the student must choose the one that considers correct. 1/3 will be deducted with

each failure (50% of the exam).

2) which may include short questions, problem solving, interpreting graphs, protocol design and everything related to the contents worked in the practical sessions (50% of the exam).

The final grade will be obtained as the sum of the grades of Parts 1 and 2 with a rating from 1 to 10.

Evaluation Test 2: Work

Students will have to carry out the review and common discussion of 3 scientific articles previously agreed with the teacher and all related to the main topic or study population of the final masterwork that the student has chosen.

The oral presentation of this work will be required to pass the course. It is scored from 0 to 10 and will contribute 15% to the final grade.

Summary:

To pass the course it is necessary to obtain a score greater than or equal to 5 in the evaluation of the examination and work. The weighted overall rating will be computed as follows: theoretical examination 85% and 15% for work.

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

The methodology followed in this course is oriented towards achievement of the learning objectives. It is based on an initial acquisition of theoretical knowledge and its application on practical tasks. It is intended that students are able to apply in practice those theoretical and practical concepts that they have acquired during the course.

A wide range of teaching and learning tasks are implemented, such as theory sessions, practice sessions, practical problems, case studies, etc. in order to bring students to situations that they would confront in a field job of physical activity and health.

Classroom materials will be available via Moodle. These include a repository of the lecture notes used in class, the course syllabus, as well as other course-specific learning materials.

4.2.Learning tasks

The course includes the following learning tasks:

- **Theory sessions** (18 hours). Theoretical basic knowledge of the course, which will focus on the topics covered in the syllabus.
- **Laboratory practice sessions** (16 hours). Sessions will take place in different school facilities, biomedical laboratory, gym, pavilion, outside groups, reduced X students (depending on the group). They are interspersed with the theory sessions. In practice sessions, students will carry out the following activities:
    - * assessment of physical condition and functional design of exercises and specific training plans for improving a quality related to physical health necessary in a specific population.
- **Field practice sessions** (26 TBD hours). Sessions will take place in different faculty facilities; biomedical laboratory, gym, pavilion, outdoor. They interspersed with the theory sessions. In practice sessions, students will carry out the following activities:
    - * assessment of the physical condition and functional design exercises and specific training plans for improving a quality related to physical health necessary in a specific population.
    - Problem solving and case studies.

4.3.Syllabus

The course will address the following topics:

Section 1. History and state of the art

- Topic 1 History of body composition and most relevant findings
- Topic 2 Study of body composition

Section 2. Methodology of body composition assessment

- Topic 3 Hydrostatic weigh and air displacement plethismography
- Topic 4 Dual energy X-ray absorptiometry
- Topic 5 Bio impedance
- Topic 6 Peripheral computed tomagraphy
- Topic 7 Anthropometry on science. Methods: ISAK
- Topic 8 Adiposity and fat distribution
- Topic 9 Lean and bone mass evaluation

Section 3. Biological and behavioural influence on body composition

- Topic 10 Genetic influence

- Topic 11 Age
- Topic 12 Gender and ethnic
- Topic 13 Hormons
- Topic 14 Exercise

Section 4. Body composition in specific population groups

- Topic 15 Children
- Topic 16 Elderly
- Topic 17 Pregnant women
- Topic 18 Associated morbidity and mortality
- Topic 19 Osteoporosis
- Topic 20 Metabolic pathologies: obesity and diabetes

4.4.Course planning and calendar

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course, will be provided on the first day of class.

4.5.Bibliography and recommended resources

Título	**Human body composition / Steven B. Heymsfield ... [et al.], editors**
Publicación	Champaign, Ill. : Human Kinetics, cop. 2005

Ubicación	Signatura	Tipo de préstamo	Estado	Notas
Fac.Cc.Salud(Z)-Fisiatría y Enfermería	**DEF HUM Hum**	CONSULTAR DEPT	USO INTERNO	

Edición	2nd ed.
Descripción física	XII, 523 p. : il. ; 29 cm
Bibliografía	Bibliogr.: 415-502 p.
Autor secundario	**Heymsfield, Steven B., ed. lit.**
ISBN	0736046550

https://www.ncbi.nlm.nih.gov/pubmed

http://biblioteca.unizar.es