



Information about the subject

Degree: Bachelor of Sciences of Physical Activity and Sport

Faculty: Faculty of Physical Activity and Sport Sciences

Code: 281204 **Name:** Statistics and Data Processing

Credits: 6,00 **ECTS Year:** 2 **Semester:** 2

Module: 1) Basic formation Module

Subject Matter: Behavioral and social foundations of human motor skills. **Type:** Basic Formation

Field of knowledge: Ciencias sociales y Jurídicas.

Department: Basic Sciences and Cross-disciplinary Subjects

Type of learning: Classroom-based learning

Languages in which it is taught: Spanish

Lecturer/-s:

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Module organization

1) Basic formation Module

Subject Matter	ECTS	Subject	ECTS	Year/semester
Biological and mechanical foundations of human motor skills.	36,00	Biochemistry and Human Physiology	9,00	1/2
		Biomechanics of Physical Activity	6,00	2/1
		Human Anatomy	9,00	1/2
		Kinesiology	6,00	2/1
		Physiology of Exercise	6,00	2/1
Behavioral and social foundations of human motor skills.	24,00	History and Sociology of Physical Activity and Sport	6,00	1/2
		Sport Psychology	6,00	1/2
		Statistics and Data Processing	6,00	2/2
		Technology Applied to Physical Activity and Sport	6,00	1/1



Learning outcomes

At the end of the course, the student must be able to prove that he/she has acquired the following learning outcomes:

- R1 Summarize, assess and contrast statistical data related to physical-sports activity based on the scientific method.
- R2 Analyze and interpret in a critical and reasoned way statistical research results in the field of Physical Activity and Sports Sciences.
- R3 Carry out basic statistical analyzes in the field of Physical Activity and Sports Sciences through specific data processing programs.



Competencies

Depending on the learning outcomes, the competencies to which the subject contributes are (please score from 1 to 4, being 4 the highest score):

GENERAL		Weighting			
		1	2	3	4
CG1	Understand the scientific literature in English and in other languages ??of significant presence in the scientific field through proper information management.		X		
CG2	Know how to apply information and communication technologies (ICT).			X	
CG3	Develop skills to solve problems through decision making.				X
CG4	Convey any related information properly both in writing and orally.		X		
CG5	Plan and organize any activity efficiently.		X		
CG7	Be able to carry out critical reasoning using the knowledge acquired.				X
CG9	Know and act within the ethical principles necessary for proper professional practice.		X		
CG10	Develop skills for adaptation to new situations and for autonomous learning.				X
CG11	Develop skills for creativity, initiative and entrepreneurship.	X			
CG13	Be able to apply theoretical knowledge in practice.				X
CG14	Use the internet properly as a means of communication and as a source of information.			X	
CG18	Be able to self-evaluate.			X	
CG19	Develop habits of excellence and quality in professional practice.		X		



SPECIFIC	Weighting			
	1	2	3	4
CE 1.1 Understand, develop and know how to apply the procedures, strategies, activities, resources, techniques and methods involved in the teaching-learning process efficiently, developing the entire course of action in all sectors of intervention professional of physical activity and sports (formal and informal physical-sports education; physical and sports training; exercise physical for health; direction of physical activity and sport).			X	
CE 1.2 Design and apply the methodological process integrated by observation, reflection, analysis, diagnosis, execution, evaluation technical-scientific and / or dissemination in different contexts and in all sectors of professional intervention of physical activity and sport.				X
CE 2.1 Adapt the educational intervention to the individual characteristics and needs for the entire population and with emphasis on special populations such as: schoolchildren, the elderly (elderly), people with reduced mobility and Know how to guide, design, apply and technically-scientifically evaluate physical exercise and physical condition at an advanced level, based on scientific evidence, in different areas, contexts and types of activities for the entire population and with an emphasis on populations of a special nature such as: the elderly (elderly), schoolchildren, people with disabilities and people with pathologies, health problems or assimilated (diagnosed and / or prescribed by a doctor), taking into account gender and diversity. diversity.			X	
CE 2.4 Articulate and deploy an advanced level of skill in the analysis, design, and evaluation of assessment and control tests of physical condition and physical-sports performance.		X		
CE 3.1 Analyze, identify, diagnose, promote, guide and evaluate strategies, actions and activities that promote the adherence to an active lifestyle and the participation and regular and healthy practice of physical activity and sport and physical exercise in an adequate, efficient and safe way by citizens in order to improve their integral health, well-being and quality of life, and with emphasis on populations of a special nature such as: the elderly (elderly), schoolchildren, people with disability and people with pathologies, health problems or similar (diagnosed and / or prescribed by a doctor) attending gender and diversity.			X	



CE 3.3 Articulate and deploy promotion, orientation, coordination, supervision and technical-scientific evaluation programs of physical activity, physical exercise and sport for the entire population, with an emphasis on populations of a special nature, with presence by a professional or carried out autonomously by the citizen, in the different types of spaces and in any sector of professional intervention of physical activity and sport (formal and informal physical-sport education; physical training and sports; physical exercise for health; direction of physical activity and sport) according to the possibilities and needs of the citizens, in order to achieve their autonomy, understanding, and greater and adequate practice of physical activity and sport.	X
CE 5.2 Identify, organize, direct, plan, coordinate, implement, and carry out technical-scientific evaluation of the various types of physical and sports activities adapted to the development, characteristics and needs of individuals and the typology of the activity, space and entity, in all types of physical activity and sport services, including sporting events, and in any type of organization, population, context, environment and population and with emphasis on populations of a special nature such as: elderly people (seniors), schoolchildren, people with disabilities and people with pathologies, health problems or assimilated (diagnosed and / or prescribed by a doctor) and in any sector of professional intervention of physical activity and sport (formal and informal physical-sports education; physical and sports training; physical exercise for health; management of physical activity and sport) guaranteeing safety, efficiency and professionalism in the activity carried out in compliance with of current regulations.	X
CE 5.3 Identify, organize, direct, plan, coordinate, implement and evaluate the professional performance of human resources, with emphasis on the direction, coordination, planning, supervision and technical-scientific evaluation of the activity, performance performed and the provision of services by professionals in physical activity and sport, in all types of services and in any type of organization, context, environment and with emphasis on populations of a special nature and in any sector of professional intervention of physical activity and sport guaranteeing safety, efficiency and professionalism in the activity performed in compliance with current regulations.	X
CE 6.1 Know and understand the bases of the methodology of scientific work.	X



CE 6.2 Analyze, review and select the effect and efficacy of the practice of research methods, techniques and resources and Scientific work methodology, in solving problems that require the use of creative and innovative ideas.

X

CE 6.3 Articulate and deploy with rigor and a scientific attitude the justifications on which to elaborate, support, base and constantly and professionally justify all acts, decisions, processes, procedures, actions, activities, tasks, conclusions, reports and professional performance.

X

CE 6.4 Articulate and deploy procedures, processes, protocols, own analysis, with rigor and scientific attitude on matters of social, legal, economic, scientific or ethical nature, when necessary and pertinent in any professional sector of activity physical and sport (formal and informal physical-sport education; physical and sports training; physical exercise for health; direction of physical activity and sport).

X



Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
R1, R2, R3	15,00%	Carrying out a project.
R1, R2, R3	60,00%	Written / oral and / or practical tests.
R1, R2	5,00%	Student self-assessment.
R1, R2, R3	20,00%	Autonomous work.

Observations

- The student will be able to keep the evaluation instruments passed during the 3 years following the first enrollment.
- It is necessary to obtain a 50% in the following instruments (if this criterion is not fulfilled, the student will be graded with a maximum of 4.5 in that exam):
 - Written/oral and/or practical tests
 - Project development
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 - Autonomous work of the student

Learning activities

The following methodologies will be used so that the students can achieve the learning outcomes of the subject:

- M2 Group dynamics and activities.
- M3 Practical lesson.
- M4 Presentation of content by the teacher.



- M5 Laboratory practices.
- M7 Small group discussion.
- M8 Resolution of problems and cases.
- M9 Attendance at practices.



IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
THEORETICAL CLASS: Presentation of contents by the teacher. Competency analysis. Demonstration of capabilities, skills and knowledge in the classroom. M4	R1, R2, R3	32,00	1,28
PRACTICAL CLASS / SEMINAR: Group dynamics and activities. Resolution of problems and cases. Practical laboratories. Data search, computer room, library, etc. Meaningful construction of knowledge through interaction and student activity. M3, M5, M7	R1, R2, R3	20,00	0,80
TUTORING: Supervision of learning, evolution. Small group discussion. Resolution of problems and cases. Presentation of results before the teacher. Presentation of diagrams and indexes of the proposed works. M4	R1, R2, R3	4,00	0,16
EVALUATION: Set of oral and / or written tests used in the evaluation of the student, including the oral presentation of the final degree project. M3	R1, R2, R3	4,00	0,16
TOTAL		60,00	2,40



LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
GROUP WORK: Problem solving. Preparation of exercises, memoirs, to expose or deliver in classes and / or in tutoring. M2, M7	R1, R2, R3	20,00	0,80
SELF-EMPLOYED WORK: Study, individual preparation of exercises, works, memories, to expose or deliver in classes and / or in tutoring. Platform activities or other virtual spaces. M7, M8	R1, R2, R3	70,00	2,80
TOTAL		90,00	3,60



Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
1 Introduction to Statistics.	1 Introduction to Statistics.
2 Descriptive statistics in one and two variables.	2 Descriptive statistics in one and two variables.
3 Introduction to probability.	3 Introduction to probability.
4 Random variables and probability distributions.	4 Random variables and probability distributions.
5 Introduction to Statistical Inference.	5 Introduction to Statistical Inference.
6 Confidence interval estimation.	6 Confidence interval estimation.
7 Contrast of hypotheses.	7 Contrast of hypotheses.



Temporary organization of learning:

Block of content	Number of sessions	Hours
1 Introduction to Statistics.	1,00	2,00
2 Descriptive statistics in one and two variables.	6,00	12,00
3 Introduction to probability.	3,00	6,00
4 Random variables and probability distributions.	5,00	10,00
5 Introduction to Statistical Inference.	1,00	2,00
6 Confidence interval estimation.	5,00	10,00
7 Contrast of hypotheses.	9,00	18,00



References

BASIC BIBLIOGRAPHY:

Diez, D., Barr, C. y Çentikaya-Rundel, M (2013). *Openintro Statistics* (2ª Ed). Recuperado de <https://www.openintro.org/stat/textbook.php>

Martín, G. (2007). *Introducción a la estadística*. Ed: Universidad Católica de Valencia San Vicente Mártir.

COMPLEMENTARY BIBLIOGRAPHY:

Ballester, R., Huertas, F., Yuste, F. J., Llorens, F., & Sanabria, D. (2015). The relationship between regular sports participation and vigilance in male and female adolescents. *PloS one*, 10(4).

Borreani, S., Calatayud, J., Martin, J., Colado, J. C., Tella, V., & Behm, D. (2014). Exercise intensity progression for exercises performed on unstable and stable platforms based on ankle muscle activation. *Gait & posture*, 39(1), 404-409.

González, M. T. y Pérez de Vargas, A. (2009). *Estadística Aplicada. Una visión instrumental*. Ed: Díaz de Santos

Molina-García, J., Castillo, I., Pablos, C., & Queralt, A. (2007). La práctica de deporte y la adiposidad corporal en una muestra de universitarios Descargar. *Apunts. Educación física y deportes*, 3(89), 23-30.

Romero-Franco, N., Martínez-Amat, A., & Martínez-López, E. J. (2016). Efecto del entrenamiento propioceptivo en atletas velocistas / Effect of the proprioceptive training in sprinters. *Revista Internacional de Medicina y Ciencias de la Actividad Física y del Deporte*, 13(51), 437-451. Recuperado de <http://cdeporte.rediris.es/revista/revista51/artefecto393.htm>