Information about the course

Degree: Bachelor of Sciences of Physical Activity and Sport

Faculty: Faculty of Physical Activity and Sport Sciences

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

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

Module: 1) Basic Training Module

Subject Matter: Behavioral and social foundations of human motor skills. **Type:** Formación Básica

Branch of knowledge: Health Sciences

Department: Basic Sciences and Cross-disciplinary Subjects

Type of learning: Classroom-based learning

Language/-s in which it is given: Spanish

Teachers:

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282D	Gustavo Daniel Represas Lobeto **(Profesor responsable)**	gd.represas@ucv.es
282X	Arnau Oliver Peretó **(Profesor responsable)**	arnau.oliver@ucv.es

Module organization

1) Basic Training Module

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

Learning outcomes

Al finalizar la asignatura, el estudiante deberá demostrar haber adquirido los siguientes resultados de aprendizaje:

R1 - Summarize, evaluate, and contrast statistical data related to physical and sports activity based on the scientific method.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Analyze, identify, diagnose, promote, guide and evaluate strategies, actions and activities that encourage 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 by citizens with the purpose of improving their comprehensive health, well-being and quality of life, and with emphasis on special populations such as: older people (senior citizens), schoolchildren, people with disabilities and people with pathologies, health or assimilated problems (diagnosed and/or prescribed by a doctor) taking into account gender and diversity.

- Apply the principles derived from the concept of integral ecology in your proposals or actions, whatever the scope and area of knowledge and the contexts in which they are proposed.

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

- Articulate and deploy programs for the promotion, orientation, coordination, supervision and technical-scientific evaluation of physical activity, physical exercise and sport for the entire population, with emphasis on special populations, with the presence of a professional or carried out in a autonomous by the citizen, in the different types of spaces and in any sector of professional intervention in physical activity and sport (formal and informal physical-sports teaching; physical and sports training; physical exercise for health; direction of physical activity and sport) according to the possibilities and needs of citizens, with the aim of achieving their autonomy, understanding, and the greatest and most appropriate practice of physical activity and sport.

- Design and apply the methodological process integrated by observation, reflection, analysis, diagnosis, execution, technical-scientific evaluation and/or dissemination in different contexts and in all sectors of professional intervention in physical activity and sports.

- Develop theoretical-practical responses based on the sincere search for the full truth and the integration of all dimensions of the human being when faced with the great questions of life.

- Identify, organize, direct, plan, coordinate, implement and evaluate the professional performance of human resources, with emphasis on direction, coordination, planning, supervision and technical-scientific evaluation of the activity, performance carried out and the provision of services. services by physical activity and sport professionals, in all types of services and in any type of organization, context, environment and with emphasis on special populations and in any sector of professional intervention of physical activity and sport, guaranteeing safety , efficiency and professionalism in the activity carried out in compliance with current regulations.

- 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 emphasis on specific populations. special such as: older people (seniors), 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.

- Respect and put into practice the ethical principles and action proposals derived from the objectives for sustainable development, transferring them to all academic and professional activities.

- Understand, develop and know how to apply the procedures, strategies, activities, resources, techniques and methods that intervene in the teaching-learning process efficiently, developing the entire course of action in all sectors of professional intervention of physical activity and sport (formal and informal physical-sports teaching; physical and sports training; physical exercise for health; direction of physical activity and sports).

Type of AR: Conocimientos o contenidos

- Know and understand the bases of the methodology of scientific work.

Type of AR: Competencias

- Analyze, review and select the effect and effectiveness 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.

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

- Articulate and display an advanced level of skill in the analysis, design and evaluation of assessment and control tests of physical condition and physical-sports performance.

R2 - Critically analyze and interpret statistical research results in the field of Physical Education and Sports Sciences.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Analyze, identify, diagnose, promote, guide and evaluate strategies, actions and activities that encourage 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 by citizens with the purpose of improving their comprehensive health, well-being and quality of life, and with emphasis on special populations such as: older people (senior citizens), schoolchildren, people with disabilities and people with pathologies, health or assimilated problems (diagnosed and/or prescribed by a doctor) taking into account gender and diversity.

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- Design and apply the methodological process integrated by observation, reflection, analysis, diagnosis, execution, technical-scientific evaluation and/or dissemination in different contexts and in all sectors of professional intervention in physical activity and sports.

- Develop theoretical-practical responses based on the sincere search for the full truth and the integration of all dimensions of the human being when faced with the great questions of life.

- Identify, organize, direct, plan, coordinate, implement and evaluate the professional performance of human resources, with emphasis on direction, coordination, planning, supervision and technical-scientific evaluation of the activity, performance carried out and the provision of services. services by physical activity and sport professionals, in all types of services and in any type of organization, context, environment and with emphasis on special populations and in any sector of professional intervention of physical activity and sport, guaranteeing safety , efficiency and professionalism in the activity carried out in compliance with current regulations.

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- Respect and put into practice the ethical principles and action proposals derived from the objectives for sustainable development, transferring them to all academic and professional activities.

- Understand, develop and know how to apply the procedures, strategies, activities, resources, techniques and methods that intervene in the teaching-learning process efficiently, developing the entire course of action in all sectors of professional intervention of physical activity and sport (formal and informal physical-sports teaching; physical and sports training; physical exercise for health; direction of physical activity and sports).

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- Articulate and display an advanced level of skill in the analysis, design and evaluation of assessment and control tests of physical condition and physical-sports performance.

R3 - Perform basic statistical analyses in the context of Physical Education and Sports Sciences using specific data processing programs.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Analyze, identify, diagnose, promote, guide and evaluate strategies, actions and activities that encourage 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 by citizens with the purpose of improving their comprehensive health, well-being and quality of life, and with emphasis on special populations such as: older people (senior citizens), schoolchildren, people with disabilities and people with pathologies, health or assimilated problems (diagnosed and/or prescribed by a doctor) taking into account gender and diversity.

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Assessment system

Modalidad presencial

Assessed learning outcomes	Granted percentage	Assessment tool
R1, R2, R3	60,00%	Written and/or practical tests.
R1, R2, R3	15,00%	Individual or Group Work / Project.
R1, R2	5,00%	Self appraisal.
R1, R2, R3	20,00%	Non-face-to-face autonomous work.

Observations

-The student may keep the assessment instruments passed during the 3 years following the first registration, if the teacher considers it appropriate.
-It is necessary to obtain 50% in the following instruments (if this criterion is not met, the student will be graded with a maximum of 4.5 in this exam session):
- ·Written and/or practical tests
- ·Individual or group work/project
- ·Autonomous work not in attendance

- This subject is NOT subject to single assessment according to what is indicated in article 10.3 of the GENERAL RULES ON ASSESSMENT AND GRADING OF OFFICIAL COURSES AND UCV's OWN DEGREES.

The detailed explanation (procedure of the tasks) as well as the evaluation instruments (cards or rubrics) of each section will be published on the platform of each group at the student's disposal.

Use of Artificial Intelligence Tools in the CAFD Degree Program

Use of Artificial Intelligence tools in the CAFD degree program In the Bachelor's Degree in Physical Activity and Sports Sciences (CAFD), the use of Artificial Intelligence (AI) tools is permitted in a complementary and responsible manner, as long as it contributes to active learning, the development of critical thinking, and the improvement of students' professional skills. Under no circumstances should AI replace personal effort, direct practice, or independent reflection, which are fundamental pillars of this degree program.

Permitted Uses of AI:

·Obtaining alternative explanations of theoretical or methodological concepts.

·Generating outlines, concept maps, or summaries to support study.

·Simulating interviews, questionnaires, or training sessions as part of methodological or research practices.

·Receiving feedback on report writing, provided that the original content is the student's own.

·Supporting the search for bibliography or scientific references, always contrasting with reliable and real academic sources, and respecting the CAFD regulations for the presentation of university work.

Prohibited Uses of AI:

·Writing complete sections of academic papers, classroom exercises and practices, internship reports, journals, or portfolios, as well as the Final Degree Project.

·Formulating hypotheses, objectives, or conclusions for academic work.

·Replacing qualitative or quantitative data analysis with automated tools without human validation.

·Creating videos, presentations, or avatars with AI as a substitute for the student's oral or practical presentation.

·Obtaining automatic answers to tests, rubrics, or assessable activities through the use of AI.

Citation and Attribution Guidelines:

·Any use of AI tools must be explicitly acknowledged in the submitted document (e.g., in a footnote or appendix).

·The name of the tool, the purpose of use (e.g., grammatical review, organization of ideas, interview simulation), and where it was used in the work must be indicated.

·Responsible use of AI will be evaluated within the framework of originality, academic honesty, and digital competence.

Additional recommendations:

Students are encouraged to combine the use of AI with traditional methods (manual problem solving, practical session design, direct observation, etc.) to ensure the comprehensive development of their skills.

If there are any doubts about the permitted use of AI in a specific activity, students should consult the faculty responsible for the course.

Actividades formativas

The methodologies to be used so that the students reach the expected learning outcomes will be the following:

M2 Resolution of problems and cases.

M3 Discussion in small groups.

M4 Practical laboratories.

M5 Presentation of content by the teacher.

M6 Practical lesson.

M7 Group dynamics and activities.

IN-CLASS TRAINING ACTIVITIES

ACTVITY	RELATIONSHIP WITH THE COURSE LEARNING OUTCOMES	METHODOLOGY	HOURS	ECTS
THEORETICAL CLASS: Presentation of contents by the teacher. Competency analysis. Demonstration of capabilities, skills and knowledge in the classroom.	R1, R2, R3	Presentation of content by the teacher.	32,00	1,28

PRACTICAL CLASS / SEMINAR: Group dynamics and activities. Resolution of problems and cases. Practical laboratories. Data search, computer classroom, library, etc. Meaningful construction of knowledge through student interaction and activity.	R1, R2, R3	Discussion in small groups. Practical laboratories. Practical lesson.	20,00	0,80
EVALUATION: Set of oral and/or written tests used in the evaluation of the student, including the oral presentation of the final degree project.	R1, R2, R3	Practical lesson.	4,00	0,16
TUTORING: Supervision of learning, evolution. Discussion in small groups. Resolution of problems and cases. Presentation of results before the teacher. Presentation of diagrams and indexes of the proposed works.	R1, R2, R3	Presentation of content by the teacher.	4,00	0,16
TOTAL			**60,00**	**2,40**

TRAINING ACTIVITIES OF AUTONOMOUS WORK

ACTVITY	RELATIONSHIP WITH THE COURSE LEARNING OUTCOMES	METHODOLOGY	HOURS	ECTS
GROUP WORK: Problem solving. Preparation of exercises, memoirs, to present or deliver in classes and/or in tutoring.	R1, R2, R3	Discussion in small groups. Group dynamics and activities.	20,00	0,80
SELF-EMPLOYED WORK: Study, Individual preparation of exercises, assignments, reports, to present or deliver in classes and/or in tutoring. Activities in platform or other virtual spaces.	R1, R2, R3	Resolution of problems and cases. Discussion in small groups.	70,00	2,80
TOTAL			**90,00**	**3,60**

Description of contents

Descripción de contenidos necesarios para la adquisición de los resultados de aprendizaje.

Theoretical content:

Block of content	Contents
1. Introduction to Statistics.	Introduction to Statistics.
2. Descriptive statistics on one and two variables.	Descriptive statistics on one and two variables.
3. Introduction to probability.	Introduction to probability.
4. Random variables and probability distributions.	Random variables and probability distributions.
5. Introduction to Statistical Inference.	Introduction to Statistical Inference.
6. Confidence interval estimation.	Confidence interval estimation.
7. Hypothesis testing	Hypothesis testing

Temporary organization of learning:

Block of content	Sessions	Hours
1. Introduction to Statistics.	1	2,00
2. Descriptive statistics on one and two variables.	6	12,00
3. Introduction to probability.	3	6,00
4. Random variables and probability distributions.	5	10,00
5. Introduction to Statistical Inference.	1	2,00
6. Confidence interval estimation.	5	10,00
7. Hypothesis testing	9	18,00

References

REFERENCES:

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.

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