Information about the course

Degree: Bachelor of Sciences of Physical Activity and Sport

Faculty: Faculty of Physical Activity and Sport Sciences

Code: 280314 **Name:** Evaluation of Biological Condition

Credits: 6,00 ECTS **Year:** 3 **Semester:** 1

Module: 3) Specific Obligatory Formation Module.

Subject Matter: Physical exercise, fitness and sports physical training. **Type:** Obligatoria

Branch of knowledge: Health Sciences

Department: Physical Preparation and Conditioning

Type of learning: Classroom-based learning

Language/-s in which it is given: Spanish

Teachers:

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Module organization

3) Specific Obligatory Formation Module.

Subject Matter	ECTS	Subject	ECTS	Year/semester
Physical activity and physical exercise for health and with special populations.	12	Physical Activity and Health	6	3/1
		Presciption and Programmes for Healthy Lifestyles	6	4/1
Physical exercise, fitness and sports physical training.	18	Evaluation of Biological Condition	6	3/1
		Planning and Methodology of Training in PA	6	3/2
		Prevention and Rehabilitation of Injuries in PA	6	4/1
Teaching of Physical Education and Sports.	18	Design, Evaluation and Intervention in Educational Programmes	6	4/1
		Didactics and Methodology of Sports and Physical Activity	6	3/1
		Social Morality and Professional Deontology	6	4/1
Sports organization and management.	12	Sports Marketing	6	3/2
		Sports Training Planning and Organisation	6	3/1

Learning outcomes

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

R10 - Proficiently use various technologies to evaluate the physical-sports preparation and/or training process.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Deploy an advanced level in the planning, application, control and evaluation of physical and sports training processes.

- 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.

- Identify, communicate and apply scientific anatomical-physiological and biomechanical criteria at an advanced level of skills in the design, development and technical-scientific evaluation of appropriate procedures, strategies, actions, activities and guidelines; to prevent, minimize and/or avoid a health risk in the practice of physical activity and sport in all types of population.

- 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.

Type of AR: Competencias

- 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.

R11 - Apply assessment procedures and instruments to determine the level of acquisition of physical-sports skills across different ages and contexts

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Deploy an advanced level in the planning, application, control and evaluation of physical and sports training processes.

- 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.

- Identify, communicate and apply scientific anatomical-physiological and biomechanical criteria at an advanced level of skills in the design, development and technical-scientific evaluation of appropriate procedures, strategies, actions, activities and guidelines; to prevent, minimize and/or avoid a health risk in the practice of physical activity and sport in all types of population.

- 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.

Type of AR: Competencias

- 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.

R5 - Correctly handle different technologies to design the physical-sports preparation and/or training process.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Deploy an advanced level in the planning, application, control and evaluation of physical and sports training processes.

- 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.

- Identify, communicate and apply scientific anatomical-physiological and biomechanical criteria at an advanced level of skills in the design, development and technical-scientific evaluation of appropriate procedures, strategies, actions, activities and guidelines; to prevent, minimize and/or avoid a health risk in the practice of physical activity and sport in all types of population.

- 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.

Type of AR: Competencias

- 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.

R8 - Assess (measure and interpret results) physical fitness to optimize health and/or physical-sports performance.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- 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.

- Deploy an advanced level in the planning, application, control and evaluation of physical and sports training processes.

- 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, communicate and apply scientific anatomical-physiological and biomechanical criteria at an advanced level of skills in the design, development and technical-scientific evaluation of appropriate procedures, strategies, actions, activities and guidelines; to prevent, minimize and/or avoid a health risk in the practice of physical activity and sport in all types of population.

- 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.

Type of AR: Conocimientos o contenidos

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

Type of AR: Competencias

- 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.

R9 - Analyze the qualitative and quantitative results of physical-sports programs applied in different populations and contexts.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Deploy an advanced level in the planning, application, control and evaluation of physical and sports training processes.

- 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.

- Identify, communicate and apply scientific anatomical-physiological and biomechanical criteria at an advanced level of skills in the design, development and technical-scientific evaluation of appropriate procedures, strategies, actions, activities and guidelines; to prevent, minimize and/or avoid a health risk in the practice of physical activity and sport in all types of population.

- 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.

Type of AR: Conocimientos o contenidos

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

Type of AR: Competencias

- 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.

Assessment system

Modalidad presencial

Assessed learning outcomes	Granted percentage	Assessment tool
R8, R9, R10, R11	40,00%	Written and/or practical tests.
R8, R9, R10, R11	50,00%	Individual or Group Work / Project.
R8, R9, R10, R11	10,00%	Self appraisal.

Observations

Observations

This course is NOT eligible for a single assessment request in accordance with Article 10.3 of the GENERAL REGULATIONS FOR ASSESSMENT AND GRADING OF OFFICIAL COURSES AND UCV DEGREE PROGRAMS.

The student may keep the evaluation instruments passed during the 3 years following the first enrollment.

It is necessary to obtain a 50% in all the evaluation instruments to pass the course.

If any of these criteria is not met, the student will be graded with a maximum of 4.5.

SPECIFICATIONS OF THE EVALUATION INSTRUMENTS

Written and/or practical tests

It consists of a test of theoretical-practical contents (40%) that combines questions (20-25) of short answer, evaluation of data and graphs, as well as multiple-choice questions (1 wrong subtracts 33.3% of a question) and true-false questions (1 wrong subtracts 50% of a question).

Individual or Group Work / Project

It consists of the completion of individual and group practical work by platform (50%), with delivery of written practices by platform. Pass/Fail by delivery. It is necessary to obtain a 5 out of 10

to obtain an average.

Self-assessment

There will be a self-evaluation (10%) where the student will evaluate by answering some items his activity in the subject during the course.

The detailed explanation (procedure for the assignments) as well as the evaluation tools (worksheets or rubrics) of each section will be posted 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:

M1 Attendance at practices.

M2 Resolution of problems and cases.

M3 Discussion in small groups.

M5 Presentation of content by the teacher.

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.	R8, R9, R10, R11	Presentation of content by the teacher. Group dynamics and activities.	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.	R8, R9, R10, R11	Attendance at practices. Resolution of problems and cases. Discussion in small groups.	24,00	0,96
EVALUATION: Set of oral and/or written tests used in the evaluation of the student, including the oral presentation of the final degree project.	R8, R9	Resolution of problems and cases.	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.	R8, R9, R10, R11	Resolution of problems and cases. Discussion in small groups. Group dynamics and activities.	10,00	0,40
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.	R8, R9	Resolution of problems and cases.	80,00	3,20
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
BLOCK I	Biological condition assessment: concepts and resources
BLOCK II	Functional assessment of aerobic metabolism
BLOCK III	Functional assessment of anaerobic metabolism
BLOCK IV	Functional assessment of flexibility
BLOCK V	Functional assessment of strength
BLOCK VI	Functional assessment of physical abilities

Temporary organization of learning:

Block of content	Sessions	Hours
BLOCK I	6	12,00
BLOCK II	6	12,00
BLOCK III	5	10,00
BLOCK IV	4	8,00
BLOCK V	5	10,00
BLOCK VI	4	8,00

References

BASIC BIBLIOGRAPHY:

Astrand, P.O., y Rodahl, K. (1993). Fisiología del trabajo físico. Panamericana. Barcelona.

Barbany, J.R. (1990). Fundamentos de fisiología del ejercicio y del entrenamiento. Barcanova.Barcelona.

Bowers, R.W., y Fox, E.L. (1995). Fisiología del deporte. Panamericana. Barcelona.

Burke, E.R. (2002). High-tech cycling. USA: Human kinetics.(UV: PE FD D 02961)

Craig, N., Walsh, C. Martin, D.T., Woolford, S., Bourdon, P., Stanef, T., Barnes, P. y Savage, B. (2000). Protocols for the physiological assessment of high-performance track, road and mountain cyclist. In Physiological test for elite athletes. (258-278). Australia: Human Kinetics.

Dufour, J. (1990). Las técnicas de observación del comportamiento motor. La observación tratada por ordenador. RED. 4 (4). 16-22.

García Manso, J.M (1996). Pruebas para la valoración de la capacidad motriz en el deporte: evaluación de la condición física. Gymnos. Madrid. (UV PE FD M/612 GAR)

George, J.D., Fisher, A.G., y Vehrs, P.R. (1996). Test y pruebas físicas. Paidotribo. Barcelona.

González, J. (1992). Fisiología de la actividad física y del deporte. McGraw-Hill. Interamericana. Madrid.

González Badillo, J. J. (2023). Cómo programar el entrenamiento de fuerza. Librería deportiva Esteban Sanz.

González Badillo, J. J., y Ribas Sema, J. (2020). Fuerza, velocidad y rendimiento físico deportivo (2.a ed.). Librería deportiva Esteban Sanz.

Gregor, R.J. y Conconi, F. (2000). Road Cycling. Oxford: Blackwekk science Ltd.

Guyton, A.C., y Hall, J.E. (1996). Tratado de Fisiología médica. McGraw-Hill. Interamericana. Madrid.

Heyward, Vivian H. (1996). Evaluación y prescripción del ejercicio. Paidotribo. Barcelona (UV: PE.159.9:796 HEY // PE FP C/00279)

Heyward, Vivian H. (2008). Evaluación de la aptitud física y prescripción del ejercicio. Panamericana. Madrid (UV: PE FD M/613.7

Legido Arce, J. C., Silvarrey Varela, F. L., & Segovia Martinez, J. C. (1996). Manual de valoracion funcinal. Madrid; Spain: Eurobook.

Legido, J.C., Segovia, J.C., y Ballesteros, J.M. (1996). Valoración de la condición física por medio de test. Ediciones Pedagógicas, Colección Educación Física y Deporte. Madrid.

López Chicharro, J. Aznar Laín, S. Fernández Vaquero, A. López Mojares, L.M. Lucía Mulas, A. Pérez Ruiz, M. (2004). Transición aeróbica-anaeróbica. Concepto, metodología de determinación y aplicaciones. Ed. Master Line & Prodigio S.L. Madrid.

López-Chicharro J., y Fernández-Vaquero A. (1995). Fisiología del ejercicio. Panamericana. Barcelona.

López-Chicharro, J. y Legido, J.C. (1991). Umbral anaeróbico. Bases fisiológicas y aplicación. McGraw-Hill. Interamericana. Madrid.

MacDougall, J.D. (2005). Evaluación fisiológica del deportista. Badalona: Paidotribo. (SJB:

612.766-LOP-fis // 612.76-EVA)
Martinez Lopez, E.J. (2002). Pruebas de aptitud física. Paidotribo.Barcelona (UV: PE 159.9:796 MAR)
McArdle, W., Katch, F.I., y Katch, V.L. (1991). Fisiología del ejercicio. Energía, nutrición rendimiento humano. Alianza Deporte. Madrid.
Mujika, I. (2023). Endurance training: Science and Practice (2.a ed.). Iñigo Mujika.
Robertson, G. E.. (2004). Research methods in Biomechanics. Human Kinetics. Champaign,IL
Terreros, J.L (2003). Valoración funcional: aplicaciones al entrenamiento deportivo. Gymnos. (UV:PE FD M/796.015 VAL)
Thomas, J.R, Nelson, J.K. (2007). Métodos de investigación en actividad física. Paidotribo.Barcelona. (SJB)
Winter, E.M., Jones, A.M., Davison, R.C.R., Bromley, P.D. y Mercer, T.H. (2007). Sport andexercise physiology testing guidelines: the British Association of Sport and Exercise SciencesGuide. Oxon: Routledge.