Information about the subject

Degree: Bachelor of Sciences of Physical Activity and Sport

Faculty: Faculty of Physical Activity and Sport Sciences

Code: 281203 **Name:** Kinesiology

Credits: 6,00 **ECTS Year:** 2 **Semester:** 1

Module: 1) Basic Training Module

Subject Matter: Biological and Mechanical Foundations of Human Motor Skills **Type:** Basic Formation

Field of knowledge: Health Sciences

Department: Physical Preparation and Conditioning

Type of learning: Classroom-based learning

Languages in which it is taught: Spanish

Lecturer/-s:

1164DT	Alejandro Sanz Bayo **(Responsible Lecturer)**	alejandro.sanz@ucv.es
282A	Alejandro Sanz Bayo **(Responsible Lecturer)**	alejandro.sanz@ucv.es
282B	Consuelo Moratal Lull **(Responsible Lecturer)**	consuelo.moratal@ucv.es
282C	Ignacio Tamarit Grancha **(Responsible Lecturer)**	ignacio.tamarit@ucv.es
282D	Ignacio Tamarit Grancha **(Responsible Lecturer)**	ignacio.tamarit@ucv.es
282X	Ignacio Tamarit Grancha **(Responsible Lecturer)**	ignacio.tamarit@ucv.es

Module organization

1) Basic Training 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
		Statitics 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	Explain, identify, and apply theoretical-practical knowledge about different anatomical-physiological systems that enable any physical activity
R2	Evaluate joint range and/or functional capacity to optimize health and physical performance.
R3	Design, experiment, and correct the technical execution of tasks/exercises/technical movements, providing appropriate feedback

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):

	Weighting			
	1	2	3	4

Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
R1, R2, R3	60,00%	Written and/or practical tests.
R1, R2, R3	30,00%	Individual or Group Work / Project.
R1, R2, R3	10,00%	Exercises and Practices in the Classroom.

Observations

This course is NOT eligible for a single assessment request in accordance with Article 10.3 of the GENERAL REGULATIONS FOR THE ASSESSMENT AND GRADING OF OFFICIAL COURSES AND UCV DEGREE PROGRAMS.
Students may keep the assessment instruments passed during the 3 years following the first enrolment.
A grade of **50%** must be obtained in the following assessment instruments in order to pass the course:
·Written and/or practical tests
·Individual or group work/project
A grade of **70%** must be obtained in the following assessment instruments in order to pass the course:
·Classroom exercises and practical work
Additionally, for this course, if students do not attend **100% of the group presentations**, they will fail both exam sessions for the course and will have to retake them in the following enrollment period.
If any of these criteria is not met, the student will be graded with a maximum of 4.5.

SPECIFICATIONS OF THE EVALUATION INSTRUMEN

Individual or Group Work / Project

To pass this assessment tool, students must achieve at least 50% of the total assigned. This percentage is obtained from the average of the following two activities, both of which are mandatory, meaning that students must pass both parts, as each contributes equally to the achievement of the established criteria:
·Analysis of a sports movement (15%)
·Development and implementation of a session focused on joint movement (15%).

Written and/or practical tests

This assessment consists of a single final test with two parts, which will be held on the official exam dates. To pass, students must achieve at least 50% of the total assigned. It is essential to have obtained a minimum score of 5 points in the multiple-choice test in order to access the practical test. In addition, it is essential to pass both parts (test and practical) for the instrument to be considered passed:

- Multiple-choice test (40%):
  - 40 questions. 3 options: 1 wrong subtracts 50%.
- Practical test** (20%):
  - 2 questions to be examined out of 1.

Exercises and Classroom Practices

The tests included in this instrument are as follows:

- Assignments and/or practices submitted via the platform.

The detailed explanation (procedure for the assignments) as well as the assessment tools (worksheets or rubrics) for each section will be posted on each group's platform 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.

Learning activities

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

M1 Attendance at practices.

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 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. M5	R1, R2, R3	22,00	0,88
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. M3, M4, M6, M7	R1, R2, R3	30,00	1,20
EVALUATION: Set of oral and/or written tests used in the evaluation of the student, including the oral presentation of the final degree project. M2, M7	R1, R2, R3	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. M5	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 present or deliver in classes and/or in tutoring. M3, M6, M7	R1, R2, R3	32,00	1,28
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. M2	R1, R2, R3	58,00	2,32
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. Human Movement: Application of human movement in relation to type of exercise	Human Movement: Application of human movement in relation to type of exercise
2. Exercises in the different body planes and axes	Exercises in different body planes and axes
3. Joint Behaviour: Muscle levers	Joint behaviour: Muscle levers
4. Pulleys: Main uses for muscular exercise	Pulleys: Main uses for muscular exercise
5. Muscle chains	Muscle chains
6. Joint assessment	Joint assessment
7. Muscle assessment	Muscle assessment

Temporary organization of learning:

Block of content	Number of sessions	Hours
1. Human Movement: Application of human movement in relation to type of exercise	4,00	8,00
2. Exercises in the different body planes and axes	5,00	10,00
3. Joint Behaviour: Muscle levers	5,00	10,00
4. Pulleys: Main uses for muscular exercise	4,00	8,00
5. Muscle chains	4,00	8,00
6. Joint assessment	6,00	12,00
7. Muscle assessment	2,00	4,00

References

BASIC BIBLIOGRAPHY:

Ahonen, J., Lahtinen, T., & Sandstrom, M. (2001). *Kinesiología y Anatomía aplicada a la actividad física* (2a ed.). Paidotribo.

Bosch, F., & Cook, K. (2015). *Strength training and coordination: an integrative approach*. 2010 Publishers.

Boyle, M. (2017). *El entrenamiento funcional aplicado a los deportes* (1a ed.). Ediciones Tutor, SA.

Busquet, L. (2002). *Las cadenas musculares* (Tomo 1-4. 1a ed.). Paidotribo.

Calais, B. (1991). *Anatomía para el movimiento* (Tomo I. 12a ed.). Los Libros de la Liebre de Marzo.

Calais, B. (1994). *Anatomía para el movimiento* (Tomo II. 12a ed.). Los Libros de la Liebre de Marzo.

Clarkson, H. (2003). *Proceso evaluativo músculo esquelético* (1a ed.). Paidotribo.

Cleather, D. (2021). *Force: The biomechanics of training*. Independently published.

Contreras, B. (2014). *Anatomía del entrenamiento de la fuerza con el propio peso corporal. Guía ilustrada para mejorar la fuerza, la potencia y la definición muscular* (1a ed.). Ediciones Tutor, SA.

Delavier, F. (2001). *Guía de los movimientos de musculación. Descripción anatómica* (4a ed.). Paidotribo.

Enoka, R. (1994). *Neuromechanical Basis of Kinesiology* (2a ed.). Human Kinetics.

Guyard, J. C. (2008). *Manual práctico de cinesiología* (2a ed.). Paidotribo.

Hough, P., & Penn, S. (2017). *Advanced Personal Training*. Routledge.

Kapandji, Y.A. (1982). *Cuadernos de fisiología articular* (Tomo 1, 2, 3. 6a ed.). Masson.

Kendall, F. P. (2007). *Músculos: pruebas funcionales, postura y dolor* (5a ed.). Marban.

Kendall, F.P., & Kendall McCreary, E. (1985). *Músculos, pruebas y funciones* (5a ed.). Jims.

Levangie, P. K., & Norkin, C. C. (2019). *Joint structure and function: A comprehensive analysis* (6th ed.). F.A. Davis Company.

Lloret, M., & Sancha, J.A. (2003). *Anatomía aplicada a la actividad fisiodeportiva* (3a ed.). Paidotribo.

Maniar, N., Zelik, K. E., Saxby, D. J., Cazzola, D., & Gerus, P. (2022). Muscle force contributions to anterior cruciate ligament loading. *Journal of Biomechanics, 141*, 111175.

Milo, J. (2020). *Manual de Fuerza Anatomía y entrenamiento* (1a ed.). Jeronimo Milo.

Neumann, D. A. (2016). *Kinesiology of the musculoskeletal system* (3rd ed.). Mosby.

Neumann, D. A., & Serra Año, P. (2022). *Cinesiología del sistema musculoesquelético: Fundamentos para la rehabilitación* (P. Serra Año, Trad.). Editorial Médica Panamericana S.A.

Plas, F., Viel, E., & Blanc, E. (1984). *La marcha humana: cinesiología dinámica, biomecánica y patomecánica* (1a ed.). Masson.

Rasch, P.J., & Burke, R.K. (1991). *Kinesiología y anatomía aplicada* (2a ed.). El Ateneo.

Rasch, P.J., & Burke, R.K. (1991). *Kinesiología y anatomía aplicada: La ciencia del movimiento humano* (1a ed.). El Ateneo.
Taboadela, C.H. (2007). *Goniometría. Una herramienta para la evaluación de las incapacidades laborales* (2a ed.). Asociart ART.
Thompson, C., & Floyd, R.T. (1996). *Manual de Kinesiología structural* (2a ed.). Paidotribo.
Uchida, T. K., & Delp, S. L. (2021). *Biomechanics of movement: The science of sports, robotics, and rehabilitation*. The MIT Press.
Vigotsky, A. D., Zelik, K. E., Lake, J., & Hinrichs, R. N. (2019). Mechanical misconceptions: Have we lost the “mechanics” in “sports biomechanics”? *Journal of Biomechanics, 93*, 1-5.
Zatsiorsky, V. M., & Prilutsky, B. I. (2012). *Biomechanics of skeletal muscles*. Human Kinetics.