Information about the subject

Degree: Bachelor of Science Degree in Podiatry

Faculty: Faculty of Medicine and Health Sciences

Code: 472005 **Name:** Sports Podiatry

Credits: 6,00 **ECTS Year:** 3 **Semester:** 2

Module: GENERAL PODOLOGY AND BIOMECHANICS

Subject Matter: Biomechanics **Type:** Elective

Field of knowledge: Health Sciences

Department: Pathology

Type of learning: Classroom-based learning

Languages in which it is taught: Spanish

Lecturer/-s:

Module organization

GENERAL PODOLOGY AND BIOMECHANICS

Subject Matter	ECTS	Subject	ECTS	Year/semester
General Podiatry	21,00	Evolutionary Podiatry	3,00	This elective is not offered in the academic year 24/25
		Expertise in podiatry	3,00	This elective is not offered in the academic year 24/25
		General Podiatry	6,00	1/2
		Preventive Podiatry	3,00	4/1
		Social Morality. Deontology	6,00	3/1
Biomechanics	27,00	Biomechanics	6,00	2/2
		Ergonomics and footwear	3,00	4/1
		General Intervention Procedures	6,00	This elective is not offered in the academic year 24/25
		Physiotherapy Assessment	6,00	This elective is not offered in the academic year 24/25
		Sports Podiatry	6,00	3/2
Radiology	6,00	Radiology and Radiation Protection	6,00	3/1

Research and management	12,00	Introduction to research and sanitary documentation	6,00	4/1
		Planning and management of the podiatric clinic	6,00	4/2

Recommended knowledge

It is important that the student masters the physiological biomechanics of gait. In addition to a thorough review of all the anatomy taught.

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	Completes the orthopodological clinical history.
R2	Knows the area of performance of sports podology.
R3	Evaluates both the physiological and pathological processes that affect the foot in the athlete.
R4	The student can describe, analyze and apply the main treatments in the field of sports podology.
R5	The student conducts a study of the sports footwear based on the characteristics of the surface and modality of the sport to be developed.
R6	The student is trained to know the exploratory methods and to evaluate the results.
R7	The student knows the different competences of the members of a multidisciplinary team.

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):

BASIC		Weighting			
		1	2	3	4
CB1	Students demonstrate knowledge and understanding in an area of study that is at the core of general secondary education, and is often at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the cutting edge of their field of study.			x	
CB3	Students have the ability to gather and interpret relevant data (usually within their area of study) to make judgments that include reflection on relevant social, scientific or ethical issues.			x	

GENERAL		Weighting			
		1	2	3	4
CG1	Students know and apply the theoretical and methodological foundations of Chiropody and Podiatry.		x		
CG2	Students know the structure and function of the human body, especially of the lower limb, semiology, mechanisms, causes and general manifestations of the disease and diagnostic methods of medical and surgical pathological processes, interrelating general pathology with foot pathology.		x		
CG3	Students develop the capacity, ability and skill necessary to diagnose, prescribe, indicate, perform and/or elaborate and evaluate any type of podiatric, orthopedic, chiropractic, podiatric surgery, physical, pharmacological, preventive and/or educational treatment, based on the clinical history.			x	
CG4	Students acquire adequate clinical experience in each of the podiatry contents, carried out in centres accredited for university podiatry training, promoting interrelationship and effective communication with patients, relatives, and members of the multidisciplinary team.			x	

CG8	Acquire work skills in the educational and research environments, health care, as well as in uniprofessional and multiprofessional teams. Advise on the development and implementation of care and education policies on issues related to prevention and podiatry care			x	
CG10	Identify that the practice of the profession is based on respect for patient autonomy, beliefs, culture, genetic, demographic and socio-economic determinants, applying the principles of social justice and understanding the ethical implications in a changing global context.			x	

SPECIFIC		Weighting			
		1	2	3	4
CE37	Students know the basics of biomechanics and kinesiology. Support theories. Human walking. Structural alterations of the foot. Postural alterations of the locomotive system with repercussions on the foot and vice versa. Instruments of biomechanical analysis.				x
CE39	Students know the basics of podiatry. Ergonomics. History of the profession and conceptual framework. Concept of the profession. Technical nomenclature used in health sciences. Students acquire skills in the clinical management of podiatry services.			x	
CE48	Students design, obtain and apply by means of different techniques and materials the plantar supports and digital orthoses, prostheses, splints. Plantar and digital orthoses. Study of footwear and shoe therapy. Prescription of orthopaedic treatments of the lower limb			x	

TRANSVERSAL		Weighting			
		1	2	3	4
CT1	Analytical capabilities			x	
CT2	Organizational and planning skills			x	
CT3	Oral and written communication in native language			x	
CT6	Information management capacity			x	
CT7	Problem solving			x	

CT8	Decision making		x
CT10	Interdisciplinary teamwork		x
CT14	Critical Reasoning		x
CT15	Ethical commitment		x
CT16	Autonomous learning		x
CT17	Adaptation to new situations		x
CT18	Creativity		x
CT22	Motivation for quality		x

Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
	30,00%	Open questions
	50,00%	Tests
	5,00%	Oral presentation
	10,00%	Practice (exercises, case studies, problems)
	5,00%	Class participation

Observations

MENTION OF DISTINCTION:
According to Article 22 of the Regulations governing the Evaluation and Qualification of UCV Courses, the mention of "Distinction of Honor" may be awarded by the professor responsible for the course to students who have obtained, at least, the qualification of 9 over 10 (“Sobresaliente”). The number of "Distinction of Honor" mentions that may be awarded may not exceed five percent of the number of students included in the same official record, unless this number is lower than 20, in which case only one "Distinction of Honor" may be awarded.

Learning activities

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

M1 Theoretical classes (TC). Training activity preferably oriented to the acquisition of knowledge skills. It is characterised by the fact that students are spoken to. Also called master class or expository class, it refers to the oral exposition made by the teacher, (with the support of a blackboard, computer and cannon for the exposition of texts, graphics, etc.).

M2 Seminars (S). Training activity preferably oriented to obtain knowledge application and research competences. Knowledge is built through interaction and activity. Consisting of supervised monographic sessions with shared participation (Teachers, students, experts). The size of the group is variable, from a large group to small groups, no less than 6 students for interaction. The evaluation will be made by means of follow-up records by the teacher. Participation and development of problem-solving skills should be taken into account.

M3 Problems practice (CPP). Training activity oriented to group work for problem solving under the supervision of a teacher. The size of the group is variable, in a range of 10-20 students, to avoid confusion with a master class.

M4 Classroom practice (CPA). Training activity of work in groups that is developed in the classroom. It includes work with documents (e.g.: work with articles or documents, clinical case studies, diagnostic analyses, etc). The size of the group is variable, in a range of 10-20 students.

M5 Computer Practice (CPI). Training activity of work in groups that is developed in the Computer Classroom where the learning is developed using the computer as a support. It includes the work with computer models, specific software, web queries, etc. The size of the group is variable, in a range of 10-20 students.

M6 Laboratory Practice (CPL). Training activity of work in groups that is developed in the Laboratory. It includes the sessions where students actively and autonomously develop, supervised by the teacher, laboratory experiments. The size of the group is variable, in a range of 10-20 students.

M7 Tutorials (T). Set of activities carried out by the teacher with personalised attention to the student or in small groups with the aim of reviewing and discussing the materials and topics presented in the classes, seminars, readings, completion of assignments, etc. The aim is to ensure that education is truly a comprehensive training of the student and is not reduced to a transfer of information. It is, therefore, a personalized relationship of help in which the teacher-tutor attends, facilitates and guides one or more students in the formative process.

M8 Evaluation (Ev). It is the set of processes that try to evaluate the learning results obtained by the students and expressed in terms of acquired knowledge, capacities, developed skills or abilities and manifested attitudes. It covers a wide range of activities that can be developed for students to demonstrate their training (e.g. written, oral and practical tests, projects or assignments,). It also includes Official Calls.

M10 Estudio del alumno: Preparación individual de lecturas, ensayos, resolución de problemas, seminarios

IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
Theoretical lessons M1	R1, R2, R3, R4, R5, R6, R7	25,00	1,00
Practice lessons M4	R1, R2, R3, R4, R5, R6, R7	26,00	1,04
Office Hours M7	R1, R2, R3, R4, R5, R6, R7	4,00	0,16
Evaluation M8	R1, R2, R3, R4, R5, R6, R7	5,00	0,20
TOTAL		**60,00**	**2,40**

LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
Autonomous work M10	R1, R2, R3, R4, R5, R6, R7	65,00	2,60
Group work M10	R1, R2, R3, R4, R5, R6, R7	25,00	1,00
TOTAL		**90,00**	**3,60**

Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
BASICS IN SPORTS PODIATRY	Sport Podiatry History
SPORT SCIENCE	Sport Podiatry Examination. Practical lecture
Sports Podiatry Pathology	Hip pathology Knee pathology Ankle pathology Foot pathology
SPORTS PODIATRY BIOMECHANICS	Running Gait Analysis
FOOTWEAR IN SPORT	Footwear and materials in Sports Podiatry
FOOTWEAR IN SPORT	Footwear and materials in Sports Podiatry
INJURY TREATMENT	Diagnosis thru image: Ultrasound, MRI, X-ray New biologic treatments: PRP

Temporary organization of learning:

Block of content	Number of sessions	Hours
BASICS IN SPORTS PODIATRY	1,00	2,00
SPORT SCIENCE	6,00	12,00
Sports Podiatry Pathology	8,00	16,00
SPORTS PODIATRY BIOMECHANICS	5,00	10,00
FOOTWEAR IN SPORT	2,00	4,00
FOOTWEAR IN SPORT	3,00	6,00
INJURY TREATMENT	5,00	10,00

References

Bone, Julia L., Meg L. Ross, Kristyen A. Tomcik, Nikki A. Jeacocke, John A. Hawley, and Louise M. Burke. “Ultrasound Technology Fails To Provide Indirect Estimate Of Muscle Glycogen Concentration: 1891 Board #43 June 2, 200 PM - 330 PM.” *Medicine & Science in Sports & Exercise* 48, no. 5S (May 2016): 520. https://doi.org/10.1249/01.mss.0000486564.84945.36.

Greene, Jacob, Julien Louis, Olga Korostynska, and Alex Mason. “State-of-the-Art Methods for Skeletal Muscle Glycogen Analysis in Athletes-The Need for Novel Non-Invasive Techniques.” *Biosensors* 7, no. 1 (February 23, 2017). https://doi.org/10.3390/bios7010011.

Heijden, Rianne A. van der, Nienke E. Lankhorst, Robbart van Linschoten, Sita M. A. Bierma-Zeinstra, and Marienke van Middelkoop. “Exercise for Treating Patellofemoral Pain Syndrome.” *The Cochrane Database of Systematic Reviews* 1 (January 20, 2015): CD010387. https://doi.org/10.1002/14651858.CD010387.pub2.

Hill, John C., and Iñigo San Millán. “Validation of Musculoskeletal Ultrasound to Assess and Quantify Muscle Glycogen Content. A Novel Approach.” *The Physician and Sportsmedicine* 42, no. 3 (September 2014): 45–52. https://doi.org/10.3810/psm.2014.09.2075.

Nieman, David C., R. Andrew Shanely, Kevin A. Zwetsloot, Mary Pat Meaney, and Gerald E. Farris. “Ultrasonic Assessment of Exercise-Induced Change in Skeletal Muscle Glycogen Content.” *BMC Sports Science, Medicine & Rehabilitation* 7 (2015): 9. https://doi.org/10.1186/s13102-015-0003-z.

Smith, Toby O., Benjamin T. Drew, Toby H. Meek, and Allan B. Clark. “Knee Orthoses for Treating Patellofemoral Pain Syndrome.” *The Cochrane Database of Systematic Reviews*, no. 12 (December 8, 2015): CD010513. https://doi.org/10.1002/14651858.CD010513.pub2.

Tan, Jade M., Hylton B. Menz, Kay M. Crossley, Shannon E. Munteanu, Harvi F. Hart, Kane J. Middleton, Anne J. Smith, and Natalie J. Collins. “The Efficacy of Foot Orthoses in Individuals with Patellofemoral Osteoarthritis: A Randomised Feasibility Trial.” *Pilot and Feasibility Studies* 5 (2019): 90. https://doi.org/10.1186/s40814-019-0469-7.