Information about the subject

Degree: Bachelor of Science Degree in Medicine

Faculty: Faculty of Medicine and Health Sciences

Code: 340406 **Name:** Medicine and Surgery of the Musculoskeletal System

Credits: 9,00 **ECTS Year:** 4 **Semester:** 1/2

Module: Human Clinical Training

Subject Matter: Human Pathology **Type:** Compulsory

Field of knowledge: Health Science

Department: Surgical Specialities

Type of learning: Classroom-based learning

Languages in which it is taught: Spanish

Lecturer/-s:

344A	Carlos Barrios Pitarque **(Responsible Lecturer)**	carlos.barrios@ucv.es
	Francisco Jose Tarazona Santabalbina	fj.tarazona@ucv.es
	Ignacio Miranda Gomez	ignacio.miranda@ucv.es
	Jaime Alonso Perez-Barquero	jaime.alonso@ucv.es
	Rodrigo Diaz Fernandez	rodrigo.diaz@ucv.es
344B	Carlos Barrios Pitarque **(Responsible Lecturer)**	carlos.barrios@ucv.es
	Francisco Jose Tarazona Santabalbina	fj.tarazona@ucv.es

344B	Ignacio Miranda Gomez	ignacio.miranda@ucv.es
	Jaime Alonso Perez-Barquero	jaime.alonso@ucv.es
	Rodrigo Diaz Fernandez	rodrigo.diaz@ucv.es

Module organization

Human Clinical Training

Subject Matter	ECTS	Subject	ECTS	Year/semester
Human pathology basis	6,00	General Pathology I	3,00	3/1
		General Pathology II: Analysis by Problems	3,00	3/2
Psychology	6,00	Medical Psychology and Psychopathology	6,00	3/2
Human Pathology	102,00	Clinical Allergology and Immunology	3,00	3/2
		Dermatology	6,00	5/1
		Endocrinology and Nutrition	6,00	5/2
		Haematology	3,00	3/2
		Infectious Diseases	3,00	3/2
		Medical Oncology and Radiotherapy	3,00	5/2
		Medicine and Surgery of the Cardiocirculatory System	9,00	4/2
		Medicine and Surgery of the Digestive System	6,00	4/1
		Medicine and Surgery of the Musculoskeletal System	9,00	4/2
		Medicine and Surgery of the Nephro-Urological System	6,00	5/1

Human Pathology	Medicine and Surgery of the Nervous System	9,00	5/2
	Medicine and Surgery of the Respiratory System	6,00	3/2
	Obstetrics and Gynaecology	9,00	4/2
	Ophthalmology	3,00	3/2
	Otorhinolaryngology	3,00	4/2
	Paediatrics	9,00	5/2
	Palliative Medicine	3,00	6/1
	Psychiatry	3,00	5/1
	Rheumatology	3,00	4/2

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	To identify and recognise the ethiology, risk factors and modulating factors in the pathological processes of the locomotive system
R2	To know the physiopathological and anatomopathological process of diseases susceptible to surgical treatment
R3	Identify the symptoms and signs of the main surgical and traumatological pathologies
R4	To know the prognosis and natural history of the different orthopaedic diseases and traumatic pathologies
R5	Integrating knowledge to discern a diagnosis and guide a treatment
R6	Describe the different surgical and orthopaedic treatments in the pathological processes
R7	Knowing the clinical exploration protocols for osteo-articular pathology
R8	To reach at a basic level the capacity of diagnostic interpretation of the different complementary explorations used in App. Locomotive Pathology (X-ray, CT, MRI, etc.)
R9	Apply basic joint and limb immobilisation techniques for the treatment of traumatic pathologies that require a non-surgical orthopaedic approach (placement of bandages, splints and casts).
R10	To handle the different surgical indications, as far as they mean for any condition, to know when to choose the surgical therapy as opposed to the medical or conservative one.
R11	Be able to apply basic surgical techniques in osteoarthritis pathology (sutures, joint puncture, drains, infiltrations, etc)

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 have demonstrated to possess and understand knowledge in a study area that starts from the base of the general secondary education, and is usually found at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the forefront of their field of study				x
CB2	Students know how to apply their knowledge to their job or vocation in a professional way and possess the competences that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of ??study				x
CB3	Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics				x
CB4	Students can pass on information, ideas, problems and solutions to both a specialized and non-specialized audience				x
CB5	Students have developed the learning skills needed to undertake further studies with a high degree of autonomy				x

GENERAL		Weighting			
		1	2	3	4
CG11	Understanding and recognizing the effects of growth, development and aging on the individual and their social environment				x
CG12	Understanding the basis of action, indications and efficacy of therapeutic interventions, based on available scientific evidence				x
CG13	Getting and writing a medical history containing all relevant information				x
CG15	Having the ability to make an initial diagnostic judgment and establish a reasoned diagnostic strategy				x

CG17	Establishing all diagnosis, prognosis and treatment, applying principles based on the best possible information and clinical safety				x
CG22	Writing medical histories and other medical records in an understandable way to outsiders				x

SPECIFIC		Weighting			
		1	2	3	4
CE42	Recognizing, diagnosing and guiding the management of the main pathologies of the locomotor system				x
CE56	Knowing how to make a complete anamnesis, patient-centered and oriented to the various pathologies, interpreting its meaning				x

TRANSVERSAL		Weighting			
		1	2	3	4
CT1	Analytical and synthesis capacity			x	
CT2	Planification and organization capacity		x		
CT3	Oral and written communication in mother language			x	
CT14	Critical reasoning			x	
CT15	Ethical commitment		x		

Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
R1, R2, R3, R4, R5, R6, R7, R8, R9, R10	15,00%	Open questions
R1, R2, R3, R4, R5, R6, R7, R8, R9, R10	65,00%	Tests
R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11	10,00%	Practices
R1, R2, R3, R4, R5, R6, R7, R8, R9, R10	10,00%	Simulations, ECOE

Observations

CRITERIA FOR THE GRANT OF HONORS:
According to article 22 of the Regulations Regulating the Evaluation and Qualification of UCV Subjects, the mention of "Honors" may be granted by the professor responsible for the subject to students who have obtained the qualification of "Outstanding". The number of "Honors" mentions that can be awarded may not exceed five percent of the students included in the same official certificate, unless this is less than 20, in which case only one "Matricula de Honor".

MENTION OF DISTINCTION:
In accordance with the regulations governing the assessment and grading of subjects in force at UCV, the distinction of "Matrícula de Honor" (Honours with Distinction) may be awarded to students who have achieved a grade of 9.0 or higher. The number of "Matrículas de Honor" (Honours with Distinction) may not exceed five percent of the students enrolled in the group for the corresponding academic year, unless the number of enrolled students is fewer than 20, in which case a single "Matrícula de Honor" (Honours with Distinction) may be awarded. Exceptionally, these distinctions may be assigned globally across different groups of the same subject. Nevertheless, the total number of distinctions awarded will be the same as if they were assigned by group, but they may be distributed among all students based on a common criterion, regardless of the group to which they belong. The criteria for awarding "Matrícula de Honor" (Honours with Distinction) will be determined according to the guidelines stipulated by the professor responsible for the course, as detailed in the "Observations" section of the evaluation system in the course guide.

Learning activities

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

M1	Masterclass
M2	Problems resolution and practical cases
M3	Virtual simulations
M4	Content presentations by teacher
M5	Knowledges and skills explanation
M7	Oral presentation by student
M8	Group activities supervised by professor
M9	Knowledge acquirance through student interaction and activity
M11	Personalised attention by professor
M12	Tests to understand the level of knowledge acquirance and skills
M13	Written work
M14	Online activity on e-learning
M15	Personal study
M16	Information research
M17	Discussion and solving issues in group

M18 Work in team

M19 Group work for searching, discussion and information research

M21 Supervision of clinical histories

M22 Clinical practices

IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
Theory class M1, M4	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10	67,50	2,70
Seminar and group practices M2, M7, M8	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11	10,00	0,40
Practices in small groups M22	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11	25,00	1,00
Tutoring M11	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11	5,00	0,20
Evaluation M12	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11	5,00	0,20
TOTAL		**112,50**	**4,50**

LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
No attendance M13, M14, M15, M16, M18	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10	112,50	4,50
TOTAL		**112,50**	**4,50**

Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
I. Traumatology	Fractures: Production mechanisms, classification, diagnosis. Bone healing. Principles of fracture treatment. Pathology of bone callus: delayed healing and nonunion. Sympathetic reflex dystrophy. Structure and function of the physis. Children's fractures. Traumatic epiphysiolysis. Fractures and dislocations of the shoulder girdle: Clavicle fractures and dislocations. Scapula fractures. Proximal limb and humeral shaft fractures. Supracondylar fractures in children and adults. Radius head fractures. Olecranon fractures. Simple dislocation and fracture-dislocation of the elbow. Distal radius fractures in adults and children. Carpal fractures and dislocations. Metacarpal and phalanx fractures and dislocations. Cervical and thoracolumbar spine traumas. Spinal cord injury. Pelvic ring fractures. Proximal hip fractures. Femoral shaft fractures. Traumatic injuries of the knee extensor apparatus. Knee fractures: Supracondylar fractures of the femur and proximal end of the tibia. Tibial shaft fractures. Tibial pilon fractures. Traumatic ankle injuries: Ankle sprain. Malleolar fractures. Foot bone fractures.
II. Orthogeriatrics.	Fundamentals of Orthogeriatric Units: Interdisciplinary Management of the Hospitalized Elderly Adult with Hip Fracture. Prevention and Management of Geriatric Syndromes during Hospitalization for Hip Fracture. Continuity of Care: Fracture Liaison Services or Units for Prevention of New Fractures.
III. General Pathology Osteoarticular	Joint injuries: Sprains and dislocations. Bone infections. Osteochondrosis and Bone Necrosis. Bone tumors. Neuromuscular and Tendinous Pathology: Muscular traumas. Inflammatory tendinous pathology. Tendon tears and dislocations. Nerve injuries and entrapments.

IV. Regional Surgical Pathology: Upper Limb	Orthopedic and Surgical Pathology of the Shoulder. Subacromial Syndrome. Frozen Shoulder. Acromioclavicular and Scapulothoracic Pathology. Instabilities and Recurrent Shoulder Dislocation. Inflammatory and Degenerative Elbow Pathology. Epicondylitis and Epitrochleitis, Bursitis, Synovial Chondromatosis. Osteochondritis Dissecans, Panner's Syndrome. Orthopedic Injuries of the Hand and Wrist: Lunatomalacia, Dupuytren's Disease, and Carpal Instabilities.
V. Regional Surgical Pathology: Spinal Column	Pathophysiology of Lumbar Pain. Diagnosis of Low Back Pain. Intervertebral Disc Pathology. Spondylolisthesis. Canal Stenosis and Radiculopathies. Lumbar Pain. Clinical Practice Guideline. Biopsychosocial Model. Cervical Pain: Myofascial pain, Facet Syndrome, Cervical Radiculopathies, and Cervical Myelopathy. Spinal Deformities: Scoliosis and Kyphosis.
VI. Regional Surgical Pathology: Lower Limb	Pathology of the Growing Hip: Dysplasia, Hip Development, Transient Hip Synovitis, Perthes Disease, and Epiphysiolysis of the Femoral Head. Painful Hip in Adults: Hip Osteoarthritis. Femoral Head Necrosis. Femoroacetabular Impingement Syndrome. Transient Hip Osteoporosis, Paresthetic Meralgia, Snapping Hip, Hip Bursitis, and Enthesitis. Axial and Rotational Deformities of the Lower Limbs. Blount's Disease, Congenital Lower Limb Malformations. Congenital Hip Dislocation. Congenital Tibial Pseudarthrosis. Knee Pathology: Patellofemoral Pain, Osteochondritis, Knee Necrosis, and Knee Osteoarthritis. Soft Tissue Pathology of the Knee. Meniscal and Ligamentous Knee Injuries. Traumatic Knee Conditions. Meniscal Tears, Meniscal Cysts. Discoid Meniscus. ACL and PCL Tears. Pathology and Dislocation of Peroneal Tendons and Achilles Tendon. Astragalus Osteochondritis, Ankle Impingement. Ankle Osteoarthritis. Flatfoot. Cavus Foot. Congenital Foot Deformities. Clubfoot, Metatarsus Adductus. Forefoot Orthopedic Pathology. Hallux Valgus, Hallux Varus. Metatarsalgia. Morton's Neuroma. Foot Osteonecrosis.

VII. Seminars and Practical Activities

1.Large Joint Examination
2.Joint Infiltration: Shoulder, Knee, Wrist, Elbow
3.Immobilization and Bandaging Workshop
4.Scenario 1: Polytrauma

Temporary organization of learning:

Block of content	Number of sessions	Hours
I. Traumatology	11,75	23,50
II. Orthogeriatrics.	3,00	6,00
III. General Pathology Osteoarticular	10,00	20,00
IV. Regional Surgical Pathology: Upper Limb	3,00	6,00
V. Regional Surgical Pathology: Spinal Column	4,00	8,00
VI. Regional Surgical Pathology: Lower Limb	8,50	17,00
VII. Seminars and Practical Activities	16,00	32,00

References

Bibliografía Básica
Gil L. Editor. COT Traumatología y Ortopedia. Editorial Marbán. Madrid 2020. ISBN 978-84-17184-99-5

Ortega A, Barrios C, Lloris JM. Traumatología y Ortopedia. Tools for medical training. Universidad Católica de Valencia y CEISAL. 2021 ISBN 978-84-09-27413-0

Addendum to the Course Guide of the Subject

Due to the exceptional situation caused by the health crisis of the COVID-19 and taking into account the security measures related to the development of the educational activity in the Higher Education Institution teaching area, the following changes have been made in the guide of the subject to ensure that Students achieve their learning outcomes of the Subject.

Situation 1: Teaching without limited capacity (when the number of enrolled students is lower than the allowed capacity in classroom, according to the security measures taken).

In this case, no changes are made in the guide of the subject.

Situation 2: Teaching with limited capacity (when the number of enrolled students is higher than the allowed capacity in classroom, according to the security measures taken).

In this case, the following changes are made:

1. Educational Activities of Onsite Work:

All the foreseen activities to be developed in the classroom as indicated in this field of the guide of the subject will be made through a simultaneous teaching method combining onsite teaching in the classroom and synchronous online teaching. Students will be able to attend classes onsite or to attend them online through the telematic tools provided by the university (videoconferences). In any case, students who attend classes onsite and who attend them by videoconference will rotate periodically.

In the particular case of this subject, these videoconferences will be made through:

[X] Microsoft Teams

[ ] Kaltura

Situation 3: Confinement due to a new State of Alarm.

In this case, the following changes are made:

1. Educational Activities of Onsite Work:

All the foreseen activities to be developed in the classroom as indicated in this field of the guide of the subject, as well as the group and personalized tutoring, will be done with the telematic tools provided by the University, through:

- [X] Microsoft Teams
- [ ] Kaltura

Explanation about the practical sessions:

2. System for Assessing the Acquisition of the competences and Assessment System

ONSITE WORK

Regarding the Assessment Tools:

[X] The Assessment Tools will not be modified. If onsite assessment is not possible, it will be done online through the UCVnet Campus.

[ ] The following changes will be made to adapt the subject's assessment to the online teaching.

Course guide		Adaptation	
Assessment tool	Allocated percentage	Description of the suggested changes	Platform to be used

The other Assessment Tools will not be modified with regards to what is indicated in the Course Guide.

Comments to the Assessment System: