VNIVERSITAT DE VALÈNCIA

Course Guide
44641 Specialised aspects of joint, muscular and tendinous pathology and biomechanics

COURSE DATA

Data Subject	
Code	44641
Name	Specialised aspects of joint, muscular and tendinous pathology and biomechanics
Cycle	Master's degree
ECTS Credits	6.0
Academic year	2024 - 2025

Study (s)

Degree	Center	Acad. year	Period
2220 - Master's Degree in Functional Recovery in Physiotherapy	Faculty of Physiotherapy	1	Second term

Subject-matter

Degree	Subject-matter	Character
2220 - Master's Degree in Functional Recovery in Physiotherapy	10 - Specialised aspects of joint, muscular and tendinous pathology and biomechanics	Optional

Coordination

Name	Department
BALASCH I BERNAT, MERCÈ	191 - Physiotherapy

SUMMARY

The course includes different aspects of the field of trauma pathology and physiotherapy treatment approach depending on the surgical approach, taking into account the necessary stages to achieve adequate functional recovery.

On the other hand, the fundamentals of biomechanics and locomotor dysfunction incidence that has in the different body structures are included.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

There are no specified enrollment restrictions with other subjects of the curriculum.

2220 - Master's Degree in Functional Recovery in Physiotherapy

- Students should demonstrate self-directed learning skills for continued academic growth.
- Students should possess and understand foundational knowledge that enables original thinking and research in the field.
- Ser capaces de obtener y de seleccionar la información específica y las fuentes relevantes para la resolución de problemas, elaboración de estrategias y planes de actuación, asesoramiento y ejecución de las diferentes actuaciones fisioterápicas en los
  ?ámbitos de la recuperación funcional.
- Saber aplicar los conocimientos adquiridos y ser capaces de resolver problemas en entornos nuevos, o poco conocidos dentro de contextos más amplios (o multidisciplinares) relacionados con las técnicas fisioterápicas en los distintos niveles de asistencia sanitaria en el tratamiento físico de las patologías y lesiones concretas cuyo nivel de especialización requerido es mayor.
- Profundizar en la fisiopatología de las lesiones y enfermedades más frecuentes.
- Profundizar en los distintos métodos y sistemas de valoración clínica en recuperación Funcional.
- Ser capaces de aplicar correctamente las diferentes metodologías disponibles basadas en la evidencia en el tratamiento de las patologías y lesiones que nos ocupa.
- Ser capaces de realizar un adecuado razonamiento clínico en base a la evidencia clínico-científica revisada, analizada y reflexionada con el adecuado nivel de especialización.
- Establecer específicamente los factores de riesgo, etiología y características de las patologías y lesiones más frecuentes según su entorno clínico.
- Aplicar la anatomía y biomecánica desde una perspectiva clínica.

At the end of the matter, the students will recognize the most prevalent diseases of musculoskeletal system likely to receive physiotherapy treatment, as well as biomechanics of the different joint complexes of the musculoskeletal system and its structural dysfunctions related to movement, as a preliminary step to the physiotherapy approach.

DESCRIPTION OF CONTENTS

1. PATHOLOGY IN CONDITIONS MUSCULOESQUELÉTICAS

1. Biomechanics of the musculoskeletal and structural dysfunctions related to movement.

2. Pathology of the head, neck, trunk, pelvis and limbs related to dysfunctions of the musculoskeletal system.

3. Traumatic pathology of the rachis, trunk, pelvis and limbs and physiotherapy approach.

4. Fractures. Generalities. Focus of physiotherapy techniques in fracturing processes: pre-consolidation and post-consolidation phases.

WORKLOAD

ACTIVITY	Hours	% To be attended
Laboratory practices	24,00	100
Theory classes	12,00	100
Study and independent work	40,00	0
Readings supplementary material	40,00	0
Preparing lectures	14,00	0
Preparation of practical classes and problem	20,00	0
TOTAL	**150,00**	

TEACHING METHODOLOGY

Theoretical-practical face-to-face lessons in which the contents of the subjects will be worked on, discussed and carried out using different teaching resources.

The individual and collective tutorials should be used as a way to coordinate the students in the individual and tasks in groups.

Study, tasks performance and individual works and other cooperative works, oriented to the preparation of the theoretical-practical lessons, the individual works and works in teams and the oral and written tests that can be performed for the evaluation of the acquisition of the individual knowledge.

EVALUATION

Evaluation system	Percentage of qualifying
Individual work consisting of a literature search work on a subject taught in class, a work about clinical case, activities about case resolution, or a critical work. This will consist of a written part and an oral presentation (80% y 20%, respectively).	**20%**
Attendance and participation in class, involving the student in the classes. student interaction on questions posed by the teacher, participation in relevant discussions about the information given in class, and participation in activities that promote classroom dynamics taken into account.	**50%**
Theoretical and practical final test that integrates the knowledge acquired during the course, both with respect to conceptual or procedural content. The examination may be written or oral.	**30%**

The final mark of the subject will be the weighted sum of the marks obtained in each evaluation test, as long as the student has obtained at least 50% of the maximum mark in each of the tests: individual work, attendance and participation in class and final test (exam). Likewise, with respect to individual work, it will be necessary for the student to pass both parts (written and oral) in order to average with the rest of the tests.

REFERENCES

Basic

- 1. Silberman, F. S., & Varaona, O. (2011). Ortopedia y Traumatologia/Orthopedics and Traumatology. Ed. Médica Panamericana.
2. Voegeli, A. V. (Ed.). (2001). Lecciones básicas de biomecánica del aparato locomotor. Springer Science & Business Media.
3. Reichel, H., & Ploke, C. E. (2007). Fisioterapia del aparato locomotor. Estructuras, funciones y medidas de actuación sobre las afecciones. Exploración y tratamiento de enfermedades ortopédicas. Barcelona: Paidotribo.
4. Bianchi, Martinolli. (2017) Ecografía Musculoesquelética. Ed Marbán
5. Master en Cirugía Ortopédica. Fracturas. (2009). Donald A Wiss. Ed Marbaán.
6. Martin I. Boyer. AAOS Comprehensive Orthopaedic Review 2 Edición español (2014) Rosemont (Illinois, USA) Editorial AAOS.
7. Vías de abordaje en cirugía ortopédica. (2009). Hoppenfield 4ª Edición Ed. Lippincott Williams y Wilkins.

Additional

- 1. Médico-Quirúrgica E. (1995). Tratado de Kinesioterapia-Medicina Física. Praxis Médica SA.
2. Marrero RCM, Cunillera MP. (1998). Biomecánica clínica del aparato locomotor. Masson.
3. Fucci SB, Mario F, Vittorio GB. (1998). Biomecánica del aparato locomotor aplicada al acondicionamiento muscular.
4. Blanco IS. (2006). Manual SERMEF de rehabilitación y medicina física. Ed. Médica Panamericana.
5. Einhorn TA et al. (eds.). Orthopaedic Basic Science (3rd Ed) (2007). Editorial American Academy of Orthopaedic Surgeons, Rosemont IL, USA.
6. Miller MD. Review of Orthopaedics (6o Ed) (2012) Philadelphia PA. Editorial Elsevier.
7. Langevin HM, Churchill DL, Cipolla MJ. Mechanic signaling though connective tissue: A mechanism for the therapeutic effect of fibrolisis. Faseb J. 2005;15:2275-82.
8. Fisioterapia Invasiva. 1st ed. Barcelona, Spain: Elsevier. 2013;203-30. Am J Sports Med. 2015;39:1906-11.
9. Hurley M, Dickson K, Hallett R, Grant R, Hauari H, Walsh N, Stansfield C, Oliver S. Exercise interventions and patient beliefs for people with hip, knee or hip and knee osteoarthritis: a mixed methods review. Cochrane Database Syst Rev. 2018 Apr 17;4:CD010842.