Advanced Technical Orthpaedics

Code: 102991
ECTS Credits: 6

2024/2025

Degree	Type	Year
2500892 Physiotherapy	OT	4

Contact

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Teachers

Ramon Rubio Galan

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Teaching groups languages

You can view this information at the end of this document.

Prerequisites

Basic knowledge of anatomy and biomechanics of the human body.
Comply with regulations regarding the confidentiality of the clinical information of the patients treated in the clinical practices

Objectives and Contextualisation

As physiotherapists we must acquire knowledge about the approach to the amputee patient in all its phases. It is necessary to know the characteristics of the amputee patient, the different phases of physiotherapy treatment (pre-surgical, pre-prosthetic and prosthetic) and the different prosthetic solutions depending on the level of amputation (type and own characteristics). Especially with regard to the use of prostheses and gait re-education. On the other hand, it is necessary to know the different most common musculoskeletal orthoses that we can find in clinical practice and what indication they will have.

Competences

- Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values.
- Analyse and synthesise.
- Clearly and effectively communicate orally and in writing with all users of the healthcare system, and with other professionals.

- Easily recognise and cope with changes.
- Evaluate the evolution of the results obtained from the treatment in relation to the objectives.
- Make changes to methods and processes in the area of knowledge in order to provide innovative responses to society's needs and demands.
- Organise and plan.
- Show sensitivity to environmental issues.
- Take account of social, economic and environmental impacts when operating within one's own area of knowledge.
- Take sex- or gender-based inequalities into consideration when operating within one's own area of knowledge.
- Work effectively and cooperatively in multidisciplinary professional teams.

Learning Outcomes

1. Analyse a situation and identify its points for improvement.
2. Analyse and synthesise.
3. Assess results and their relation to the objectives set, through real cases within the different clinical specialisations.
4. Communicate using language that is not sexist.
5. Consider how gender stereotypes and roles impinge on the exercise of the profession.
6. Critically analyse the principles, values and procedures that govern the exercise of the profession.
7. Describe patients' functional needs to orthopaedic technicians, patients and the rest of the therapy team, taking into account the chances of making progress with orthoprosthetic technical aids.
8. Display knowledge of the processes for making and adapting upper and lower limb prostheses and trunk and limb orthoses.
9. Display teamwork skills, ability to work in coordination with the rest of the team, specifically with the prosthetist, the rehabilitation physician and, where appropriate with the occupational therapist.
10. Easily recognise and cope with changes.
11. Identify situations in which a change or improvement is needed.
12. Identify the principal forms of sex- or gender-based inequality present in society.
13. Identify the social, economic and environmental implications of academic and professional activities within one?s own area of knowledge.
14. Organise and plan.
15. Propose new methods or well-founded alternative solutions.
16. Propose new ways to measure success or failure when implementing innovative proposals or ideas.
17. Propose projects and actions that incorporate the gender perspective.
18. Propose viable projects and actions to boost social, economic and environmental benefits.
19. Propose ways to evaluate projects and actions for improving sustainability.
20. Show sensitivity to environmental issues.
21. Weigh up the impact of any long- or short-term difficulty, harm or discrimination that could be caused to certain persons or groups by the actions or projects.
22. Weigh up the risks and opportunities of suggestions for improvement: one's own and those of others.

Content

Responsible for all topics: Ramon Rubio Galan and Pol Monné Cuevas

Topic 1: Amputee patient. Multidisciplinary team and assessment in physiotherapy.

Topic 2: Epidemiology, causes and levels of upper extremity amputation.

Topic 3: Upper extremity prosthesis.

Topic 4: Rehabilitation phases in upper extremity amputation.

Topic 5: Bases of training with contact electromyography for the use of myoelectric prostheses (pre-prosthetic phase).

Topic 6: Physiotherapy treatment in upper extremity amputation in the different phases (pre-surgical, pre-prosthetic, prosthetic)

Topic 7: Functional assessment of amputee patients.

Topic 8: Concepts and treatment of pain in the amputee patient.

Topic 9: Cardiovascular training, physical activity and sport in the amputee patient

Topic 10: Stump bandage

Topic 11: Clinical cases in the upper and lower extremity amputee patient.

Topic 12: General concepts of orthotics and prosthetics. Materials in clinical orthopedics.

Topic 13: epidemiology and causes of lower extremity amputation.

Topic 14: Psychology in the amputee patient.

Topic 15: Prosthesis for foot, tibial, femoral, disarticulated knee and hip amputations.

Topic 16: Physiotherapy treatment in the lower extremity amputee patient.

Topic 17: Alterations in gait and alignment in the lower extremity amputee patient.

Topic 18: Osseointegration

Topic 19: Most common upper and lower extremity orthoses of the musculoskeletal system.

SEMINARS:

- Gait reeducation in the lower extremity amputee patient.
- Physiotherapy in the lower extremity amputee patient.
- Resolution of clinical cases by students.

LABORATORY PRACTICES:

- Practice of contact electromyography for upper extremity prosthesis.
- Stump bandage

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
LABORATORY PRACTICES (PLAB)	2	0.08	3, 9, 7
Specialized seminars (SEM)	12	0.48	7
THEORY (TE)	36	1.44	7
Type: Autonomous			
HOMEWORKS	15	0.6	2, 1, 8, 11

READING ARTICLES / REPORTS OF INTEREST	10	0.4	6, 1, 3, 11
SELF-STUDY	73.5	2.94	8, 20, 14, 10

The subject is divided into activities of theoretical classes, practical seminars, laboratory practices and autonomous work.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Attendance and active participation in class and in seminars	20%	0.1	0	6, 2, 1, 3, 4, 8, 9, 20, 12, 11, 14, 22, 19, 15, 10, 7, 5, 21
Delivery of written works	20%	0.5	0.02	2, 3, 4, 14, 19, 17
ORAL PRESENTATION/EXPOSITION OF WORKS	20%	0.4	0.02	1, 4, 13, 11, 22, 15, 16, 18, 7
Written assessments: objective tests	40%	0.5	0.02	8

Evaluation system

1. Continuous evaluation of group work and seminars (20% of the weight of the note). The proactive attitude will be valued.

2. Written evaluation through objective tests (40% of the weight of the note). The test will consist of a test of 40 questions with 4 possible answers, only one of which is correct. The answer answered wrongly will be penalized with -25% of the value of the correct answer. It will be scheduled according to the calendar. Minimum mark to do average: 5/10

3. Oral defense of works (20% of the weight of the note). Minimum mark to do average: 5/10.

4. Delivery of reports / written work (20% of the grade). Minimum mark to do average: 5/10.

5. In the case of students who do not reach the minimum mark to average any of the evaluation activities, the evaluation activity in question will be considered as Not Evaluable.

6. Summary test: Multiple choice exam with 40 questions with 4 possible answers, only one of which is correct. The answer answered wrongly will be penalized with -25% of the value of the correct answer.

*Only for those students who have not passed the continuous assessment. Minimum mark to pass: 5. It will be scheduled according to the calendar.

Single evaluation

The student who chooses this route must know that:

- The evaluation evidence is the same and will have the same weight
- All the evidence will be evaluated on the same day (corresponding to the day of the subject exam, marked in the UAB exam calendar).
- The same recovery system will be applied as for the continuous evaluation
- The review of the final qualification follows the same procedure as for the continuous assessment.

Bibliography

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Software

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Language list

Name	Group	Language	Semester	Turn
(SEM) Seminars	301	Catalan/Spanish	second semester	afternoon

(SEM) Seminars	302	Catalan/Spanish	second semester	afternoon
(TE) Theory	301	Catalan/Spanish	second semester	afternoon