

Advanced Technical Orthopaedics

Code: 102991
ECTS Credits: 6

Degree	Type	Year	Semester
2500892 Physiotherapy	OT	4	2

Contact

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Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: Yes
Some groups entirely in Spanish: Yes

Teachers

Ignacio Mariño Estelrich

External teachers

Beatriz Camos

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

Within the professional work of the physiotherapist, the use of prosthesis and ortesis by patients is quite common.

We believe appropriate specific knowledge regarding the indication and evaluation of these therapeutic elements.

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 subjects: Jairo Laguna Muñoz and Ignacio Mariño Estelrich

Unit 1: GENERAL CONCEPTS OF ORTHOTICS AND PROSTHETICS. MATERIALS

Unit 2: PSYCHOLOGY OF THE AMPUTEE

Unit 3: EPIDEMIOLOGY OF AMPUTATION

Unit 4: PROSTHESIS FOR PARTIAL AMPUTATION OF FOOT

Unit 5: PROSTHESIS FOR TIBIAL AMPUTATIONS

Unit 6: PROSTHESIS FOR KNEE DISARTICULATION AND FEMORAL AMPUTATIONS

Unit 7: PROSTHESIS FOR HIP DISARTICULATION AND HEMIPELVECTOMY

Unit 8: PROSTHETIC FEET

Unit 9: ALIGNMENT OF THE LOWER LIMB PROSTHEICS AND EVALUATION OF THE AMPUTEE MARCH

Unit 10: INTRODUCTION TO THE UPPER LIMB PROSTHESIS

Unit 11: PROSTHESIS FOR HAND AND FOREARM AMPUTATIONS

Unit 12: PROSTHESIS FOR ELBOW, ARM AND SHOULDER AMPUTATIONS

Unit 13: MALFORMATIONS AND ORTHOPROSTHETICS. OSTEOINTEGRATION IN AMPUTEES

Unit 14: HIP ORTHOSIS

Unit 15: KNEE ORTHOSIS

Unit 16: PLANTAR ORTHOSIS. ORTHOPEDIC SHOES INSOLES

Unit 17: ORTHOPEDIC SHOES

Unit 18: ORTHOSIS FOR SHOULDER AND ELBOW

Unit 19: ORTHOSIS FOR HAND

Unit 20: ORTHOSIS FOR THORACIC DEFORMITIES. SCOLIOSIS AND KYPHOSIS

Unit 21: CERVICAL ORTHOSIS

Unit 22: DORSO-LUMBAR ORTHOSIS

Unit 23: ORTHOSIS FOR CRANEAL DEFORMITIES

Unit 24: AMBULATION AIDS

Unit 25: WHEELCHAIRS

Unit 26: TECHNICAL AIDS vs SUPPORT PRODUCTS. TECHNICAL AIDS AND SUPPORT PRODUCTS FOR ACTIVITIES OF DAILY LIVING

Unit 27: PATIENT LIFTS AND TRANSFER SYSTEMS

Unit 28: PREVENTION OF BEDSORES

SEMINARS:

- Physical therapy for lower limb amputee.
- Physical therapy for upper limb amputee.
- Evaluation, indication, manufacturing and checkout for upper limb prosthesis.
- Evaluation, indication, manufacturing and checkout for scoliosis orthosis.
- Pain neuroscience. Pain management of the amputee.
- Amputee bandage. Treatment for lymphatic-venous diseases.

LAB PRACTICES:

- Amputee bandage. Treatment for lymphatic-venous diseases.

Methodology

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.

Activities

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

Assessment

1. Continuous evaluation through the control of the attendance to the theoretical classes of group work and seminars (20% of the weight of the note). Proactive attitude will be valued. Minimum attendance to make average: 80%.

2. Written evaluation through objective tests (40% of the weight of the note). It will be scheduled according to the calendar. Minimum mark to average: 4.

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

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

5. In the case of students who do not achieve the minimum attendance or grade to make an average of any of the evaluative activities, the evaluation activity in question will be considered as Not Evaluable. Must pass a minimum of 3 evaluation activities and get a final average grade of 5 or more to pass the course.

6. Recovery Test: Multiple choice test of 30 questions with multiple answers developed in 60 minutes. Only for those students who have not passed the continuous assessment. Minimum mark to pass: 5. It will be scheduled according to the calendar.

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

Bibliography

1. González Viejo MA, Salinas Castro F, Cohí O. Escoliosis: realidad tridimensional. 1a ed. España: Masson; 2001.
2. Shurr D, Michael J. Prosthetics and Orthotics. 2a ed. USA: Prentice Hall; 2001.
3. Zambudio Periago R. Prótesis, órtesis y ayudas técnicas. 1a ed. España: Elsevier España SL; 2009.
4. Prat JM. Guía de uso y prescripción de productos ortoprotésicos a medida. 2a ed. España: Instituto de Biomecánica de Valencia; 2004.
5. Álvarez J, Carreño J, Rodríguez J. Amputaciones en el pie diabético. Dins: Marinel J, Blanes JI, Escudero JR, Ibañez V, Rodríguez J, editors. Tratado de pie diabético. 1a ed. Madrid, España: Jarpyo Editores; 2002. p. 129-138.
6. Malavera MA, Carrillo S, Gomezese OF, García RG, Silva FA. Fisiopatología y tratamiento del dolor de miembro fantasma. Rev colomb anestesiología. 2014; 42(1): 40-46.
7. Zambudio Periago R. Osteointegración en amputados de miembros. Rehabilitación. 2007; 41(4): 180-184.
8. López Jiménez RM, Muriel López C, López Jiménez S, Cabrera Víquez MI. Intervención fisioterapéutica en las úlceras por presión del paciente oncológico. Revista enfermería docente. 2017; 109(1): 52-59.
9. Govantes Bacallao Y, Alba Gelabert CJ, Arias Cantalapiedra A. Protocolo de actuación en la rehabilitación de pacientes amputados de miembro inferior. Revista cubana de medicina física y rehabilitación. 2016; 8(1): 1-11.
10. Saleme Cruz J, Arizola Cisneros L, Capdevila Leonori R, Haces García F. Desarticulación de tobillo (Syme) y amputación transtibial como tratamiento para las deficiencias del miembro pélvico ¿Qué es mejor?. Revista mexicana de ortopedia pediátrica. 2013; 15(2); 79-84.

Software

[Amputee Gait Deviations - YouTube](#)

UAB virtual campus- <https://cv.uab.cat/portada/ca/index.html>

Microsoft Teams