| Teaching Guide | | | | |
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| Identifying Data | | | | 2020/21 |
| Subject (*) | Digital Orthopedics and Footwear Therapy | | Code | 750G02117 |
| Study programme | Grao en Podoloxía | | | |
| Descriptors | | | | |
| Cycle | Period | Year | Type | Credits |
| Graduate | 2nd four-month period | Second | Obligatory | 6 |
| Language | Galician | | | |
| Teaching method | Hybrid | | | |
| Prerequisites | | | | |
| Department | Ciencias da Saúde | | | |
| Coordinador | López López, Daniel | E-mail | daniel.lopez.lopez@udc.es | |
| Lecturers | López López, Daniel<br>López Martínez, Noemia Zeltia | E-mail | daniel.lopez.lopez@udc.es<br>zeltia.lopezm@udc.es | |
| Web | moodle.udc.es/ | | | |
| General description | A asignatura de ortesioloxía dixital e calzadoterapia posee unha clara importancia de cara a que o alumnado desenrole coñecementos, habilidades e destrezas importantes no proceso ensinanza ? aprendizaxe do seu proceso formador para mellorar a saúde das persoas.<br><br>O valor é moi significativo para o futuro podólogo, de cara a comprender, actuar e profundizar no campo terapéutico da ortoprótesis, no uso e a indicación de productos sanitarios podolóxicos, proporcionándolle unha formación básica de coñecementos teóricos e destrezas prácticas, co fin de que adquira as competencias básicas relacionadas ca prescripción, deseño e obtención das principais orteses dixitales e próteses do pe e coñeza a súa relación co resto do membro inferior.<br><br>Mediante a prescripción de dispositivos orto-protésicos a medida ou prefabricados, numerosos estudios demostraron a eficacia destes dispositivos tanto na reducción da sintomatoloxía, como na recuperación da funcionalidade de diversas situacións patolóxicas debidas a alteracións estructurais ou funcionais do pe ou dalgunha outra estructura do membro inferior. | | | |
| Contingency plan | 1. Modifications to the contents<br><br>2. Methodologies<br>*Teaching methodologies that are maintained<br><br>*Teaching methodologies that are modified<br><br>3. Mechanisms for personalized attention to students<br><br>4. Modifications in the evaluation<br><br>*Evaluation observations:<br><br>5. Modifications to the bibliography or webgraphy | | | |

| Study programme competences / results | |
|---|---|
| Code | Study programme competences / results |
| A103 | CE39 - Coñecer e desenvolver as técnicas de exploración, para emitir un diagnóstico e prognóstico, e deseñar o plan de tratamento ortopodolóxico de acordo aos obxectivos terapéuticos |

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| A104 | CE40 - Desenvolver a habilidade e destreza no uso do instrumental, material e maquinaria empregados para a confección e aplicación de tratamentos ortopodolóxicos identificando os riscos derivados da actividade e implementando as medidas de seguridade necesarias |
| A106 | CE42 -Obter os coñecementos e capacidade para deseñar, obter e aplicar as orteses plantares, ortesis dixitais, próteses e férulas mediante o uso de diferentes técnicas e materiais |
| A108 | CE44 - Coñecer e diferenciar as propiedades dos materiais utilizados na confección ortoprotésica |
| A110 | CE46 - Adquirir a capacidade de prescribir tratamentos ortopédicos da extremidade inferior |
| A111 | CE47 - Coñecer e aplicar os principios da calzadoterapia, diferenciar as partes, os elementos e os diferentes tipos de calzado |
| B25 | CB3 -- Que os estudantes teñan a capacidade de reunir e interpretar datos relevantes (normalmente dentro da súa área de estudo) para emitir xuízos que inclúan unha reflexión sobre temas relevantes de índole social, científica ou ética |
| B26 | CB4 -Que os estudantes poidan transmitir información, ideas, problemas e solucións a un público tanto especializado como non especializado |
| B27 | CB5 -Que os estudantes desenvolvesen aquelas habilidades de aprendizaxe necesarias para emprender estudos posteriores cun alto grao de autonomía |
| B28 | CG01 - Coñecer e aplicar os fundamentos teóricos e metodolóxicos da Podoloxía e Podiatría |
| B29 | CG02 - Coñecer a estrutura e función do corpo humano en especial da extremidade inferior, semioloxía, mecanismos, causas e manifestacións xerais da enfermidade e métodos de diagnóstico dos procesos patolóxicos médicos e cirúrxicos, interrelacionando a patoloxía xeral coa patoloxía do pé. |
| B30 | CG03 - Obter a capacidade, habilidade e destreza necesarias para diagnosticar, prescribir, indicar, realizar e/ou elaborar e avaliar calquera tipo de tratamento podolóxico, ortopodolóxico, quiropodolóxico, cirurxía podolóxica, físico, farmacolóxico, preventivo e/ ou educativo, baseado na Historia clínica |
| B36 | CG09 -Valorar de forma crítica a terminoloxía, ensaios clínicos e metodoloxía utilizados na investigación relacionada coa podoloxía |
| B39 | CG12 -Capacidade para a cooperación, o traballo en equipo e a aprendizaxe colaborativo en contornas interdisciplinares |
| C9 | CT01 - - Expresarse correctamente, tanto de forma oral como escrita, nas linguas oficiais da comunidade autónoma |
| C11 | CT03 - Utilizar as ferramentas básicas das tecnoloxías da información e as comunicacións (TIC) necesarias para o exercicio da súa profesión e para a aprendizaxe ao longo da súa vida |
| C12 | CT04 -Desenvolver o exercicio dunha cidadanía respectuosa coa cultura democrática, os dereitos humanos e a perspectiva de xénero |
| C16 | CT08 - V- Valorar a importancia que ten a investigación, a innovación e o desenvolvemento tecnolóxico no avance socioeconómico e cultural da sociedade |
| C17 | CT09 -Ter a capacidade de xestionar tempos e recursos: desenvolver plans, priorizar actividades, identificar as críticas, establecer prazos e cumprilos |

| Learning outcomes | | | |
|---|---|---|---|
| Learning outcomes | Study programme competences / results | | |
| Design, procure and implement using different techniques and the orthotics digital. | A103 | B28<br>B29 | C16 |
| Prescribe and implement plantar and digital orthoses on podiatric conditions Morphological and functional. | A106<br>A108 | B30 | C17 |
| Designing, obtaining and applying different techniques and materials by the orthotics and digital orthoses, prostheses, splints. Plantar and digital orthotics . Study of footwear and therapy shoes. Orthotic treatment prescription lower extremity. | A110<br>A111 | B26<br>B27 | C11 |
| Meet and develop scanning techniques, to make a diagnosis and prognosis, and plan deseñar orthosis treatment of lower extremity pathology. Skeletal muscle injury and ligament. Pathology of the forefoot and hindfoot. Congenital deformities. Neurological injuries. Amputations. Asymmetries. | A104 | B25<br>B36<br>B39 | C9<br>C12 |

| Contents | |
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| Topic | Sub-topic |
| 1. Fundament Digital Orthotics | a) Introduction to digital orthotics.<br>b) Current frame digital orthotics. |

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| 2. Materials needed for a development of orthoses. | a) Silicone.<br>b) Catalyst.<br>c) Additives or fillers.<br>d) Auxiliary materials and accessories. |
| 3. Making silicone orthoses. | a) Preparation: considerations.<br>b) Protocol.<br>c) Recommendations and rules of use for the patient.<br>d) Handling and working times.<br>e) Evaluation of Silicone orthotics.<br>f) Failures in Silicone orthotics. |
| 4. Therapeutic elements Silicone orthotics. | a) Description of elements comprising silicone orthoses.<br>b) Frequent digital orthotics. |
| 5. Therapeutic Application of Digital Orthotics | a) Biomechanical effect.<br>b) Therapeutic Application. |
| 6. Nail Orthotics. | a) Introduction to the nail orthotics.<br>b) Development of the nail orthotics.<br>c) Therapeutic Application. |
| 7 Introduction to therapy shoes. | a) Parts shoe: sole and cut.<br>b) Lasts footwear. |
| 8. Therapeutic devices in the Shoes. | a) External modifications: heels, wedges, increases.<br>b) Set the shoe. Gradation chart and numbering systems. |
| 9. Properties footwear according to different population groups. | a) Conventional footwear for adults.<br>b) Children conventional shoes.<br>c) domestic footwear.<br>d) Work Shoes.<br>e) Special Shoes for orthotics.<br>f) Child Special footwear.<br>g) Special shoes for deformed feet or geriatric / peripheral vascular disease.<br>h) Postoperative shoes. |
| 10. Types of shoes. | a) Bootie or shoe salon.<br>b) Moccasin.<br>c) Derby or Oxford dress shoe.<br>d) Boots. Booties.<br>e) Slippers, slippers and sandals. |
| 11. Accessories and footwear. | a) With and without compression socks.<br>b) Stockings, Pantyhose and graduations.<br>c) Ankles with and without stabilization.<br>d) Pinkis. |

| Planning | | | | |
|---|---|---|---|---|
| Methodologies / tests | Competencies / Results | Teaching hours (in-person & virtual) | Student?s personal work hours | Total hours |
| Mixed objective/subjective test | A106 A110 B28 | 2 | 28 | 30 |
| Guest lecture / keynote speech | A103 A108 A111 B29 | 21 | 32 | 53 |
| Seminar | B25 B26 B30 B39 C9 C11 C16 C17 | 7 | 14 | 21 |
| Laboratory practice | A104 B27 B36 C12 | 18 | 18 | 36 |
| Personalized attention | | 10 | 0 | 10 |
| (*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students. | | | | |

| Methodologies | |
|---|---|
| **Methodologies** | **Description** |
| Mixed objective/subjective test | Exam with 30 questions and 3 short objective test questions. The review will include questions related to the contents developed in both keynote sessions, and seminars and labs. |
| Guest lecture / keynote speech | The master class sessions consist of master-participatory exhibition of basic contents of the subject, supported by images, video, etc classes. The keynote sessions will focus on the main contents of the syllabus. |
| Seminar | Students will be provided the agenda with the basic theoretical contents of the subject, as well as material to work in the classroom or outside it. All material will be accessible to students in distance learning platform Moodle https://campusvirtual.udc.es/moodle/. |
| Laboratory practice | Lab The labs are specifically targeted:<br><br>1 - Knowing scan protocol and digital deformities performance.<br>2 - Accurately diagnose the condition of the forefoot.<br>3 - Apply ortesiológico timely treatment, as appropriate.<br>4 - Mastering methodology making silicone orthoses.<br>5 - Evaluate and adapt the general footwear citizenship.<br>6 - Prescribe special shoes and customized for different population groups. |

| Personalized attention | |
|---|---|
| **Methodologies** | **Description** |
| Seminar<br>Laboratory practice<br>Mixed objective/subjective test<br>Guest lecture / keynote speech | The personalized service will run on a scheduled basis in times of teacher attention to students, to face service; and virtually, through email and other electronic means to enable the virtual platform.<br><br>The personalized service is designed to solve any issue related to the different methodologies and / or contents of the subject |

| Assessment | | | |
|---|---|---|---|
| **Methodologies** | **Competencies / Results** | **Description** | **Qualification** |
| Seminar | B25 B26 B30 B39 C9 C11 C16 C17 | The seminar related activities are mandatory and can not be recovered or replaced by other activities of the course. The rating of each activity of the seminar will be specified with each activity. | 15 |
| Laboratory practice | A104 B27 B36 C12 | Attendance at labs is mandatory in its entirety to pass the subject. The last 2 hours of practice will be used for a practical test with theoretical and practical questions about the contents of the material developed in practice.<br><br>For the fit in the labs, you must answer / successfully complete 50% of the activities and / or exam questions, in addition to attending all practices. | 20 |
| Mixed objective/subjective test | A106 A110 B28 | On the written test score information in the questions provided. | 65 |

| Assessment comments |
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The presentation of the topic Digital Orthotics and Therapy Shoe succinctly explain the curriculum and course standards for the evaluation of the same, which will be available to students in the distance learning platform Moodle, be indispensable condition for approving subject to: 1 REGULAR FIRST CALL OPPORTUNITY;

1.1 asist to 80% of the seminars and complete the proposed activities and get a total score on a numerical scale from 1 to 10 of 5 (suitable), which has only in the case of pass the test completely mixed.

1.2 asist to 80% of the laboratories, and to carry out the proposed activities and get a total score on a numeric scale of 1 to 10 of 5 (suitable), which has only in the case of passing the tests completely mixed.

1.3 The written exam mixed (Test and short Questions) and separately (a score on a numeric scale of 1 to 10) of 5 (suitable) in each of the two parts of which comprises the mixed test test test and short questions .

2 REGULAR SECOND CALL, AND FUTURE MEETINGS EARLY OPPORTUNITY:

2.1 Get in the mixed test (Test and short Questions) and separately (a score on a numerical scale from 1 to 10), from 5 Suitable in each of two parts.

2.2 The scores of seminars and laboratories do not count as necessary to overcome the efforts to pass the course in successive calls.

3. PARTIAL TUITION CLASS:

3.1 Get in the mixed event (and brief essay questions) and separately (a score on a numerical scale from 1 to 10), from 5 Suitable for every two parts that make up the test set, the percentage of rating gives 60% of the final mark.

3.2 Perform laboratory practice test and get a total score on a numeric scale of 1 to 10, 5 (suitable), the percentage of the grade 40% of the final mark, calculated only in the case of fully overcome the mixed test.

**Sources of information**

| | |
|---|---|
| Basic | - Álvarez-Calderón O, Alonso F, López D, Gómez B, Sánchez R (2008). Análisis del calzado en una población mayor de 60 años. . Revista Internacional de Ciencias Podológicas, 2 (1), 19-26.<br>- López D (2011). Podología y Salud: Un análisis de las representaciones sociales de las enfermedades del pie desde una perspectiva psicosocial.. A Coruña: Universidade da Coruña.<br>- Gordillo-Fernández A (2006). Fabricación a medida de productos sanitarios ortopodológicos en la Comunidad Valenciana.. Valencia: Generalitat Valenciana, Consellería de Sanitat-Agencia Valenciana de Salut<br>- Queralt Mª (2004). Manual de Técnicas en Ortopodología.. Barcelona: Ediciones Especializadas Europeas<br>- Levy AE, Cortés JM (2003). Ortopodología y Aparato Locomotor. Ortpedia de pie y tobillo.. Barcelona: Masson<br>- Vázquez B (2009). Manual de Ortopodología.. Barcelona: Ediciones Especializadas Europeas<br>- Philps JW. (1995). The functional foot orthosis.. New York: Churchill Livingstone<br>- López-López D, Araújo R, Losa-Iglesias ME, Becerro-de-Bengoa-Vallejo R, Santos A, Rodríguez-Sanz D, (2018). Influence of custom foot orthoses on venous status: A quasi-experimental study. J Mech Behav Biomed Mater. 2018 Mar;79:235-238<br>- Prat J (1999). Introducción a la Ortoprotésica. Guía de uso y prescripción de productos ortoprotésicos a medida.. Valencia: Instituto Biomecánico de Valencia<br>- Prat J (1999). Ortesis plantares y calzado ortopédico a medida. Guía de uso y prescripción de productos ortoprotésicos a medida.. Valencia: Instituto Biomecánico de Valencia<br>- Pratt D, Tollafield D (2007). Una introducción a las terapéuticas mecánicas. En: Turner WA, Merriman LM. Habilidades clínicas para el tratamiento del pie. . Madrid: Elsevier<br>- Richie D (2007). Orthotics. In: Di Giovanni C, Greisberg J. Coordinadores. Foot & Ankle: Core Knowledge in Orthopaedics. . Philadelphia: Elsevier; 2007.<br>- Donattelli R, Wooden M (1996). Biomechanical orthotics. In: Donatelli R. Coordinador. Biomechanics of the foot and ankle. 2ª ed. . Philadelphia: F.A. Davis Company<br>- Palomo-López P, Becerro-de-Bengoa-Vallejo R, Losa-Iglesias ME, Rodríguez-Sanz D, Calvo-Lobo C, López (2017). Footwear used by older people and a history of hyperkeratotic lesions on the foot: A prospective observational study. Medicine (Baltimore). 2017 Apr;96(15):e6623<br>- Roca-Dols A, Losa-Iglesias ME, Sánchez-Gómez R, Becerro-de-Bengoa-Vallejo R, López-López D, Rodrígue (2018). Effect of the cushioning running shoes in ground contact time of phases of gait.. J Mech Behav Biomed Mater. 2018 Dec;88:196-200<br>- Roca-Dols A, Losa-Iglesias ME, Sánchez-Gómez R, Becerro-de-Bengoa-Vallejo R, López-López D, Palomo-L (2018). Electromyography activity of triceps surae and tibialis anterior muscles related to various sports shoes. J Mech Behav Biomed Mater. 2018 Oct;86:158-171<br>- Losito J (1996). Impression casting techniques. In: Valmassy R. Coordinador. Clinical biomechanics of the lower extremities. . Missouri: Mosby<br>- Jones L (1996). Prescription writing for functional and acommodative foot orthoses. In: Valmassy R. Coordinador. Clinical biomechanics of the lower extremities. . Missouri: Mosby<br>- Olson W (1996). Orthotic materials. In: Valmassy R. Coordinador. Clinical biomechanics of the lower extremities.. Missouri: Mosby<br>- Kirby K (1996). Troubleshooting functional foor orthoses. In: Valmassy R. Coordinador. Clinical biomechanics of the lower extremities. . Missouri: Mosby<br>- Whitney A, Whitney K. (2006). Padding and Tapping Therapy. In: Levy L, Hetherington V. Editors. Principles and pratice of Podiatric Medicine.. Maryland: Data Trace PC<br>- Janeiro JM, Alonso F, Bouzas MC, Calleja J, López L (2002). Orígenes de las Siliconas. El Peu Vol. 22 (1) 32-35<br>- Tovaruela-Carrión N, Becerro-de-Bengoa-Vallejo R, Losa-Iglesias ME, Palomo-López P, Munuera-Martínez (2018). Accurately Determining Proper Shoe Size in Patients With Rheumatoid Arthritis. Rehabil Nurs. 2018 Sep/Oct;43(5):285-289<br>- Roca-Dols A, Losa-Iglesias ME, Sánchez-Gómez R, López-López D, Becerro-de-Bengoa-Vallejo R, Calvo-Lo (2018). Electromyography comparison of the effects of various footwear in the activity patterns of the peroneus longus and brevis muscles. J Mech Behav Biomed Mater. 2018 Jun;82:126-132<br>- López D, Cosín J, Alvarez-Calderón O, Cosín E, Barriuso M, López L (2006). Aplicación de un tratamiento |

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| Recommendations |
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| **Subjects that it is recommended to have taken before** |
| Anatomy General/750G02103<br>Biomechanics of the Lower Limb/750G02111<br>Podiatric Orthopedics I/750G02115 |
| **Subjects that are recommended to be taken simultaneously** |
| Podiatric Pathology I/750G02119<br>Podiatric Orthopedics II/750G02116 |
| **Subjects that continue the syllabus** |
| Final Dissertation/750G02133<br>Practicum II/750G02135<br>Practicum III/750G02136<br>Practicum I/750G02134<br>Preventive Podiatry/750G02114<br>Clinical Orthopedics/750G02118<br>Sports Podiatry/750G02123<br>Diabetic Foot/750G02131 |
| **Other comments** |
| Para o seguemento das diferentes metodoloxías na aula da materia recoméndase a utilización dun ordenador portátil que dispoña de conexión wifi.Asemade, ca finalidade de conquerir unha contorna<br>inmediata sustentable e cumprir o obxectivo estratéxico; do Plan de Sustentabilidade Medio-ambiental<br>Green Campus FEP, tódolos traballos documentais que se realicen nesta materia<br>serán entregados a través de Moodle, en formato dixital, sen necesidade de<br>imprimilos.De realizarse en papel teranse en conta as seguintes cuestións que aparecen a continuación:- Non se empregarán plásticos.- Realizaránse<br>impresións a dobre cara.- Empregarase papel reciclado.- Evitaranse imprimir<br>borradores. |

**(*)The teaching guide is the document in which the URV publishes the information about all its courses. It is a public document and cannot be modified. Only in exceptional cases can it be revised by the competent agent or duly revised so that it is in line with current legislation.**