



Teaching Guide

Teaching Guide				
Identifying Data				2022/23
Subject (*)	Computer Methods for Persons with Disabilities		Code	653G01209
Study programme	Grao en Terapia Ocupacional			
Descriptors				
Cycle	Period	Year	Type	Credits
Graduate	1st four-month period	Second	Obligatory	4.5
Language	SpanishGalician			
Teaching method	Face-to-face			
Prerequisites				
Department	Fisioterapia, Medicina e Ciencias Biomédicas			
Coordinador	Pereira Loureiro, Javier	E-mail	javier.pereira@udc.es	
Lecturers	Concheiro Moscoso, Patricia	E-mail	patricia.concheiro@udc.es	
	Pereira Loureiro, Javier		javier.pereira@udc.es	
Web	campusvirtual.udc.es/			
General description	The aims to develop skills in the application of information technology and communications on two areas: (1) know how to manage and apply multimedia resources: audio, image and digital video for dynamic communication and the creation of resources for intervention from occupational therapy and (2) understand, manage and know how to apply ICT as an intervention tool in occupational therapy and as support technologies for access to them			

Study programme competences

Code	Study programme competences
A11	Trabajar para facilitar entornos accesibles y adaptados y promover la justicia ocupacional.
A13	Buscar activamente, evaluar críticamente y aplicar los rangos de información y de evidencia para asegurar que la práctica es actualizada y relevante al cliente.
A19	Apreciar y respetar las diferencias individuales, creencias culturales, costumbres y su influencia sobre la ocupación y la participación.
A20	Preparar, mantener y revisar la documentación de los procesos de terapia ocupacional.
A25	Identificar la necesidad de investigar y buscar publicaciones relacionadas con la ocupación, la terapia ocupacional y/o la ciencia ocupacional y formular preguntas de investigación relevantes.
A26	Demostrar habilidades en la propia búsqueda, el examen crítico y la integración de la literatura científica y otra información relevante.
A30	Divulgar los hallazgos de investigación para críticas relevantes.
B5	Trabajar de forma colaborativa.
B7	Comunicarse de manera efectiva en un entorno de trabajo.
B21	Habilidades básicas de manejo de ordenadores.
B22	Habilidades de investigación.
C2	Dominar la expresión y la comprensión de forma oral y escrita de un idioma extranjero.
C3	Utilizar las herramientas básicas de las tecnologías de la información y las comunicaciones (TIC) necesarias para el ejercicio de su profesión y para el aprendizaje a lo largo de su vida.
C6	Valorar críticamente el conocimiento, la tecnología y la información disponible para resolver los problemas con los que deben enfrentarse.
C7	Asumir como profesional y ciudadano la importancia del aprendizaje a lo largo de la vida.

Learning outcomes

Learning outcomes	Study programme competences		
Evaluate and define accessibility requirements for computer platforms for people with disabilities.	A11	B21 B22	C3 C6 C7
Use and apply general and specific devices (assistive products) and software for the adaptation of the environment.	A11	B21	C3 C6



Facilitating accessible and adapted environments	A11 A25	B21 B22	C3
Prepare, maintain and review documentation with Occupational Therapy computer tools.	A13 A20 A25 A26 A30	B7 B21 B22	C3
To know how to apply information and communication technologies within the context of Occupational Therapy.	A11	B21	C3
Manage multimedia resources, Internet and the resources of the library of the Universidade da Coruña.	A13 A19 A20 A26 A30	B5 B7 B21 B22	C2 C3

Contents	
Topic	Sub-topic
Block I	Theoretical Contents
Theme 1. ICT support products	1.1 Concept of Information and Communication Technologies (ICT). 1.2 The information society. 1.3 Universal design and digital divide. 1.4 The role of ICT in daily life. 1.5 UNE ISO 9999:2017 Standard. 1.6 Classification of support products. 1.7 Assistive products for communication and information. 1.8 Mice, keyboards, input software, output software, alternative input devices, support products for face-to-face communication.
Theme 2. Accessibility in ICT	2.1 Concept of accessibility. 2.2 Accessibility on the web: Accessibility Guidelines 2.1. 2.3 UNE EN 301549V2.1.2:2019. 2.4 Conformance level of a web page. 2.5 Keys to determine a reliable website. 2.6 Accessibility according to the operating system.
Theme 3. Microsoft 365 tools	3.1 Use of the different 365 tools and the applicability in the day to day.
Theme 4 . New trends in computer access systems.	4.1 Computer access. 4.2 Visual programming with Scratch. 4.3 Chips and boards. 4.4 MakeyMakey. 4.5 Micro:bit. 4.6 Adafruit Playground.
Theme 5. Use of cell phones and tablets	5.1 Accessibility applications of the Android system. 5.2 Accessibility applications of the iOS system. 5.3 Applications to promote healthy living habits and activities of daily living. 5.4 National and international projects associated with ICT from an occupational perspective.



Theme 6. Virtual reality	6.1 Concept and types of virtual reality. 6.2 Resources and materials involved in the use of virtual reality. 6.3 Virtual reality from occupational therapy. 6.4 Commercial applications of virtual reality. 6.5 Augmented reality and possible differences.
Block II.	Basic multimedia contents in Occupational Therapy
Theme 1. The digital image	1.1 The digital image and its characteristics. 1.2 Graphic formats. Storage systems and sizes. 1.3 Types of images. 1.4 Tools for image editing.
Theme 2. Digital audio	2.1 Digital audio: definition, formats and specifications. 2.2 Audacity features. 2.3 Tools for audio editing 2.4 Sound and voice configuration. 2.5 Voice synthesizers.
Theme 3. Digital video	3.1 Definition of digital video. 3.2 Characteristics of digital video. 3.3. Video formats. 3.4 Connections. 3.5 Tools for video editing.
Block III.	Applications for occupational therapy intervention
Theme 4. ARASAAC online tools	4.1 Creation of pictograms, sentences with pictograms, etc.
Theme 5. Programs to promote communication skills: Plaphoons and Grid 3	5.1 Definition of Communicator and its characteristics. 5.2 Definition of Plaphoons and their characteristics. 5.3 Definition of Grid 3 and characteristics. 5.4 Creation of communication board.
Theme 6. Scratch	6.1 Visual programming. Creating an action-reaction project.

Planning				
Methodologies / tests	Competencies	Ordinary class hours	Student's personal work hours	Total hours
ICT practicals	A11 A13 A19 A20 B5 B7 B21 B22 C3 C6	30	30	60
Guest lecture / keynote speech	A11 A25 A26 A30 B22	6	12	18
Supervised projects	B21 B22 C2 C3 C6 C7	2	15	17
Oral presentation	A11 A19 A20 A25 A26 A30 B5 B7 B21 B22 C3	2	4.5	6.5
Objective test	B21 C3 C6 C7	1	0	1
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
ICT practicals	The practices will be carried out in the laboratory and individually. They will be based on a daily explanation and on the material available in the virtual campus of the subject of the UDC. Students will have to deliver the practicals according to the timetable exposed in the course chronogram. Late delivery will mean that these practices will not be taken into account. Only one delivery is allowed, which will be considered definitive and will be the final.



Guest lecture / keynote speech	The theoretical contents of the subject will be presented in 7 lectures throughout the course. The contents of blocks II and III will be presented in group sessions.
Supervised projects	The students will do a final work associated to a practical case in which they intervene using ICT. This work will consist of different steps to be completed by the students. The material and instructions associated with this work will be available through the Virtual Campus. The delivery of the work will also be done through this medium within the deadlines indicated. They will be done in groups of 3 or 4 people, depending on the size of the group of students that includes the subject.
Oral presentation	In groups, students must prepare the presentation of a tutored work based on a practical case in which they intervene using ICT. This work will be exposed in the last weeks of the course.
Objective test	Students must complete a quiz associated with the subject matter of the master class at the end of each session. Failure to complete the questionnaire will be penalized, taking into account the need to obtain 50% in each test.

Personalized attention

Methodologies	Description
ICT practicals	Personalized attention will be provided, globally, through direct and virtual, individual and group personalized tutorials, mainly using Microsoft Teams and e-mail (javierp@udc.es, patricia.concheiro@udc.es). The tutorials will be held in the Radiology Laboratory (where the teaching is given), in the Oza University Building, on the 2nd floor. The professors can be contacted by mail (javierp@udc.es, patricia.concheiro@udc.es).

Assessment

Methodologies	Competencies	Description	Qualification
ICT practicals	A11 A13 A19 A20 B5 B7 B21 B22 C3 C6	Assessment of the practices through Moodle that will be done mainly in class. They must be delivered through Moodle within the defined deadlines. Late delivery will be penalized in the evaluation.	40
Oral presentation	A11 A19 A20 A25 A26 A30 B5 B7 B21 B22 C3	Exhibition of the special work. The evaluation will be individual for each member of the group	10
Guest lecture / keynote speech	A11 A25 A26 A30 B22	Attendance and active participation during the theoretical classes will be taken into account.	10
Supervised projects	B21 B22 C2 C3 C6 C7	Attendance to the practical classes will be valued as well as the work done and the special practice.	20
Objective test	B21 C3 C6 C7	It is possible to take a written exam on the contents of the subject. If this is done, it will be necessary to obtain a 5 out of 10 in this test. If it is not done, the score will be distributed among the other evaluation mechanisms.	20

Assessment comments



For students who do not attend class regularly must take the exam which will have a value of 50% of the grade and the practices carried out in class the other 50% (including the special practice of the work) being necessary to obtain a passing evaluation in both tests (work and exam).

The grading system will be expressed by numerical grade according to the established in art. 5 of the Royal Decree 1125/2003 of September 5 (BOE September 18), which establishes the European credit system and the grading system in university degrees of official character and valid throughout the national territory Grading system:

0-4.9=Fail

5-6.9=Failed

7-8.9=Notable

9-10=I excelled

9-10 Honorable Enrollment (Excusable)

In case of not passing the course at the first opportunity, the same work must be handed in at the second opportunity, contacting the teacher beforehand to evaluate the particular situation.

The teacher responsible for the subject will apply the corresponding regulations of the UDC when detecting any attempt of plagiarism motivated by a student of the subject in the development of his/her work. The fraudulent performance of the tests or evaluation activities will directly imply the grade of failure '0' in the subject in the corresponding call, thus invalidating any grade obtained in all evaluation activities in the extraordinary call.

Sources of information

Basic	- Pereira, Javier (2010). Handbook of Research on Personal Autonomy Technologies and Disability Informatics. IGI Group - W3C - Web Accessibility Initiative (WAI) (2021). Introducción a las Pautas de Accesibilidad para el Contenido Web (WCAG). https://www.w3.org/WAI/standards-guidelines/wcag/es - Arrastia Lana, María Puy (2009). Tecnologías de la información y las comunicaciones para personas con discapacidad intelectual . Pamplona : Universidad Pública de Navarra - Pereira Loureiro, Javier. Martínez Normand, Loic A. fuertes, José Luis. Vazquez Naya, José Manuel) (2008). Tecnologías de la Información y las Comunicaciones en la autonomía personal, dependencia y accesibilidad. A Coruña : Universidade da Coruña - Equipo GIMP (2021). The GIMP - Manual del usuario. Foro oficial de GIMP - http://www.gimp.org.es - Equipo Audacity (2021). Manual de usuario de Audacity. Web oficial de Audacity - https://www.audacityteam.org/ - CEAPAT (2021). Catálogo de pulsadores, soportes y otras adaptaciones. http://www.ceapat.es - Instituto de Mayores y Servicios Sociales (2004). Clasificación internacional del funcionamiento, de la discapacidad y de la salud CIF : versión abreviada . Madrid: IMSERSO - Instituto de Mayores y Servicios Sociales (2001). Clasificación internacional del funcionamiento, de la discapacidad y de la salud CIF . Madrid : IMSERSO - Dan Dennedy (2021). Shotcut. https://shotcut.org/ - Grupo Lifelong Kindergarten del MIT Media Lab (2021). Scratch. https://scratch.mit.edu/ - Lauren Sheehan (2017). Virtual Reality in Your OT Practice. https://otpotential.com/blog/virtual-reality-and-occupational-therapy - AOTA (2010). The Role of Occupational Therapy in Providing Assistive Technology Devices and Services. - Gokcen Akyurek, Sinem Kars, Zeynep Celik, Ceren Koc and Özge Buket Cesim (2017). Assistive Technology in Occupational Therapy. https://www.intechopen.com/chapters/55355 - WFOT (2019). Occupational Therapy and Assistive Technology. https://wfot.org/resources/occupational-therapy-and-assistive-technology - Cristina Nieves Perdomo Delgado (2019). Tecnología de asistencia en terapia ocupacional: uso del modelo Haat. https://www.revistatog.es/ojs/index.php/tog/article/view/46 - Reab (2020). Terapia ocupacional, tecnología y redes sociales como ocupación: Introducción. https://www.reab.es/terapia-ocupacional-tecnologia-y-redes-sociales-como-ocupacion-introduccion/
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Complementary	?Libro Blanco: I+D+I al servicio de las personas con discapacidad y las personas mayores?. INSERSO, Dirección General de Política Tecnológica y Comité Español de Representantes de Minusválidos. Valencia. 2003Publicaciones periódicas científicas y de interésBoletín Portal Mayores. Disponible únicamente en formato electrónico en: http://imfersomayores.csic.es/boletin/index.htmlNoticias Terapia-Ocupacional.com. Disponible únicamente en formato digital en http://terapia-ocupacional.comSolidaridad Digital. El Diario de la discapacidad. Con la participación de la Fundación Once y Disc@pnet. Disponible sólo on-line en http://solidaridaddigital.discapnet.esNosotros. Boletín informativo mensual de Fundación ONCE y FUNDOSA. Accesible on-line en la dirección : http://www.discapnet.esEnlaces de especial interés para la asignaturaW3C / WAI: http://www.w3c.org/WAIIMERSO: http://www.seg-social.es/imersoInstituto de Migraciones y Servicios Sociales. Ministerio de Trabajo y Asuntos Sociales. Con información sobre las actividades del gobierno en temas de accesibilidad. Accesible on-line el I Plan Nacional de Accesibilidad 2004-2012. Acceso a las actividades y documentos referentes al ?2003 el año europeo de las personas con discapacidad?CEAPAT: http://www.ceapat.orgCentro Estatal de Autonomía Personal y Ayudas Técnicas. El CEAPAT está dedicado expresamente a potenciar la accesibilidad integral y el desarrollo de la tecnología. Promueve la optimización de las ayudas técnicas y el diseño para todos, con el fin de mejorar la calidad de vida de los ciudadanos, con especial apoyo a las personas con discapacidad y personas mayores. Destaca su base de datos de ayudas técnicas accesible a través de InternetReal Patronato Discapacidad. http://www.rpd.esReal Patronato Español de Documentación sobre Discapacidad. Los servicios de documentación, información y publicaciones del Real Patronato constituyen su Centro Español de Documentación sobre Discapacidad (CE2D), el cual ofrece un centro de consulta y una biblioteca especializada, gestiona un conjunto de publicaciones especializadas y publica el Boletín del Real Patronato sobre Discapacidad. Accesible en formato electrónico en la dirección http://www.rpd.es/bolrp.htmSIDAR: http://www.sidar.orgFundación Sidar - Acceso Universal. Seminario de Iniciativas sobre Discapacidad y Accesibilidad en la Red. El Seminario SIDAR es un grupo de trabajo permanente y voluntario, integrado por personas expertas en nuevas tecnologías y en su accesibilidad. Con mucha información referente a las actuaciones españolas e internacionales de acceso al ordenador. Destaca el apartado dedicado a la accesibilidad a InternetONCE: http://www.once.esOrganización Nacional de Ciegos de España. Con información referente a las ayudas técnicas para la accesibilidad al ordenador de personas ciegas o con problemas de visión. Destaca su Centro de Investigación, Desarrollo y Aplicación Tiflotécnica (http://cidat.once.es/)SID: http://www.sid.usal.esEl Servicio de Información sobre Discapacidad, SID, es un servicio documental con un sistema informatizado de acceso vía Internet para la obtención de información sobre discapacidad. Se configura como una red pública puesta en funcionamiento conjuntamente por el Ministerio de Trabajo y de Asuntos Sociales (Instituto de Migraciones y Servicios Sociales-IMERSO) y la Universidad de Salamanca (Instituto Universitario de Integración en la Comunidad-INICO). En el SID se puede encontrar todo tipo de información relacionada con la discapacidad. Puede encontrarse información sobre normativa, recursos, centros y servicios, organizaciones, ayudas, documentación, actualidad, estadísticas, etcDisc@pnet: http://www.discapnet.esPortal sobre la discapacidad financiado por la Fundación ONCE y los FEDER de la UE. Test de Accesibilidad Web (TAW): http://www.tawdis.netHerramienta para evaluar la accesibilidad de las páginas Web. Totalmente en español. Su objetivo es difundir la accesibilidad como requisito en el diseño y realización de páginas Web con el fin de permitir el acceso a todas las personas. Dirigido a todas las personas interesada en este tema y especialmente a Webmasters, desarrolladores, diseñadores de páginas Web etc.
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Recommendations

Subjects that it is recommended to have taken before

Subjects that are recommended to be taken simultaneously

Subjects that continue the syllabus

Other comments



Class attendance is necessary. It is also necessary to obtain at least 50% of the value of each test to pass. Non-attendance involves to do the exam and delivering the practices developed during the course (including special practice -supervised work-. It's necessary to have access to the Moodle platform to study this subject. The site is the Radiology and Accessibility Lab located in the Oza building, on the second floor. Sustainability To help get an sustainable environment, the classworks will be :a.- Majority will be requested in digital electronic.b.- If is necessary use paper:- Plastics will not be used.- Double-sided prints will be made.- Recycled paper will be used.- Drafting will be avoided. PLAGIARISM Case of detecting fraud, copy or plagiarism in the writing of the work of the subject, implying a failure in the evaluation opportunity (0,0) and direct referral to the following opportunity. This attitude will be communicated to the Academic Committee and the other professors of the degree. In the event that the irregularity is reiterated in a 2nd evaluation, the Commission will be responsible for the temporary or perpetual expulsion of the student from the Degree taken.

(*)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.