



Teaching Guide				
Identifying Data				2024/25
Subject (*)	Clinic Gerontology I	Code	653540005	
Study programme	Máster Universitario en Xerontoloxía			
Descriptors				
Cycle	Period	Year	Type	Credits
Official Master's Degree	1st four-month period	First	Obligatory	4
Language	SpanishGalician			
Teaching method	Face-to-face			
Prerequisites				
Department	Fisioterapia, Medicina e Ciencias Biomédicas			
Coordinador	Pérez Fontán, Miguel	E-mail	miguel.perez.fontan@udc.es	
Lecturers	Millan Calenti, Jose Carlos Pérez Fontán, Miguel Rodriguez-Villamil Fernandez, Jose Luis	E-mail	jose.millan.calenti@udc.es miguel.perez.fontan@udc.es jose.luis.rodriguez-villamil@udc.es	
Web	estudios.udc.es/es/subject/4540V01/4540005/2024			
General description	The objective of this course is to show the student the main characteristics of the physiologic and pathophysiologic changes that occur during older age, in different morgans and systems of the human body. It also pretends to set the basis for understanding the physiopathology of the main syndromes and diseases associated with ageing, providing a background for the study of the diseases of the elderly, in future courses.			

Study programme competences / results	
Code	Study programme competences / results
A1	To be able to recognize the main pathologies and geriatric syndromes through the application of new and innovative work methodologies adapted to the field of gerontology
A2	Be able to apply the method of comprehensive geriatric and gerontological assessment in order to establish the bases for implementing the individualized care plan
A3	To be able to incorporate the Geronto-geriatric intervention methodology into the individualized intervention plans
A4	To be able to assume responsibility for their own professional development and their specialization in both the socio-health and health care for the older people in order to join the interdisciplinary teams of Geronto-geriatric assessment and intervention
A5	Acquire knowledge that allows the student to establish the appropriate Geronto-geriatric resource according to the characteristics of the older person
A6	Develop sufficient autonomy to participate in research projects and scientific or technological collaborations within the field of Gerontology, in interdisciplinary contexts both public and private and, where appropriate, with a high component of knowledge transfer.
A7	Acquire advanced knowledge and demonstrating, in a context of scientific and technological or highly specialized research, a detailed and informed understanding of the theoretical and practical aspects and the methodology of work in the field of Gerontology
A8	Know how to apply and integrate the knowledge acquired, the understanding of these, its scientific foundation and its problem-solving capabilities in social and socio-sanitary environments and defined in an imprecise way, including multidisciplinary contexts both researchers and professionals in the field of gerontology
B1	Possess and understand knowledge that provides a basis or opportunity to be original in the development and/or application of ideas, often in a research context
B2	That students know how to apply the knowledge acquired and their ability to solving problems in new or little-known environments within broader (or multidisciplinary) contexts related to gerontology and geriatrics
B3	That students are able to integrate knowledge and face the complexity of making judgments from information that, being incomplete or limited, includes reflections on the social and ethical responsibilities linked to the application of their knowledge and judgments.
B4	That students know how to communicate their conclusions ? and the knowledge and ultimate reasons that support them ? to specialized and non-specialized audiences in a clear and unambiguous way
B5	That students possess the learning skills that allow them to continue studying in a way that will be largely self-directed or autonomous
C1	Adequate oral and written expression in the official languages
C2	Mastering oral and written expression in a foreign language



C3	Using ICT in working contexts and lifelong learning
C4	Acting as a respectful citizen according to democratic cultures and human rights and with a gender perspective
C5	Understanding the importance of entrepreneurial culture and the useful means for enterprising people
C6	Acquiring skills for healthy lifestyles, and healthy habits and routines
C7	Developing the ability to work in interdisciplinary or transdisciplinary teams in order to offer proposals that can contribute to a sustainable environmental, economic, political and social development
C8	Valuing the importance of research, innovation and technological development for the socioeconomic and cultural progress of society
C9	Ability to manage times and resources: developing plans, prioritizing activities, identifying critical points, establishing goals and accomplishing them
C10	Know and apply the scientific method in the writing of projects
C11	Know how to disseminate the results obtained in the development of its activity through the sources of information available to the scientific community
C12	Broadening care, teaching and research perspectives through the exchange of students and teachers
C13	Know the possibilities of research in the field of gerontology in order to motivate students to join it, enabling the realization of doctoral theses

Learning outcomes			
Learning outcomes	Study programme competences / results		
That the student understands th physiologic changes of the organism in older age	AJ1	BC1	CC1
	AJ2	BC2	CC2
	AJ3	BC3	CC3
	AJ4	BC4	CC4
	AJ5	BC5	CC5
	AR1		CC6
	AR2		CC7
	AC1		CC8
			CC9
			CC10
That the student may be able to identify the needs of care derived from the main disorders and geriatric síndromes affecting the elderly.	AJ1	BC1	CC1
	AJ2	BC2	CC2
	AJ3	BC3	CC3
	AJ4	BC4	CC4
	AJ5	BC5	CC5
	AR1		CC6
	AR2		CC7
	AC1		CC8
			CC9
			CC10
			CC11
			CC12
			CC13



Planning, together with other members of an interdisciplinary team, the best care parameters, from a holistic bpoint of view of the human being.	AJ1 AJ2 AJ3 AJ4 AJ5 AR1 AR2 AC1	BC1 BC2 BC3 BC4 BC5	CC1 CC2 CC3 CC4 CC5 CC6 CC7 CC8 CC9 CC10 CC11 CC12 CC13
Establishing the the background for a therapeutic and communication relationship with older persons.	AJ1 AJ2 AJ3 AJ4 AJ5 AR1 AR2 AC1	BC1 BC3 BC4 BC5	CC1 CC2 CC3 CC4 CC5 CC6 CC7 CC8 CC9 CC10 CC11 CC12 CC13
Knowing and applying the necessary care to carry out a correct preparation of the elderly for a diagnostic test, and understanding its relevance.	AJ1 AJ2 AJ3 AJ4 AJ5 AR1 AR2 AC1	BC1 BC2 BC3 BC4 BC5	CC1 CC2 CC3 CC4 CC5 CC6 CC7 CC8 CC9 CC10 CC11 CC12 CC13



Keeping a respectful attitude in relation to the rights of information, autonomy and consent by the patient.	AJ1	BC1	CC1
	AJ2	BC2	CC2
	AJ3	BC3	CC3
	AJ4	BC4	CC4
	AJ5	BC5	CC5
	AR1		CC6
	AR2		CC7
	AC1		CC8
			CC9
			CC10
			CC11
			CC12
			CC13
Identifying the adequate sources of information with a sanitary interest, and managing the contents.	AJ1	BC1	CC1
	AJ2	BC2	CC2
	AJ3	BC3	CC3
	AJ4	BC4	CC4
	AJ5	BC5	CC5
	AR1		CC6
	AR2		CC7
	AC1		CC8
			CC9
			CC10
			CC11
			CC12
			CC13
Developing the capacity for autonomous learning	AJ1	BC1	CC1
	AJ2	BC2	CC2
	AJ3	BC3	CC3
	AJ4	BC4	CC4
	AJ5	BC5	CC5
	AR1		CC6
	AR2		CC7
	AC1		CC8
			CC9
			CC10
			CC11
			CC12

Contents	
Topic	Sub-topic
Topic 1. Introduction to Gerontology and Geriatrics	1.1. Bases conceptuais e obxectivos da xerontoloxía 1.2. A figura do xerontólogo 1.3. Saúde e envelhecimento 1.4. Características da enfermidade do paciente ancián 1.5. Paciente ancián / xerontolóxico / xeriátrico / fráxil



Topic 2. Communication and interaction in Gerontology	<ul style="list-style-type: none"><li>2.1 Comunicación: Concepto e tipos.</li><li>2.2 Habilidades e destrezas para comunicar</li><li>2.3 Chaves da boa comunicación</li><li>2.4 Interacción en Xerontoloxía: equipo interdisciplinar</li><li>2.5 Interacción: Proceso, obxectivo e campos principais de actuación</li></ul>
Topic 3. Physical examination of the aged patient	<ul style="list-style-type: none"><li>3.1 Historia clínica xeriátrica: semellanzas e diferencias</li><li>3.2 Condicións específicas da exploración clínica ao paciente maior</li><li>3.3 Exploración física por órganos, aparatos e sistemas</li><li>3.4 Presentación atípica de enfermidades comúns no ancián</li><li>3.5 Exploracións complementarias</li></ul>
Topic 4. Polipharmacy in the aged patient	<ul style="list-style-type: none"><li>4.1 Concepto de farmacodinamia e farmacocinética</li><li>4.2 Farmacodinamia: Tipos e lugares de acción</li><li>4.3 Factores que modifican a acción farmacolóxica</li><li>4.4 Farmacocinética: Absorción, distribución, eliminación e excreción</li><li>4.5 Toxicidade. Reaccións adversas. Reaccións iatroxénicas</li><li>4.6 Seguridade na prescripción</li></ul>
Topic 5. Epidemiology and prevention in Geriatrics: Main syndromes	<ul style="list-style-type: none"><li>5.1 Introducción á epidemioloxía e concepto de prevención en Xerontoloxía</li><li>5.2 Factores de risco e de protección</li><li>5.3 Concepto e tipos de prevención</li><li>5.4 Estudio das patoloxías máis frecuentes no ancián susceptibles de tratamento preventivo</li><li>5.5 Recomendacións de prevención</li></ul>
Topic 6. Nonspecific forms of organic reponse	<ul style="list-style-type: none"><li>6.1 Concepto e tipos de reaccións: inespecífica, resposta inmune específica.</li><li>6.2 Reacción inflamatoria: concepto, ámbito de actuación, finalidade</li><li>6.3 Fenómenos tisulares característicos da inflamación</li><li>6.4 Mediadores plasmáticos e celulares</li><li>6.5 Resposta inflamatoria sistémica: reactantes en fase aguda. Síndrome de resposta inflamatoria sistémica (SRIS). Reacción febril. Síndrome general de adaptación al estrés</li></ul>
Topic 7. Disorders of the immune reponse in the elderly	<ul style="list-style-type: none"><li>7.1 Resposta inmune. Inmidade innata e adaptativa</li><li>7.2 Concepto de inmunosenescencia</li><li>7.3 Cambios na inmidade innata e adaptativa co envellecemento</li><li>7.4 Marcadores de inmunosenescencia</li><li>7.5 O entorno proinflamatorio do ancián</li><li>7.6 Consecuencias de la inmunosenescencia</li><li>7.7. Efecto da inmunosenescencia sobre a resposta ás vacunas</li></ul>
Topic 8. Disorders of the nervous system in the elderly	<ul style="list-style-type: none"><li>8.1 O estado cognitivo do ancián normal</li><li>8.2 Efectos estruturais e funcionais do envellecemento sobre o sistema nervioso central</li><li>8.3 Exploración neurolóxica cerebral no ancián</li><li>8.4 Cambios neuronales asociados ao envellecemento</li><li>8.5 Consecuencias das enfermidades sobre as funcións cognitivas no ancián</li><li>8.6 Efecto de los fármacos sobre la función cognitiva del anciano</li><li>8.7 Medidas que enlentece o envellecemento cerebral</li></ul>



Topic 9. Sensorial disorders in the elderly	<p>9.1 Trastornos da audición no ancián. Presbiacusia</p> <p>9.2 Epidemioloxía da presbiacusia</p> <p>9.3 Factores de risco para presbiacusia</p> <p>9.4 Cambios estruturais e funcionais có envellecemento auditivo</p> <p>9.5 Tipos de presbiacusia</p> <p>9.6 Prevención e tratamento da presbiacusia</p> <p>9.7 Cambios estruturais no ollo do ancián</p> <p>9.8 Cambios funcionais na visión asociados ao envellecemento</p> <p>9.9 Manexo dos déficits visuais no ancián</p> <p>9.10 Alteracións no gusto, olfato e tacto no ancián</p>
Topic 10. Glandular and reproductive disorders in the elderly	<p>10.1 Alteracións hormonais no envellecemento normal</p> <p>10.2 Alteracións neuroendocrinas no ancián</p> <p>10.3 Alteracións do eixo hipotálamo-hipofisis-suprarenal</p> <p>10.4 Prolactina</p> <p>10.5 Catecolaminas</p> <p>10.6 Eixo renina-angiotensina-aldosterona</p> <p>10.7 Hormona de crecemento</p> <p>10.8 Cambios endocrinos tras da menopausia</p> <p>10.9 Cambios no eixo hipotálamo-hipofisis-testicular</p> <p>10.10 Alteracións hormonais na enfermidade de Alzheimer</p>
Topic 11. Cardiovascular disorders of the elderly	<p>11.1 Cambios na estrutura cardíaca durante o envellecemento normal</p> <p>11.2 Cambios funcionais cardíacos no envellecemento normal</p> <p>11.3 Cambios estruturais vasculares no envellecemento normal</p> <p>11.4 Cambios funcionais vasculares no envellecemento normal</p> <p>11.5 Arteriosclerosis vs aterosclerosis no ancián</p>
Topic 12. Bone, muscle and articular disorders in the elderly	<p>12.1 Descrición anátomo-fisiolóxica de óso, músculo e articulación</p> <p>12.2 Metabolismo e función de óso, músculo e articulación</p> <p>12.3 Fisiopatoloxía ósea, muscular e articular</p> <p>12.4 Afeccións óseas, musculares e articulares máis frecuentes</p>
Topic 13. Disposal disorders of the elderly	<p>12.1 Estructura e funcións do ril normal</p> <p>12.2 Cambios renais funcionais e estruturais asociados ao envellecemento</p> <p>12.3 Estimación do filtrado glomerular no ancián</p> <p>12.4 Enfermidade renal crónica no ancián</p> <p>12.5 Tensión arterial no ancián</p> <p>12.6 Infección urinaria e bacteriuria asintomática no ancián</p> <p>12.7 Prostatismo e cancro de próstata no ancián</p> <p>12.8 Función eréctil no ancián</p> <p>12.9 Incontinencia urinaria no ancián</p>
Topic 14. Mood and sleep disorders in the elderly	14.1

Planning

Methodologies / tests	Competencies / Results	Teaching hours (in-person & virtual)	Student's personal work hours	Total hours
Guest lecture / keynote speech	<p>A1 A2 A3 A5 A4 A6</p> <p>A7 A8 B1 B2 B3 B4</p> <p>B5 C1 C2 C3 C4 C5</p> <p>C6 C7 C8 C9 C10</p> <p>C11 C12 C13</p>	20	0	20



Problem solving	A1 A2 A3 A5 A4 A6 A7 A8 B1 B2 B3 B4 B5 C2 C3 C4 C5 C6 C7 C8 C9 C10 C12 C13	4	0	4
Seminar	A1 A2 A3 A5 A4 A6 A7 A8 B1 B2 B3 B4 B5 C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13	14	0	14
Supervised projects	A1 A2 A3 A5 A4 A6 A7 A8 B1 B2 B3 B4 B5 C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13	0	20	20
Document analysis	A1 A2 A3 A5 A4 A6 A7 A8 B1 B2 B3 B4 B5 C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13	0	38	38
Multiple-choice questions	A1 A2 A3 A5 A4 A6 A7 A8 B1 B2 B3 B4 B5 C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13	2	0	2
Personalized attention		2	0	2
(*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.				

Methodologies	
Methodologies	Description
Guest lecture / keynote speech	Oral presentations (lectures) by the professors, using interactive fomats, concerning the main topics of the course.
Problem solving	Individual or small group tutorials, destined to dispel doubts and deepening knowledge.
Seminar	Tutorized activities, oriente to improve knowledge.
Supervised projects	Review or research studies, carried out by the student, tutorized by the professors.
Document analysis	Time dedícate by the students to study the course
Multiple-choice questions	Evaluation of knowledge. Test, with 40 questions (4 posible answers), only one correct).

Personalized attention	
Methodologies	Description



Guest lecture / keynote speech	Interactive lecture
Seminar	Individualized or small-group tutorials, with particular dedication to students with partial time dedication
Problem solving	Supervised tasks
Supervised projects	Revisión or research Works, carried out individually, under professor's supervision.
Document analysis	Does not demand individualized supervisión.
Multiple-choice questions	Does not apply.

Assessment			
Methodologies	Competencies / Results	Description	Qualification
Guest lecture / keynote speech	A1 A2 A3 A5 A4 A6 A7 A8 B1 B2 B3 B4 B5 C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13	Valorarase a participación activa	10
Seminar	A1 A2 A3 A5 A4 A6 A7 A8 B1 B2 B3 B4 B5 C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13	Valorarase a participación activa	5
Problem solving	A1 A2 A3 A5 A4 A6 A7 A8 B1 B2 B3 B4 B5 C2 C3 C4 C5 C6 C7 C8 C9 C10 C12 C13	Valorarase a participación activa	5
Supervised projects	A1 A2 A3 A5 A4 A6 A7 A8 B1 B2 B3 B4 B5 C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13	Valoración do interese e calidade	20
Multiple-choice questions	A1 A2 A3 A5 A4 A6 A7 A8 B1 B2 B3 B4 B5 C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C13	Proba de resposta múltiple. 40 preguntas tipo test, con catro respostas posibles, solo unha correcta	60

Assessment comments
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To pass the course, the students will have to fulfill two conditions:

- 1) Passing the multiple response test, which implies a minimum score of 60%, taking into account that every three wrong answers will discount one correct answer.
- 2) Obtaining a global score of, at least, 5 points (over 10) in the global evaluation.

Fraudulent behavior during the tests or any other evaluated activities will imply directly the qualification of failing grade of the topic in the corresponding call, invalidating any qualification obtained for any of the activities regarding the upcoming extraordinary call.

All aspects related to "academic dispensation", "dedication to study", "permanence" and "academic fraud" shall be governed in accordance with the current academic regulations of the UDC.

### Sources of information

<b>Basic</b>	<ul style="list-style-type: none"> <li>- Halter JB (2017). Geriatric Medicine and Gerontology. McGraw Hill</li> <li>- Abizanda Soler (2020). Tratado de Medicina Geriátrica. Elsevier</li> <li>- Kane RL (2018). Principios de Geriatria Clínica. McGraw Hill</li> <li>- Walter LC (2021). Current Diagnosis &amp; Treatment Geriatrics. McGraw Hill</li> </ul>
<b>Complementary</b>	<ul style="list-style-type: none"> <li>- Taffet GE (2021). Normal ageing. UptoDate (online)</li> </ul>

### Recommendations

#### Subjects that it is recommended to have taken before

Biology of Aging/653540021  
 Old Age Demography/653540001

#### Subjects that are recommended to be taken simultaneously

Social Gerontology I/653540004

#### Subjects that continue the syllabus

Geriatric Pathology and Intervention/653540008  
 Intervention in Gerontology/653540003

#### Other comments

GREEN CAMPUS: To achieve a sustainable immediate environment and meet the strategic objective 2 of the fifth Plan of sustainability - environmental Green Campus FCS 2023-2025, the documentary work carried out on this subject: Will be mostly requested in a virtual format and computer support. If paper is used: Do not use plastics. Use double-sided printing. Use recycled paper. Prevent the realization of drafts.

(\*)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.