Information about the subject

Degree: Bachelor of Science Degree in Medicine

Faculty: Faculty of Medicine and Health Sciences

Code: 340508 **Name:** Medicine and Surgery of the Nephro-Urological System

Credits: 6,00 **ECTS Year:** 5 **Semester:** 1

Module: Human Clinical Training

Subject Matter: Human Pathology **Type:** Compulsory

Field of knowledge: Health Science

Department: Surgical Specialities

Type of learning: Classroom-based learning

Languages in which it is taught: Spanish

Lecturer/-s:

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Module organization

Human Clinical Training

Subject Matter	ECTS	Subject	ECTS	Year/semester
Human pathology basis	6,00	General Pathology I	3,00	3/1
		General Pathology II: Analysis by Problems	3,00	3/2
Psychology	6,00	Medical Psychology and Psychopathology	6,00	3/2
Human Pathology	102,00	Clinical Allergology and Immunology	3,00	3/2
		Dermatology	6,00	5/1
		Endocrinology and Nutrition	6,00	5/2
		Haematology	3,00	3/2
		Infectious Diseases	3,00	3/2
		Medical Oncology and Radiotherapy	3,00	5/2
		Medicine and Surgery of the Cardiocirculatory System	9,00	4/2
		Medicine and Surgery of the Digestive System	6,00	4/1
		Medicine and Surgery of the Musculoskeletal System	9,00	4/2
		Medicine and Surgery of the Nephro-Urological System	6,00	5/1

Human Pathology	Medicine and Surgery of the Nervous System	9,00	5/2
	Medicine and Surgery of the Respiratory System	6,00	3/2
	Obstetrics and Gynaecology	9,00	4/2
	Ophthalmology	3,00	3/2
	Otorhinolaryngology	3,00	4/2
	Paediatrics	9,00	5/2
	Palliative Medicine	3,00	6/1
	Psychiatry	3,00	5/1
	Rheumatology	3,00	4/2

Recommended knowledge

At the end of learning the subject, the student must be able to:

·Know the functionalism of the normal nephrourological system.
·Know the clinical manifestations and clinical syndromes that make up the Nephrology and Urology specialties
·Know the main diseases of the kidney and the genitourinary system in their medical and surgical aspects.
·Know how to indicate and interpret the main analytical, functional, imaging and morphological tests.
·Know and indicate the therapeutic, medical and surgical procedures of the organs and systems described above.
·Know the main preventive measures that lead to avoid, stop or slow down the progression of diseases of the genitourinary system
Know the prognosis of diseases of the genitourinary system and its possible modification when applying the different therapies.

Learning outcomes

At the end of the course, the student must be able to prove that he/she has acquired the following learning outcomes:

R1	Recognize the causes and mechanisms of progression of nephrological diseases
R2	Grouping together the recognised signs and symptoms into one of the major clinical nephrourological syndromes.
R3	Identify the clinical problems raised and request the necessary complementary tests to confirm the initial diagnostic suspicion.
R4	Identify the most appropriate therapeutic options for the patient, taking into account their risks and limitations
R5	Make an adequate prognosis on the severity of the disease.
R6	Adequately perform a medical history oriented to the solution of nephrological diseases.
R7	Carry out a complete physical examination with special attention to the genitourinary system (abdominal exploration, lumbar puncture, testicular exploration).
R8	Knowing how to interpret a basic urine and sediment analysis: knowing how to perform it. Evaluate: Density, pH, Glucose, Hematuria, Proteinuria, the presence of formal elements in the sediment
R9	Indicate and interpret basic analysis related to renal function, hydroelectrolyte and acid-base balance: Urea, Creatinine, Ions (Na, K, Cl) and pH and bicarbonate
R10	Calculate the Glomerular Filtration by means of the estimated formulas and place the patient in the appropriate stage of the chronic renal disease according to this calculation.

Competencies

Depending on the learning outcomes, the competencies to which the subject contributes are (please score from 1 to 4, being 4 the highest score):

BASIC		Weighting			
		1	2	3	4
CB1	Students have demonstrated to possess and understand knowledge in a study area that starts from the base of the general secondary education, and is usually found at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the forefront of their field of study	x			
CB2	Students know how to apply their knowledge to their job or vocation in a professional way and possess the competences that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of ??study			x	
CB3	Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics			x	
CB4	Students can pass on information, ideas, problems and solutions to both a specialized and non-specialized audience			x	
CB5	Students have developed the learning skills needed to undertake further studies with a high degree of autonomy	x			

GENERAL		Weighting			
		1	2	3	4
CG4	Developing professional practice with respect to patient autonomy, beliefs and culture				x
CG5	Recognizing the limitations themselves and the need to maintain and update their professional competence, giving special importance to the autonomous learning of new knowledge and techniques and to the motivation for quality				x
CG6	Developing professional practice with respect for other health professionals, acquiring teamwork skills				x

CG9	Understanding and recognizing the effects, mechanisms and manifestations of the disease on the structure and function of the human body				x
CG11	Understanding and recognizing the effects of growth, development and aging on the individual and their social environment	x			
CG12	Understanding the basis of action, indications and efficacy of therapeutic interventions, based on available scientific evidence				x
CG13	Getting and writing a medical history containing all relevant information			x	
CG14	Perform a physical exam and mental assessment	x			
CG15	Having the ability to make an initial diagnostic judgment and establish a reasoned diagnostic strategy				x
CG16	Recognizing and treating life-threatening situations and those that require immediate attention				x
CG17	Establishing all diagnosis, prognosis and treatment, applying principles based on the best possible information and clinical safety				x
CG18	Indicating the most appropriate therapeutics of the most prevalent and chronic acute processes, as well as terminally ill patients	x			
CG19	Raising and proposing appropriate preventive measures for each clinical situation				x
CG20	Acquiring enough clinical experience in hospital institutions, health centers or other health institutions, under supervision, as well as basic knowledge of patient-centered clinical management and appropriate use of tests, medicines and other health system resources	x			
CG21	Listening to carefully, obtain and synthesize relevant information about the problems afflicting the patient and understand the content of this information				x
CG22	Writing medical histories and other medical records in an understandable way to outsiders	x			
CG23	Communicating effectively and clearly, both orally and in writing, with patients, family members, media workers and other professionals	x			
CG24	Establishing good interpersonal communication that enables patients, family members, media workers and other professionals to address patients, families, media and other professionals with efficiency and empathy	x			

CG29	Knowing national and international health organizations and the environments and conditions of different health systems	x			
CG33	Maintaining and using records with patient information for further analysis, preserving data confidentiality	x			
CG36	Being able to formulate hypotheses, critically collect and evaluate information for problem solving, following the scientific method		x		

SPECIFIC		Weighting			
		1	2	3	4
CE41	Recognizing, diagnosing and guiding the management of major nephrourinary pathologies				x

TRANSVERSAL		Weighting			
		1	2	3	4
CT1	Analytical and synthesis capacity	x			
CT2	Planification and organization capacity	x			
CT3	Oral and written communication in mother language	x			
CT7	Solving problems	x			
CT8	Making decisions	x			
CT9	Team work	x			
CT10	Interdisciplinary team work	x			
CT12	Interpersonal relationship skills	x			
CT14	Critical reasoning	x			
CT15	Ethical commitment				x
CT16	Individual learning	x			

CT17	New situations' adaptation	x		
CT26	Knowing how to value personal action and know your own skills and limitations	x		
CT32	Being able to establish and maintain relationships with other professionals and institutions	x		
CT33	Knowing how to get relevant information from personal interviews	x		

Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
R1, R2, R3, R4, R5, R6, R7, R8, R9, R10	60,00%	Tests
R1, R2, R3, R4, R5, R6, R7, R8, R9, R10	20,00%	Simulations, ECOE
R1, R2, R3, R4, R5, R6, R7, R8, R9, R10	20,00%	Practice exam

Observations

MENTION OF DISTINCTION:
In accordance with the regulations governing the assessment and grading of subjects in force at UCV, the distinction of "Matrícula de Honor" (Honours with Distinction) may be awarded to students who have achieved a grade of 9.0 or higher. The number of "Matrículas de Honor" (Honours with Distinction) may not exceed five percent of the students enrolled in the group for the corresponding academic year, unless the number of enrolled students is fewer than 20, in which case a single "Matrícula de Honor" (Honours with Distinction) may be awarded. Exceptionally, these distinctions may be assigned globally across different groups of the same subject. Nevertheless, the total number of distinctions awarded will be the same as if they were assigned by group, but they may be distributed among all students based on a common criterion, regardless of the group to which they belong. The criteria for awarding "Matrícula de Honor" (Honours with Distinction) will be determined according to the guidelines stipulated by the professor responsible for the course, as detailed in the "Observations" section of the evaluation system in the course guide.

Learning activities

The following methodologies will be used so that the students can achieve the learning outcomes of the subject:

M1	Masterclass
M2	Problems resolution and practical cases
M3	Virtual simulations
M4	Content presentations by teacher
M5	Knowledges and skills explanation
M7	Oral presentation by student
M8	Group activities supervised by professor
M9	Knowledge acquirance through student interaction and activity
M11	Personalised attention by professor
M12	Tests to understand the level of knowledge acquirance and skills
M13	Written work
M14	Online activity on e-learning
M15	Personal study
M16	Information research
M17	Discussion and solving issues in group

M18 Work in team

M19 Group work for searching, discussion and information research

M21 Supervision of clinical histories

M22 Clinical practices

IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
Theory class M1, M2, M4	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10	60,00	2,40
Seminar and group practices M2	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10	5,00	0,20
Tutoring M11	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10	6,00	0,24
Evaluation M12	R1, R2, R3, R4, R6, R8, R9, R10	4,00	0,16
TOTAL		**75,00**	**3,00**

LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
No attendance M9, M13, M14, M15	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10	75,00	3,00
TOTAL		**75,00**	**3,00**

Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents

Nephrology

1 General concepts. Renal anatomy. Kidney function. Semiology. Measurement of glomerular filtration.
Goals:
Know the macro and microscopic structure of the kidney.Know the basic concepts of normal kidney function: purifying function, regulator of hydroelectrolyte balance, regulator of acid-base balance and metabolic endocrine function.Describe the functions of filtration, reabsorption, secretion.Know the mechanisms of renal concentration and dilutionRenal semiology and diagnostic methods in nephrology.2 The great Syndromes in Nephrology.
Goals:
Know and identify the 10 fundamental nephrological syndromes: Nonspecific Urinary Abnormalities (proteinuria, hematuria), Nephrotic Syndrome, Nephritic Syndrome, Acute kidney damage, Chronic Renal Insufficiency, Tubular disorders, Arterial Hypertension, Renal lithiasis, Urinary infection and Obstruction of the urinary tract.3 Acute Renal Insufficiency.
Goals:
Know the diagnostic criteria for ARF (RIFLE criteria).Know the major pathophysiological groups and list the most frequent causes that can cause ARF in each of the groups.Describe the clinical phases of Acute Tubular Necrosis (ATN).Know the clinical, analytical data and imaging tests that are based on the diagnosis of ARF.Know the differential diagnosis of ARF.Describe the most common complications of ARF.Know the evolution and prognosis of ARF and ATN.Assess both medical and substitute treatment for ARF.
4 Chronic Renal Insufficiency: concept, etiopathogenesis, clinical.
Goals:
Know the definition and stages of Chronic Kidney Disease (CKD).Know the kidney processes that most frequently lead to Chronic Renal Insufficiency (CRF).Know the pathogenetic mechanisms (toxic, endocrinological and adaptive renal) that lead to the appearance of CRF.Know the most important pathophysiological changes that occur in CRF.Describe the most important clinical manifestations due to involvement of the different organs and systems.Diagnosing CRI and knowing the most basic

criteria to differentiate ARF from CRI.Know the maintenance medical treatment of non-terminal CRI.Know the existence of a renal replacement treatment through dialysis and kidney transplantation.5 Glomerulonephritis: Concept, pathogenesis and classification.
Goals:
Know the etiology of primary glomerulonephritis.Describe the immunological mechanisms involved in its development.Know how to classify the different types of glomerulonephritis according to their evolution, histology and clinical manifestations.Correlate semiology, morphology, and pathogenesis.To know the usefulness of Renal biopsy in the diagnosis of glomerulonephritis.
6 Diagnosis and treatment of glomerulonephritis that occur most frequently with nephrotic syndrome: Minimal Changes, Focal Hyalinosis, Membranous Glomerulonyphritis.
Goals:
Know the main glomerulonephritis.Define the fundamental clinical manifestations.Distinguish its morphology.Know your prognosis and treatment.7 Diagnosis and treatment of glomerulonephritis, which most frequently occur with nephritic syndrome and nonspecific urinary abnormalities: mesangial glomerulonyphritis, mesangiocapillary glomerulonephritis, acute and extracapillary glomerulonephritis.
Goals:
Know the main glomerulonephritis and the syndromes associated with them.Define the fundamental clinical manifestations.Distinguish its morphology.Know your prognosis and treatment.8 Lupus Nephropathy:
Goals:
To know the clinical-biological semiology of Lupus Nephropathy.To present the usefulness of renal biopsy in the diagnosis of lupus nephropathy.List the fundamental diagnostic tests.Describe the morphological bases of the different types of Lupus Nephropathy.Know the clinic of the types of Lupus Nephropathy.Explain what types of Lupus Nephropathy require treatment and what type of treatment (induction, maintenance).Know the prognosis of Lupus Nephropathy.9 Renal involvement in systemic vasculitis and other autoimmune diseases: ANCA + Vasculitis, Goodpasture, Schonlein Henoch, Cryoglobulinemia,

Sjogren, Rheumatoid Arthritis.
Goals:
List vasculitis and other autoimmune diseases that can cause kidney involvement.To reason the pathogenetic mechanisms of vascular and renal injury.Describe the renal microscopic morphological disorders.Expose the renal clinical manifestations of these pathologies.Know the bases of immunological diagnosis.Describe the prognosis and treatment of vasculitis and other autoimmune diseases with kidney involvement.10 Diabetic nephropathy. Kidney and Uric Acid.
Goals:
To reason the different mechanisms by which Diabetes Mellitus produces kidney involvement.Describe the different phases of

Urology

17 General semiology of the urinary system and Diagnostic Imaging in urology (radiological, endoscopic and nuclear medicine).
Goals:
Review of urological anatomy and physiology.Basic evaluation of the urologic patient, which should include a careful medical history, physical examination, and urinalysis. These three basic components form the cornerstone of urologic evaluation and should precede any subsequent diagnostic procedure.Know and properly identify the different signs and symptoms with which diseases that affect the urinary system are translated clinically.Know how to differentiate the main symptoms and the sequence of secondary symptoms associated with diseases of the urogenital system on a purely clinical basis. Have sufficient knowledge about the different imaging, radiological, endoscopic and nuclear medicine exploratory means used in urology and the most characteristic signs provided by these diagnostic procedures..
18 Pediatric Urology
Goals:
Know the basic epidemiological aspects of congenital anomalies of the urinary system.Knowing the different chronological stages in which the normal embryological development of the urinary system can be interfered with, and its interrelation with the differentiation processes of the genital system in both sexes.Recognize the most characteristic morphological and clinical features of malformation syndromes that affect the urogenital system.Have a sufficiently broad knowledge of the range of therapeutic possibilities and of the essential technical aspects for the most significant malformations.
19 Urogenital Trauma.
Goals:
Know the different mechanisms by which open or closed trauma can occurgenitourinary systemCarry out a correct initial clinical assessment of a patient with suspected trauma to the urogenital area.Establish the diagnosis and degree of clinical severity of blunt renal trauma as well as adopt the most immediate therapeutic measures.Establish the differential diagnosis between intraperitoneal rupture and extraperitoneal rupture of the bladder and adopt the most

urgent therapeutic guidelines.To know the basic exploratory rules for the differential diagnosis between blunt bladder trauma and blunt urethral trauma, as well as the initial therapeutic measures to be adopted.Recognize and assess the degree of importance of a trauma to the genital area and know how to adopt the most suitable initial therapeutic guidelines.Knowing how to assess with adequate criteria the limits of their direct clinical performance in the face of a condition belonging to this area of ??study and knowing how to establish when the patient should be treated by a specialist.20 Upper and Lower Urinary Tract Obstructive Uropathy
Goals:
Have knowledge about the concept of obstructive uropathy and the pathophysiological mechanisms associated with acute and chronic obstruction of the lower and upper urinary tractKnow the different anatomoclinical entities capable of conditioning an obstruction of urinary flow at this level.Know how to interpret the different accompanying clinical symptoms and signs, as well as the different exploratory techniques used to establish the differential diagnosis between the different processes and their differential diagnosis with functional obstructions of neurogenic origin.To know the differential clinical characteristics between acute and chronic obstruction of the upper urinary tract. Know the different techniques and explorations used to delimit the different etiologies and establish a differential diagnosis with the so-called equivocal obstructions.Know the general rules for the therapeutic management of obstructive uropathy of the upper and lower urinary tract, both from the medical and surgical aspects.21 Infectious and inflammatory pathology of the urinary system. Infectious pathology of the genital system in the male.
Goals:
Clearly know the nosological concept of urinary infection and the general epidemiology of urinary tract infections, breaking down their incidence according to age and sex.To know the etiopathogenesis of urinary tract infections and the defense mechanisms of the urinary system against the invasion of pathogenic germs.To know in depth the different clinical syndromes as well as their diagnostic approach and therapeutic management.Have knowledge of the basic

prophylactic rules in order to minimize the incidence of urinary infections, both in the outpatient and in the nosocomial environment22 Uroandrology
goals
To know from the embryological and clinical point of view the different variants observed in the differentiation anomalies of the male external genitalia.Know the etiological classification and the therapeutic possibilities of male infertility.Cone

Temporary organization of learning:

Block of content	Number of sessions	Hours
Nephrology	19,00	38,00
Urology	18,50	37,00

References

• Clinical Nephrology, 3rd Ed. L. Hernando Avendaño. Ed. Panamericana. Madrid 2008. ISBN: 978-84-9835-186-6• Nephrology up to date. 1st Ed. V. Lorenzo Sellarés, JM López Gómez. Plus Medical. 2010. ISBN: 978- 84- 96727-97-7. (Available as a free download at www.senefro.org)• Guidelines of the European Association of Urology 2019 (Available as a free download at www.uroweb.org)

Addendum to the Course Guide of the Subject

Due to the exceptional situation caused by the health crisis of the COVID-19 and taking into account the security measures related to the development of the educational activity in the Higher Education Institution teaching area, the following changes have been made in the guide of the subject to ensure that Students achieve their learning outcomes of the Subject.

Situation 1: Teaching without limited capacity (when the number of enrolled students is lower than the allowed capacity in classroom, according to the security measures taken).

In this case, no changes are made in the guide of the subject.

Situation 2: Teaching with limited capacity (when the number of enrolled students is higher than the allowed capacity in classroom, according to the security measures taken).

In this case, the following changes are made:

1. Educational Activities of Onsite Work:

All the foreseen activities to be developed in the classroom as indicated in this field of the guide of the subject will be made through a simultaneous teaching method combining onsite teaching in the classroom and synchronous online teaching. Students will be able to attend classes onsite or to attend them online through the telematic tools provided by the university (videoconferences). In any case, students who attend classes onsite and who attend them by videoconference will rotate periodically.

In the particular case of this subject, these videoconferences will be made through:

[X] Microsoft Teams

[ ] Kaltura

Situation 3: Confinement due to a new State of Alarm.

In this case, the following changes are made:

1. Educational Activities of Onsite Work:

All the foreseen activities to be developed in the classroom as indicated in this field of the guide of the subject, as well as the group and personalized tutoring, will be done with the telematic tools provided by the University, through:

X	Microsoft Teams
	Kaltura

Explanation about the practical sessions:

2. System for Assessing the Acquisition of the competences and Assessment System

ONSITE WORK

Regarding the Assessment Tools:

[X] The Assessment Tools will not be modified. If onsite assessment is not possible, it will be done online through the UCVnet Campus.

[ ] The following changes will be made to adapt the subject's assessment to the online teaching.

Course guide		Adaptation	
Assessment tool	Allocated percentage	Description of the suggested changes	Platform to be used

The other Assessment Tools will not be modified with regards to what is indicated in the Course Guide.

Comments to the Assessment System:

Para poder evaluar la competencia del alumno iremos bajando progresivamente el examen tipo test hasta un 40 % y sustituyéndolo por casos prácticos que permitan juicio clínico. Se ha añadido un trabajo práctico