

**COURSE DATA****DATA SUBJECT****Code:** 34480**Name:** Nephrology and urology**Cycle:** Undergraduate Studies**ECTS Credits:** 6**Academic year:** 2025-26**STUDY (S)**

Degree	Center	Acad. year	Period
1204 - Degree in Medicine	Facultat de Medicina i Odontologia	4	First quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
1204 - Degree in Medicine	Human clinical training III	COMPULSORY

COORDINATION

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SUMMARY

The general objective is to form professionals, in the area of Nephrology and Urology, with theoretical and practical knowledge, attitudes and skills that allow students to guide and solve, if possible, the situations which they will have to face, focusing in the prevention.

PREVIOUS KNOWLEDGE**RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE**

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

The understanding of the subject Nephrology-Urology needs to integrate knowledge of Anatomy, Histology, Physiology, Immunology, Pathological Anatomy, Microbiology and Pharmacology, as well as the relation with knowledge of other areas of Medicine and Surgery.



COMPETENCES / LEARNING OUTCOMES

1204 - Degree in Medicine

Acknowledge diversity and multiculturality.

Acquire proper clinical experience in hospitals, health care centres and other health institutions, under supervision, as well as basic knowledge of clinical management focused on the patient and the correct use of tests, medicines and other resources available in the health care system.

Capacity for communicating with professional circles from other domains.

Conocer los diferentes aspectos de la medicina familiar y comunitaria: entorno vital de la persona enferma, promoción de la salud en el ámbito familiar y comunitario.

Consideration of ethics as a fundamental value in the professional practise.

Criticism and self-criticism skills.

Establish the diagnosis, prognosis and treatment, applying principles based on the best information available and on conditions of clinical safety.

Have the capacity to make an initial diagnosis and establish a reasonable strategy of diagnosis.

Indicate the most accurate therapy in acute and chronic processes prevailing, as well as for terminally ill patients.

Is aware of the characteristics of prevalent pathologies in the case of elders.

Is aware of the main infectious agents and their mechanisms of action.

Is aware of tumour disease, its diagnose and management.

Know how to use IT in clinical, therapeutic and preventive activities, and those of research.

Know how to use the sources of clinical and biomedical information available, and value them critically in order to obtain, organise, interpret and communicate scientific and sanitary information.

Knows how to evaluate modifications in clinical parameters at different ages.

Knows how to perform a complete anamnesis, focused on the patient and orientated to various pathologies, interpreting its meaning.

Knows how to perform a physical examination of the body organs and systems, as well as a psychopathological exploration, interpreting their meanings.

Knows how to set an action plan, focused on the patients needs and the family and social environment, which should be coherent regarding the patients symptoms and signs.

Obtain and elaborate a clinical history with relevant information.



- Perform a physical examination and a mental health assessment.
- Plan and propose appropriate preventive measures for each clinical situation.
- Proper organisation and planning of the workload and timing in professional activities.
- Recognises, diagnoses, and guides the management of the main nephrourological pathologies.
- Recognises, diagnoses, and guides the management of the main pathologies affecting the immune system.
- Recognises, diagnoses, and guides the management of vital risk situations.
- Team-working skills and engaging with other people in the same line of work or different.
- Understand the importance and the limitations of scientific thinking in the study, prevention and management of diseases.
- Working capacity to function in an international context.

DESCRIPTION OF CONTENTS

0. THEORETICAL TEACHING

Expositive method with active participation, student's questions.

In the subject of Nephrology, within the theoretical classes, the professor will proceed to record the topics of the program on video or in voiced power point class. The videos or voiced classes recorded will be posted in the virtual classroom with sufficient days in advance of the class. The pdf of the classes in power point will also be posted in the virtual classroom. Students must review the videos or class recorded, before attending the face-to-face class.

The face-to-face class will consist of three parts, divided into approximately 20 minutes each. In the first part, the teacher will present in a summarized way the most important concepts and contents of the theoretical topic that has been exposed in the video or voiced class. Student participation will be promoted through the use of interactive systems with the mobile phone (Wooclap).

Classroom practices: seminars. In small groups, the professor will present in-depth specialized topics, case studies, bibliography management, current topics, ... Group work and oral presentation will be promoted. It could be understood as "cooperative learning". The use of online resources and YouTube Channel will be encouraged.

Clinical practices: students clinical practices in sanitary services in the different university hospitals, primary health centres, mental health centres, public health areas, in order to learn how to perform an anamnesis and basic clinical explorations, with a first contact with patients, supervised by the professor or body teaching.



1. THEORETICAL TEACHING (NEPHROLOGY)

1.- Introduction to Nephrology. Proteinuria Hematuria Pathogenesis of glomerular diseases. Renal anatomy and physiology, interpretation of laboratory data. Proteinuria, hematuria. Imaging diagnosis, levels of kidney injury and pathogenesis of kidney injury.

2.- Acute renal failure. Classification of acute kidney injury, causes and risk factors. Glomerular hemodynamics. Differential diagnosis acute and chronic renal failure. Diagnosis by laboratory indexes (blood and urine) and imaging tests. Treatment.

3.- Chronic kidney failure. Concept of chronic kidney disease (CKD). KDIGO classification. Estimation of kidney function. Progression factors in CKD. Nephrotoxicity. Complications of CKD. Renal replacement therapy. Indications and types.

4.- Nephritic syndrome and accompanying glomerulopathies. Know how to recognize the findings that characterize nephritic syndrome, pathogenetic mechanisms, diseases that can lead to nephritic syndrome (acute post-streptococcal GN, extracapillary GN, and IgA nephropathy).

5.- Nephrotic syndrome and accompanying glomerulopathies. Know how to recognize the characteristics of a nephrotic syndrome, pathogenic mechanisms, diseases that can lead to nephrotic syndrome (membranous GN, segmental and focal GN, membranoproliferative GN, GN due to minimal changes and GN related to alteration of complement proteins).

6.- Secondary glomerulopathies: diabetes, lupus and amyloidosis. Know the increasing prevalence of diabetic nephropathy, pathogenic mechanisms and risk factors, meaning of microalbuminuria, and treatments. Knowledge of lupus nephropathy, Alport's Sdr, and 1st and 2nd amyloidosis.

7.- Vascular nephropathies. Know the pathologies that affect the renal vessels as a primary level of injury. Renal: essential hypertension, renovascular hypertension, renal thromboembolism, atheroembolic disease or cholesterol embolism, thrombotic microangiopathy and vasculitis.

2. THEORETICAL TEACHING (CONTINUATION)

8.- Acute and chronic tubulointerstitial nephritis. Concept of interstitial, acute and chronic nephropathy, clinical findings, possible causes, prevention measures and treatment.

9.- Renal cystic diseases. Knowledge of prevalence, pathogenetic mechanisms of renal cystic diseases, prognostic significance and treatment. Special emphasis on autosomal dominant polycystic kidney disease.

10.- Basic hydroelectrolytic alterations: dehydration. Alterations of Na and K. Know the regulatory mechanisms of blood volume, including those related to sodium and water homeostasis, clinical



manifestations, and treatment of extracellular volume disorders: dehydration, hyperhydration, hyponatremia, hypernatremia, hyperkalemia and hypokalemia.

11.- Acidosis and metabolic alkalosis. Knowledge of basic concepts: acidosis, alkalosis, acidemia, alkalemia. Mechanisms of compensation and regulation of acid-base disorders, diagnosis and treatment.

12.- Tubulopathies. Concept of tubulopathies, symptoms and presentation of the different tubulopathies. Differential diagnosis and their characteristics.

3. THEORETICAL TEACHING (UROLOGY)

13.- Voiding dysfunction. Benign prostatic hyperplasia

14.- Filling dysfunction. Overactive bladder. Urinary incontinence. Neurogenic bladder.

15.- Urinary Infection. Basic concepts. Clinical forms.

16.- Urinary lithiasis. Obstructive uropathy. Urinary diversion.

17.- Urological urgencies.

18.- Kidney cancer.

19.- Urothelial cancer.

20.- Prostate cancer.

21.- Penis and testicular cancer.

22.- Benign scrotal pathology.

23.- Sterility by male factor. Erectile dysfunction.

4. SEMINARS

Seminars

1. Nephrotic syndrome.

2. Nephritic syndrome.

3. Metabolic acidosis.

4. Hypoosmotic syndrome.

5. Insuficiencia renal aguda.

6. Enfermedad renal crónica.

Seminars based on clinical cases and skills classroom

1. Management of patients with acute scrotum

2. Management of patients with nephritic colic

3. Management of patients with urinary incontinence

4. Management of patients with prostate cancer

5. Management of patients with hematuria. Bladder tumor

6. Management of patients with obstructive uropathy. Basic knowledge of urethral catheterization,



suprapubic shunt, ureteral catheterization and percutaneous nephrostomy. Basic knowledge of rectal examination.

5. CLINICAL PRACTICES

In addition to the seminars and videos with recommended practical content (YouTube and recorded in the Nephrology and Urology services), there will be practices assisting patients. They will be carried out during the rotation through the Nephrology and Urology services, becoming familiar with patients with the most frequent pathologies who need outpatient care or hospitalization in their respective services. It will be a minimum of 27 hours.

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theory	26,00
Seminars	22,00
Laboratory	4,00
In-class tutorials	0,00
Clinical practice	23,00
Total hours	75,00

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	10,00
Independent study and work	20,00
Preparation of lessons	25,00
Preparation for assessment activities	15,00
Resolution of case studies	5,00
Preparation of supplementary reports	0,00
Preparation of the internship report and evaluation of the internship	0,00
Total hours	75,00

TEACHING METHODOLOGY

In the **theoretical classes**, the teacher will proceed to record the program topics on video or spoken class (Power point recorded with voice or video). The videos or spoken classes will be posted in the virtual classroom with sufficient days in advance of the class. The pdfs of the power point of the classes will also



be posted in the virtual classroom. Students must review the videos or spoken class before attending the in-person class.

For this, it is very important that the student has previously viewed the spoken classes (Power Point videos), to be able to come to class with the theoretical concepts learned and to be able to take better advantage of the class as well as the practical considerations. This is essential because part of the theoretical content won't be repeated, which must have been viewed before going to class.

(See above: Theoretical teaching. Expository method with active participation and questions from the students)

2.- Continuous evaluation exam: Multiple choice exam with two tests of 30 questions each.

Two continuous evaluation exams will be carried out. Each exam includes the contents of half of the syllabus (exam 1: topics 1-6; exam 2: topics 7-12). Each exam will consist of 30 multiple choice questions with five answers and only one valid answer. The duration of each exam will be 45 minutes and will be carried out between December 5 and 20, both included. Between the two continuous evaluation exams, 1 point out of 10 can be added. Each question in this continuous evaluation scores 0.0166. There are 30 test questions: virtual classroom at the end of each class can mean a total of 1 point out of 10). In this continuous evaluation with multiple choice questions only, four wrong answers subtract 1 correct question. Carrying out this continuous evaluation is voluntary, but it increases the grade obtained in the final exam up to 0.5 points out of 10 in the final exam of the subject. The grade will only increase for those students who have obtained at least 4 out of 10 in the final exam. Among students who obtain a final grade greater than 9 points out of 10, the grades will be adjusted in sections by prorating the grades between 9 and 11 to adjust them to grades between 9 and 10.

This can occur because they can even reach 11 points in the case of having obtained a 10 in the exam and one point in the continuous evaluation. For example, a student can get 11 points, and her score will be a 10, and another student can get a 9.5 and with the proration it will remain at 9.4 after adjusting to the maximum grade for the course. But the outstanding will always be maintained for those who obtain a 9 or more.

These two continuous evaluations will be carried out from December 5 to 20. The grade obtained in the continuous evaluation will be added to the grade for the January exam and will not be saved for the June exam.

The characteristics of the final exam are mentioned later in the "Evaluation section".

In case of there are technical problems in completing the questions at the end of each class to increase the grade, the value of the questions in the continuous evaluation exam will be doubled. That is to say that instead of being able to increase half a point between the two continuous assessment exams, one point out of 10 will be increased. However, there should be no technical problems in the questions at the end of the class.

Classroom practices: seminars. In small groups, the professor will present in-depth specialized topics, case studies, bibliography management, current topics. Group work and oral presentation will be promoted.



It could be understood as "cooperative learning". The use of online resources and YouTube Channel will be encouraged.

Clinical practices: students clinical practices in sanitary services in the different university hospitals, primary health centres, mental health centres, public health areas, in order to learn how to perform an anamnesis and basic clinical explorations, with a first contact with patients, supervised by the professor or body teaching.

The gender perspective, the respect for diversity, and the sustainable development goals (SDGs) will be incorporated into teaching, whenever possible.

EVALUATION

Theoretical evaluation: 50% of the final exam note. It will be done through a written test that will deal with the contents of the theoretical program and aim to evaluate the acquisition of knowledge. The content of the test will be the same for all groups of the same subject.

Practical evaluation: 50% of the final exam note. It will be assessed with the conduct of clinical cases evaluating the acquisition of skills related to general and specific competencies.

Nephrology: The theoretical exam will consists of 20 multiple-response test questions that only one will be correct and 5 short questions. The practical exam will consist of 25 multiple-response test on clinical situations. Each of the 50 questions, either test or short answer, score 0.20 points, every 4 wrong answers will be subtracted a hit, the blank answers are not.

Urology: The theoretical exam will consist of 30 questions type multiple-response test of which only one is correct. Each well-answered question scores 1 point. The sum (maximum 30) will be divided by 6 to obtain half of the final score (maximum 5). Each question wrongly answered subtracts 0.25 from the sum of the test. The practical exam will consist of 10 additional questions type multiple-response test of which only one will be correct. These questions will be about clinical cases and may incorporate complementary explorations for their interpretation. Each well-answered question scores 0.5. With the sum, the final score of the practical part will be obtained (maximum 5). Questions with incorrect answers from the practical part do not subtract.

To pass the subject it is necessary to approve the two parts that compose it, at least 2.5 in theory and 2.5 in the practical. If one of the parts is approved, the note will be kept **ONLY UNTIL THE 2nd CALL IN JUNE OF THE SAME YEAR.**

It is required to accede to the advance of convocation of this subject that the student has completed all of his practices.



The attendance to the practices will be obligatory. To pass the subject, the student enrolled for the first time must attend at least 80% of the practical activities.

REFERENCES

BIBLIOGRAFÍA DE NEFROLOGÍA

- Hernando Avendaño. Nefrología clínica. 4ª ed, 2017. Ed. Panamericana.
- Víctor Lorenzo y Juan Manuel López Gómez. Nefrología al día. <https://nefrologiaaldia.org/>
- Uptodate: <https://www.uptodate.com/contents/search>
- Nefrologia para estudiantes de Medicina: <https://nefrologiaaldia.org/es-docencia>

BIBLIOGRAFÍA DE UROLOGÍA

Libros de Texto

- Smith y Tanagho. Urología General 18 Ed.
- Campbell / Walsh. Urología 10ª Ed. Médica Panamericana

Guías Clínicas

- Guía de la AEU sobre el cáncer de Próstata (www.uroweb.org)
- EAU online guidelines (<http://www.uroweb.org/guidelines/online-guidelines/>)

Webs urológicas

- www.emedicine.com/med/UROLOGY.htm
- www.uroportal.net
- National Cancer Institute (<http://www.cancer.gov>) Español / English

RECURSOS e-Salut:

- ClinicalKey Student Medicina, Odontologia y Enfermería [<https://uv-es.libguides.com/RecursosSalut>]
- Acces Medicina [https://uv-es.libguides.com/Access_Medicina]
- Médica Panamericana [https://uv-es.libguides.com/Medica_Panamericana]

- Brenner & Rector (TROBES UV: Vitalsource). <https://bookshelf.vitalsource.com/#/>