1. OVERVIEW

Subject Area	The endocrine system
Degree	MEDICINE
School/Faculty	BIOMEDICAL AND HEALTH SCIENCES
Ac. Year	THREE
ECTS	7 ECTS
Type	COMPULSORY
Language(s)	SPANISH
Delivery Mode	ON CAMPUS
Semester	SIX-MONTHLY

2. INTRODUCTION

This is a compulsory subject belonging to the Human Clinical Training module III. This module consists of 174 ECTS in clinical training and 72 ECTS in clinical placements. Human Clinical Training brings together all the knowledge, skills and attitudes students acquire throughout the degree programme. The endocrine system subject consists of 3.5 ECTS and 3.5 ECTS in clinical placements. To take this course, students must have passed at least 150 ECTS in the first three years.

The overall objectives of the subject area are:

- Provide knowledge of aetiology, symptomatology, diagnostics, prognosis and prevention of diseases of the endocrine system.

- Direct the gathering of patient information to draw up a clinical history (anamnesis and physical examination).

- Understand how the main complementary tests are used.

- Learn the steps involved in making a diagnosis, prognosis and treatment plan for the main pathologies of the endocrine system.

- Decide on and propose the suitable preventative measures in different clinical situations.

3. SKILLS AND LEARNING OUTCOMES

Basic Skills (CB, as per the Spanish acronym):

- CB2: Students can apply their knowledge to their work professionally and possess the necessary skills, usually demonstrated by forming and defending opinions, as well as resolving problems within their study area.
- CB3: Students will develop an ability to gather and interpret relevant data (usually within their study area) to form opinions which include reflecting on relevant social, scientific or ethical matters.

- CB4: Students can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences.
- CB5: Students will develop the learning capacity required to undertake subsequent study with a high degree of autonomy.

General skills (CG, as per the Spanish acronym):

- CG1. Recognise the essential parts of being a medical professional, including ethical principles and legal responsibilities, together with how to provide a patient-centred service.
- CG2. Understand the importance of such principles to benefit patients, society and the profession, with particular attention paid to professional secrecy, confidentiality and intimacy.
- CG3. Know how to apply the principle of social justice to professional practice.
- CG4. Develop professional practice taking into account patient autonomy, beliefs and culture.
- CG5. Be aware of the need to maintain and update professional skills, paying special attention to continuous self-learning of emerging knowledge and to discover new products and techniques with the aim of improving quality.
- CG6. Carry out professional activity with regard to other health professionals.
- CG9. Understand and recognise the effects, mechanisms and manifestations of a disease on the structure and functioning of the human body.
- CG10. Understand and recognise the causal agents and risk factors which determine health conditions and the development of a disease.
- CG12. Understand the principles of action, indications and effectiveness of therapeutic interventions, based on the available scientific evidence.
- CG13. Obtain and elaborate a clinical history report with all relevant information.
- CG14. Perform a physical examination and mental health assessment.
- CG15. Have the ability to carry out an initial diagnosis and establish a well-founded approach to making a diagnosis.
- CG17. Establish the diagnosis, prognosis and treatment, applying the principles based on the most reliable information possible.
- CG18. Indicate the most suitable therapy for the most common acute and chronic processes, including patients in the terminal phase.
- CG19. Raise and propose the suitable preventative measures required for each clinical situation.
- CG20. Acquire sufficient clinical experience under supervision in hospital institutions, health centres or other healthcare institutions.
- CG21. Listen attentively, obtain and synthesise information regarding the problems troubling the patient and understand this information.
- CG22. Write clinical histories and other medical records in a way so they can be understood by other people.
- CG23. Communicate effectively and clearly, both orally and in writing, with patients, family members, media and other professionals.
- CG24. Establish good interpersonal communication which allows you to efficiently and empathetically connect with patients, family members, media and other professionals.
- CG26. Assume a role in the prevention and protection against diseases, injuries or accidents, together with the maintenance and promotion of health, both on an individual and community level.
- CG32. Know how to use information and communication technology in clinical, therapeutic, preventative and research activity.

Cross-curricular skills (CT, by the acronym in Spanish):

- CT1. Communication: ability to engage in active listening, ask questions and respond in a clear and concise way, as well as to effectively express ideas and concepts. This includes concise and clear written communication.
- CT2. Leadership: ability to offer ideas, approaches and interpretations through strategies which offer solutions to real-life problems.
- CT3. Teamwork: ability to integrate and collaborate actively with other people, areas and/or organisations to reach common goals, evaluate and integrate contributions from the rest of the group members and create a good working environment.
- CT4. Adaptability: ability to detect, interpret and respond to a changing environment. Ability to equip themselves and work effectively in different situations and/or with different groups or individuals. This means adapting to change depending on circumstances or needs. It involves the confidence to take on crucial challenges on a personal or group level, maintaining a good physical and mental health to allow work to be carried out effectively.
- CT5. Initiative: ability to undertake difficult or risky actions with resolve.
- CT6. Problem solving: ability to solve an unclear or complex issue or situation which has no established solution and requires skill to reach a conclusion.
- CT7. Decision making: ability to choose between different options or methods to effectively solve different problems or situations.
- CT8. Planning and organization: ability to set objectives and choose the right means to fulfil them through the efficient use of time and resources.
- CT9. Ability to put knowledge into practice, using the skills acquired in the classroom to mock situations based on real life experiences that occur in the relevant profession.
- CT10. Independent learning: the ability to govern your own development by choosing the most effective lines of action, strategies, tools and opportunities to independently learn and apply knowledge to practice.

Specific skills (CE, by the acronym in Spanish):

- CE 3.1.12. Recognise, diagnose and direct treatment of the main pathologies of the endocrine system. Nutrition pathologies.
- CE 3.2.1. Know how to do a full anamnesis focused on the patient and with a view to diverse pathologies, interpreting its meaning.
- CE 3.2.2 Know how to perform a physical examination of the systems and apparatus, as well as a psychopathological assessment, being able to interpret the results.
- CE 5.1.1. Complete a student work placement, involving independent clinical rotation and a final skills assessment in health centres, hospitals and other care facilities, which allows students to incorporate professional values, healthcare communication skills, clinical reasoning, clinical management and critical judgement. This also requires students to familiarise themselves with the most common health problems in Medicine, Surgery, Obstetrics and Gynaecology, Paediatrics, Psychiatry and other clinical areas.

Learning outcomes (RA, by the acronym in Spanish):

- Recognise the most common pathologies of the endocrine and metabolic systems: diabetes mellitus, dyslipidaemia, glandular hyper- and hypo-function endocrine syndromes, growth disorders, nutrition and eating disorders, storage disorders and of the important endocrine and metabolic pathologies.
- Diagnose the most common pathologies of the endocrine system: clinical history and physical examination focusing on the endocrine system pathology, suitability and interpretation of the main complementary diagnostic tests (laboratory tests, image tests, anatomical pathology tests, etc.).
- Direct the medico-surgical treatment of the most common diseases of the endocrine system and metabolism diseases.

The following table shows how the skills developed in the subject area match up with the intended learning outcomes:

Skills	Learning outcomes
CB2, CB 5, CG1, CG 2, CG3, CG4, CG5, CG6, CG9, CG 10, CG20, CG21, CG22, CG23, CG24, CG26, CG32, CT9, CT10, CE 3.1.12, CE 5.1.1	Recognise the most common pathologies of the endocrine and metabolic systems: diabetes mellitus, dyslipidaemia, glandular hyper- and hypo-function endocrine syndromes, growth disorders, nutrition and eating disorders, storage disorders and of the important endocrine and metabolic pathologies.
CB3, CB 5, CG1, CG2, CG3, CG4, CG5, CG6, CG13, CG14, CG15, CG 17, CG20, CG21, CG22, CG23, CG24, CG26, CG32, CT1, CT3, CT4, CT5, CT6, CT7, CT8, CT9, CT10, CE 3.2.1, CE 3.2.2, CE 5.1.1	Diagnose the most common pathologies of the endocrine system: clinical history and physical examination focusing on the endocrine system pathology, suitability and interpretation of the main complementary diagnostic tests (laboratory tests, image tests, anatomical pathology tests, etc.).
CB4, CB 5, CG1, CG 2, CG3, CG4, CG5, CG6, CG 12, CG 18, CG19, CG20, CG21, CG22, CG23, CG24, CG26, CG32, CT2, CT4, CT5, CT6,CT7, CT8, CT9, CT10, CE 3.1.12, CE 3.2.1, CE 3.2.2, CE 5.1.1	Direct the medico-surgical treatment of the most common diseases of the endocrine system and metabolism diseases.

4. CONTENTS

Topic	ENDOCRINOLOGY
ENDOCRINOLOGY	
DIABETES	
Topic 1.	Diabetes mellitus. Classification. Diagnosis. DM 1: monogenic diabetes, gestational diabetes and lipodystrophy.
Topic 2.	Type 2 diabetes. Insulin resistance syndrome. Chronic complications of DM (part 1).
Topic 3.	Chronic complications of DM (part 2).
Topic 4.	Acute complications of DM.
Topic 5.	Treatment of DM.
THYROID AND PHOSPHOCALCIC METABOLISM	

Topic 6.	Physiology of the thyroid. Evaluation of thyroid function.
Topic 7.	Hypothyroidism. Hyperthyroidism.
Topic 8.	Thyroiditis.
Topic 9.	Simple goitre. Benign and malignant thyroid neoplasms.
Topic 10.	Hypercalcaemia.
Topic 11.	Hypocalcaeimia.
HYPOTHALAMIC-PITUITARY PATHOLOGY	
Topic 12.	Functional examination of the pituitary gland.
Topic 13.	Hypopituitarism. Non-functioning pituitary tumour.
Topic 14.	Functioning pituitary tumour.
Topic 15.	Pathology of the posterior pituitary.
Topic 16.	Alterations of growth and puberty.
PATHOLOGY OF THE ADRENAL GLANDS	
Topic 17.	Physiology and functional examination of the adrenal glands. Adrenal incidentaloma.
Topic 18.	Congenital adrenal hyperplasia. Hirsutism.
Topic 19.	Adrenal cortex disease. Cushing's syndrome.
Topic 20.	Hypermineralocorticism. Primary hyperaldosteronism.
Topic 21.	Adrenal insufficiency. Addison's disease.
Topic 22.	Adrenal medulla. Feocromocitoma and paragangliomas.
OTHERS	
Topic 23.	Male hypogonadism. Gynaecomastia. Female hypogonadism.
Topic 24.	Polyglandular autoimmune syndrome.
Topic 25.	Lipoprotein metabolism disorder.
Unit 24.	Nutrition and nutritional evaluation.
Topic 27.	Obesity.
Topic 28.	Micronutrients: vitamins and minerals.
Topic 29.	Eating disorders.
Topic 30.	Gastroenteropancreatic neuroendocrine tumours.

5. TEACHING/LEARNING METHODS

The types of teaching/learning methods are as follows:

- Problem-based learning: Presentation of problems, reorganising into small groups, literature analysis, analysis of scientific texts and documents, symposiums and presentations, directed debates, specialised individual and collective tutorials, and reaching a consensus.
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- Case studies and problem solving: approach and solving cases and problems either as an individual or in small groups.
- Specialised seminars: literature research and debate on scientific data in small groups.
- Lectures: classroom presentations by the professor on basic theory, encouraging debate and student participation.
- Case study method: presentation and discussion of clinical cases in small groups.
- Learning in skills workshops and simulation scenarios: practical work with IT programs, anatomical

models, human dissection and standardised patients.

- Experiential learning in supervised clinical placements in the different hospital services: problem-solving in a practical context observing the tutor, being observed by the tutor, or with the tutor's supervision. Students will integrate themselves and participate in the activities performed in the healthcare units. The student activities will be programmed, tutor-assisted and assessed by the tutor.

6. LEARNING ACTIVITIES

The types of learning activities, plus the amount of time spent on each activity, are as follows:

On campus:

Learning activity	Number of hours	Attendance mode
Theory/practical learning activities on-campus.	38h	100
Directed learning activities.	11h	20
Independent working	30h	0
Clinical placements.	88h	100
Tutorials.	6h	100
Knowledge tests.	2h	100

7. ASSESSMENT

The assessment methods, plus their weighting in the final grade for the subject area, are as follows:

On campus:

	Assessment system	Weighting
THEORY (50%)	Continuous assessment	10%
	Final exam	40%
PRACTICAL PART (50%)	Attitude (rubric)	5%
	Clinical practice (rubric)	20%
	ECOE	25%

8. BIBLIOGRAPHY

The reference work for following this subject area is:

Endocrinology:

- Harrison's Principles of Internal Medicine. McGraw-Hill Interamericana. 20th Edition (2018). Access to this digital resource (Universidad Europea de Madrid users)

https://accessmedicine-mhmedicalcom.ezproxy.universidadeuropea.es /book.aspx?bookid=2129

The recommended bibliography is indicated below:

- **PROMIR:**
  - Álvarez Rodríguez S, Lorca Álvaro J, Gómez de Vicente JM, Hevia Palacios V, Martínez Arcos L. PROMIR: Urología 2022-2023, 2ª ed. Madrid: Editorial Médica Panamericana; 2022
  - Tenorio Cañamás MD, Burguera Vion, Gómis Couto A. PROMIR: Nefrología 2022-2023, 2ª ed. Madrid: Editorial Médica Panamericana; 2022

- Reynard J, Brewster S, Biers S. Oxford Handbook of Urology. Oxford University Press, 3rd Edition, 2013.
- Broseta E, Budia A, Burgés JP, Luján S. Urología Práctica. Elsevier, 5a Edición, 2015.