Information about the subject

Degree: Bachelor of Science Degree in Medicine

Faculty: Faculty of Medicine and Health Sciences

Code: 340305 **Name:** Haematology

Credits: 3,00 **ECTS Year:** 3 **Semester:** 2

Module: Human Clinical Training

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

Field of knowledge: Health Science

Department: Medical 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

To achieve an adequate knowledge of the clinical and therapeutic characteristics of the most frequent and serious disorders that affect the blood, the hematopoietic organs. Likewise, they must have basic knowledge of hemorrhagic and thrombotic diathesis and some basic notions of the principles of blood transfusion, and must be able to:
Identify the main deviations from normality in the results of the most important laboratory determinations.Suggest the appropriate diagnostic techniques for the identification of the main hematological problems.Know the clinical and diagnostic characteristics of the main benign and malignant hematological processes.Know the main hemorrhagic and thrombotic diathesis.Know the principles of therapy in Hematology including blood transfusion, chemotherapy treatment and hematopoietic stem cell transplantation.

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	Be able to establish diagnosis, prognosis and treatment by applying principles based on the theory studied.
R2	Formulate hypotheses, collect and critically assess problem-solving information, following the scientific method.
R3	Know the main morphological and functional characteristics of cells, hematopoietic tissues and coagulation mechanisms.
R4	Distinguish the main disorders of hematopoiesis, hematopoietic tissues and hemostasis.
R5	Know the normal values of the most important haematological parameters and their main deviations.
R6	Know how to use and interpret physical scan results and laboratory parameters.
R7	Be able to properly record the information obtained and prepare reports.
R8	Be able to emit a haematological diagnosis.
R9	Know the basics of the different treatments for the management of the most important haematological diseases.
R10	Distinguish in a peripheral blood extension: blood cells, neutrophils, monocyte lymphocytes, eosinophils, basophils, and platelets.
R11	Distinguish out-of-range results in a regular hemostase study and suggest possible causes of parameters. Quick, TTPA, PT and fibrinogen index.
R12	Simulate techniques and identify places where bone marrow aspiration and biopsy are performed in children and adults.
R13	Explore palpable ganglion areas and know how to discern between normal nodes, reactive adenopathy and malignant adenopathy.
R14	Explore the skin and know how to distinguish between petechiae, purple equatosis and hematoma.
R15	Perform at least two medical records in haematological patients suggesting complementary tests to be performed, diagnosis, treatment and prognosis.

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
CE33	Recognizing, diagnosing and guiding the management of the main skin pathologies	x			
CE34	Recognizing, diagnosing and guiding the management of the main diseases of the blood. Normal and pathological pregnancy and delivery. Puerperium. Sexually transmitted diseases	x			
CE35	Recognizing, diagnosing and guiding the management of the main gynecological pathologies. Contraception and fertilization	x			
CE36	Recognizing, diagnosing and guiding the management of the main ophthalmological pathologies	x			
CE37	Knowing tumor disease, diagnosis and management		x		
CE38	Recognizing, diagnosing and guiding the management of the main ear, nose and throat pathologies	x			
CE39	Recognizing, diagnosing and guiding the management of the main cardiocirculatory pathologies	x			
CE40	Recognizing, diagnosing and guiding the management of the main diseases of the digestive system	x			
CE41	Recognizing, diagnosing and guiding the management of major nephrourinary pathologies	x			
CE42	Recognizing, diagnosing and guiding the management of the main pathologies of the locomotor system	x			
CE43	Recognizing, diagnosing and guiding the management of the main pathologies of the respiratory system	x			
CE44	Recognizing, diagnosing and guiding the management of the main pathologies of the endocrine system. Nutritition pathology	x			

CE45	Recognizing, diagnosing and guiding the management of the main pathologies of the central and peripheral nervous system	x	
CE46	Knowing the main infectious agents and their mechanisms of action		x
CE47	Recognizing, diagnosing and guiding the management of the main infectious diseases in the different rgans and systems	x	
CE48	Recognizing, diagnosing and guiding the management of the main inmune systems' pathologies.		x
CE49	Knowing the morphological and functional characteristics of the newborn, child and adolescent. Growth. Premature newborn	x	
CE50	Recognizing, diagnosing and guiding the management of the main pediatric pathologies. Child nutrition. Diagnosis and genetic counseling. Cognitive, emotional and psychosocial development in childhood and adolescence	x	
CE51	Knowing the biological, psychological and social foundations of personality and behavior	x	
CE52	Recognizing, diagnosing and guiding the management of psychiatric disorders. Psychotherapy	x	
CE53	Recognizing, diagnosing and guiding the management of major poisonings. Palliative medicine	x	
CE54	Recognizing the characteristics of the pathology prevalent in the elderly. Family and community medicine: living environment of the sick person, promotion of health at the family and community level	x	
CE55	Recognizing, diagnosing and guiding the management of life-threatening situations	x	
CE56	Knowing how to make a complete anamnesis, patient-centered and oriented to the various pathologies, interpreting its meaning	x	
CE57	Knowing how to do a physical examination by devices and systems, as well as a psychopathological examination, interpreting its meaning	x	
CE58	Knowing how to evaluate the changes of clinical parameters in the different ages. Pregnancy exploration and monitoring	x	
CE59	Establishing an action plan, focused on the needs of the patient and the family and social environment, consistent with the symptoms and signs of the patient		x
CE60	Knowing how to do basic and advanced life support		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	
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
	0,00%	Open questions
R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11	70,00%	Tests
R13, R14, R15	20,00%	Practices
	0,00%	Participation in class
R12	10,00%	Simulations, ECOE
	0,00%	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 M2, M4	R1, R3	24,00	0,96
Seminar and group practices M2	R1, R2, R3	7,00	0,28
Tutoring M4	R2	3,00	0,12
Evaluation M2, M12	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15	3,00	0,12
TOTAL		**37,00**	**1,48**

LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
No attendance M9, M11, M15	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R15	38,00	1,52
TOTAL		**38,00**	**1,52**

Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
Hematopoiesis. Morphology of the blood and hematopoietic organs	Physiology of hematopoiesis
Iron deficiency anemia	Etiology, pathophysiology, clinic, diagnosis and treatment
Anemias due to deficiency of maturational factors.	Etiology, pathophysiology, clinic, diagnosis and treatment
Congenital hemolytic anemias.	Etiology, pathophysiology, clinic, diagnosis and treatment
Acquired hemolytic anemias.	Etiology, pathophysiology, clinic, diagnosis and treatment
Marrow failure.	Etiology, pathophysiology, clinic, diagnosis and treatment
Pathology of the mononuclear phagocytic system.	Etiology, pathophysiology, clinic, diagnosis and treatment
Acute myeloblastic leukemia	Etiology, pathophysiology, clinic, diagnosis and treatment
Acute lymphoblastic leukemia	Etiology, classification, clinic, diagnosis and treatment
Chronic myeloproliferative diseases.	Etiology, pathophysiology, clinic, diagnosis and treatment
Chronic lymphoproliferative syndromes.	Etiology, pathophysiology, clinic, diagnosis and treatment
Non-Hodgkin lymphomas	Etiology, pathophysiology, clinic, diagnosis and treatment
LinfomasHodgkin	Etiology, pathophysiology, clinic, diagnosis and treatment
Monoclonal gammopathy.	Etiology, pathophysiology, clinic, diagnosis and treatment

Blood transfusion and Immunohematology.	Types and identification of blood groups. Types of blood products. Indications for transfusion of blood products. Most important complications associated with transfusion and their management
Transplantation of hematopoietic progenitors.	Types, indications, characteristics, complications
Physiology and exploration of Haemostasis.	Primary hemostasis (platelet). Secondary hemostasis and pathways of plasmatic coagulation. Fibrinolysis. laboratory study
Platelet pathology.	Congenital and acquired thrombopathies. Thrombocytopenia. Differential diagnosis, clinic and treatment
Bleeding diathesis.	Congenital and acquired coagulopathies. Hemophilia and von Willebrand disease. Differential diagnosis, clinic and treatment
Hypercoagulability.	Congenital and acquired thrombophilia. Venous thromboembolic disease. Types and characteristics of anticoagulant drugs

Temporary organization of learning:

Block of content	Number of sessions	Hours
Hematopoiesis. Morphology of the blood and hematopoietic organs	1,00	2,00
Iron deficiency anemia	1,00	2,00
Anemias due to deficiency of maturational factors.	1,00	2,00
Congenital hemolytic anemias.	1,00	2,00
Acquired hemolytic anemias.	1,00	2,00
Marrow failure.	0,50	1,00
Pathology of the mononuclear phagocytic system.	0,50	1,00
Acute myeloblastic leukemia	0,50	1,00
Acute lymphoblastic leukemia	1,00	2,00
Chronic myeloproliferative diseases.	1,00	2,00
Chronic lymphoproliferative syndromes.	1,00	2,00
Non-Hodgkin lymphomas	1,50	3,00
LinfomasHodgkin	1,00	2,00
Monoclonal gammopathy.	0,50	1,00

Blood transfusion and Immunohematology.	1,00	2,00
Transplantation of hematopoietic progenitors.	1,00	2,00
Physiology and exploration of Haemostasis.	1,00	2,00
Platelet pathology.	1,00	2,00
Bleeding diathesis.	1,00	2,00
Hypercoagulability.	1,00	2,00

References

SANS SABRAFEN J, BESSES C, VIVES JL. Hematología Clínica. 5ª Edición. Ed. Elsevier. Madrid 2006.
SANZ MA, CARRERAS E. Manual práctico de Hematología Clínica. 4ª edición Ed. Antares. Barcelona, 2012.
FAUCI AS, BRAUNWALD E, KASPER DL, et al. Harrison's Principles of Internal Medicine. 18ª Edición Edit. Mc Graw Hill Medical. 2012.
SAN MIGUEL JF, SÁNCHEZ GUIJO FM. Hematología. Manual básico razonado. 3ª Edición. Edit. Elsevier 2009.

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: