Information about the subject

Degree: Bachelor of Science Degree in Medicine

Faculty: Faculty of Medicine and Health Sciences

Code: 340504 **Name:** Laboratory of Diagnostic Tests

Credits: 3,00 **ECTS Year:** 5 **Semester:** 1

Module: Diagnostic and therapeutical procedures.

Subject Matter: Diagnostic procedures **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:

345A	Manuel Tejeda Adell **(Responsible Lecturer)**	manuel.tejeda@ucv.es
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Module organization

Diagnostic and therapeutical procedures.

Subject Matter	ECTS	Subject	ECTS	Year/semester
Diagnostic procedures	39,00	Basic Immunology	3,00	1/2
		Functional Assessment	6,00	This elective is not offered in the academic year 24/25
		Genetics	3,00	1/1
		Introduction to Medicine	3,00	1/2
		Laboratory of Diagnostic Tests	3,00	5/1
		Medical Microbiology and Parasitology	6,00	3/1
		Pathological Anatomy	6,00	2/2
		Physiological Records and Functional Tests	3,00	2/2
		Radiodiagnostic and Imaging Techniques	6,00	3/1
Therapeutic procedure	27,00	Anaesthesia and Resuscitation	3,00	5/1
		Biotechnology	6,00	This elective is not offered in the academic year 24/25
		General and Special Pharmacology	9,00	3/2

Therapeutic procedure	General Procedures of Intervention	6,00	This elective is not offered in the academic year 24/25
	Rehabilitation and Physical Therapy	3,00	4/2

Recommended knowledge

General Pathology
Cardiology and cardiovascular surgery
Pneumology and thoracic surgery
Nephrology
Neurology and neurosurgery

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	Apply the concepts learned in the subject to the resolution of simple clinical cases
R2	Know the basic radiological semiology of fundamental injuries.
R3	Know the main findings with the different imaging techniques in large clinical syndromes.
R4	Knowing and interpreting the main diagnostic instruments in acute respiratory pathology
R5	Know and apply the main therapeutic instruments in acute respiratory pathology
R6	Knoqing and interpret the main diagnostic instruments in acute cardiovascular pathology
R7	Know and apply the main therapeutic instruments in acute cardiovascular pathology
R8	Knowing and interpreting the main diagnostic instruments in acute infectious pathology
R9	Know and apply the main therapeutic instruments in infectious pathology: antibiotherapy
R10	Gaining basic knowledge about artificial nutrition
R11	Acquire the basic knowledge for insulin management in acute pathology
R12	Know and interpret the main diagnostic instruments in acute digestive pathology
R13	Know and apply the main therapeutic instruments in acute digestive pathology
R14	Know and interpret the main diagnostic instruments in hydroelectrolytic balance pathology and acute acid/base
R15	Knowing and interpreting the main diagnostic instruments in acute kidney disease

R16	Know and apply the main therapeutic instruments in acute renal pathology
R17	Know and interpret the main diagnostic instruments in acute neurological pathology
R18	Know and apply the main therapeutic instruments in acute neurological pathology
R19	Know and interpret the main diagnostic instruments in acute haematological pathology
R20	Knowing and managing the main therapeutic instruments in acute haematological pathology
R21	Know other diagnostic and therapeutic instruments common in the clinical practice of the acute process.
R22	Search for bibliographic information from different sources and know how to analyze it in a critical and constructive spirit.
R23	Know how to explore and assess vital signs and clinical signs.
R24	Understanding the mechanisms of action of antimicrobial drugs, as well as tests for determining bacterial susceptibility to antimicrobial drugs and the mechanisms of bacterial resistance to antimicrobials.
R25	Understanding the mechanisms of action of antimicrobial drugs, as well as tests for determining bacterial susceptibility to antimicrobial drugs and the mechanisms of bacterial resistance to antimicrobials.
R26	Meet the microbial spectrum in the etiology of bloodstream infections, respiratory tract infections, central nervous system, the genitourinary tract, gastrointestinal tract, and skin infections and soft tissue.
R27	Know how to ask for the correct study if a viral, fungal, parasitic aerobic, anaerobic or mycobacterial infection is suspected.
R28	Select and obtain suitable clinical samples for diagnosis of infectious diseases by bacteria, parasites, fungi and viruses.
R29	Recognize what antimicrobial to use following the results of sensitivity studies.
R30	Interpret the results of microbiological studies for bacteria, viruses, fungi and parasites. Determine which pathogens can potentially contaminate sterile samples.

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
CG1	Recognizing the essential elements of the medical profession, including ethical principles, legal responsibilities, and patient-centered professional exercise			x	
CG2	Understanding the importance of such principles for the benefit of the patient, society and profession, with special attention to professional secrecy			x	
CG3	Knowing how to apply the principle of social justice to professional practice and understanding the ethical implications of health in a changing global context			x	

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
CG12	Understanding the basis of action, indications and efficacy of therapeutic interventions, based on available scientific evidence				x
CG15	Having the ability to make an initial diagnostic judgment and establish a reasoned diagnostic strategy				x
CG18	Indicating the most appropriate therapeutics of the most prevalent and chronic acute processes, as well as terminally ill patients				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		
CG30	Basic knowledge of the National Health System and health legislation		x		
CG32	Knowing how to use information and communication technologies in clinical, therapeutic, preventive and research activities		x		
CG33	Maintaining and using records with patient information for further analysis, preserving data confidentiality		x		

SPECIFIC		Weighting			
		1	2	3	4
CE61	Assessing the risk-benefit ratio of diagnostic and therapeutic procedures				x
CE62	Knowing the indications of biochemical, haematological, immunological, microbiological, anatomopathological and imaging tests				x

CE63	Knowing the characteristics of tissues in different situations of injury, adaptation and cell death. Inflammation. Cell growth disturbances. Pathological anatomy of the different devices and systems. Biochemical, cytogenetic and molecular biology markers applied to clinical diagnosis				x
CE64	Knowing the basics of microbiology and parasitology			x	
CE65	Knowing the main techniques of microbiological and parasitological diagnosis and interpret the results				x
CE66	Knowing the basics of the interaction of radiation with the human organism. Radiological image. Basic radiological semiology of the different devices and systems				x
CE67	Learning about other diagnostic imaging techniques			x	
CE68	Assessing the indications and contraindications of radiological studies			x	
CE69	Having the ability to apply radiological protection criteria in diagnostic and therapeutic procedures with ionizing radiation		x		
CE72	Knowing the main indications of electrophysiological techniques (ECG, EEG, EMG, and others)			x	
CE73	Knowing the pathophysiology of wounds (including burns, frostbites and other types of wounds). Healing. Surgical hemorrhage and thromboembolic prophylaxis	x			
CE77	Knowing how to obtain and process a biological sample for study using the different diagnostic procedures				x
CE78	Knowing how to interpret the results of the laboratory's diagnostic tests				x

TRANSVERSAL		Weighting			
		1	2	3	4
CT1	Analytical and synthesis capacity				x
CT2	Planification and organization capacity			x	
CT6	Manage information capacity				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
CT16	Individual learning			x
CT18	Creativity			x
CT19	Leadership		x	
CT24	Ability to take responsibility			x
CT25	Autocriticism capacity			x
CT26	Knowing how to value personal action and know your own skills and limitations			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, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30	70,00%	Tests
R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30	15,00%	Practices
	0,00%	Participation in class
R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30	15,00%	Practice exam

Observations

The multiple choice test will be based on the theoretical sessions taught
The practices will be evaluated according to the contents of the seminars
The practical exam will be based on clinical cases that will combine theoretical and practical knowledge.
To pass the exam you will need to obtain a 5 out of 10 in the global evaluation of the three elements that make up the exam

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
M4	Content presentations by teacher
M5	Knowledges and skills explanation
M6	Laboratory practices
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

IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
Theory class M5	R1, R5, R6, R7, R8, R9, R10, R11, R12, R13, R15, R16, R17, R18, R19, R20, R21, R24, R25, R26, R27, R28, R29, R30	24,00	0,96
Seminar and group practices M2	R3, R6, R14, R21	6,00	0,24
Tutoring M5	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30	4,00	0,16
Evaluation M2	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30	4,00	0,16
TOTAL		**38,00**	**1,52**

LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
No attendance M2, M4, M5	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30	37,00	1,48
TOTAL		**37,00**	**1,48**

Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
Acute respiratory disease	Diagnostic and therapeutic instruments in acute respiratory disease
Acute cardiohemodynamic disease	Diagnostic and therapeutic instruments in acute cardiohemodynamic pathology
Acute infectious disease	Diagnostic and therapeutic instruments in acute infectious disease
Acute hematological pathology	Diagnostic and therapeutic instruments in acute hematological pathology
Acute neurological pathology	Diagnostic and therapeutic instruments in acute neurological pathology
Artificial nutrition and insulin therapy	Management of artificial nutrition and insulin therapy in the acute patient
Acute kidney disease	Diagnostic and therapeutic instruments in acute kidney disease
EKG workshop	Advanced ECG systematic reading workshops
Acute acid-base disturbances	Diagnostic instruments in acute acid-base pathologies
Acute hydroelectrolytic disturbances	Diagnostic instruments in acute hydroelectrolytic pathologies

Temporary organization of learning:

Block of content	Number of sessions	Hours
Acute respiratory disease	2,50	5,00
Acute cardiohemodynamic disease	4,00	8,00
Acute infectious disease	3,00	6,00
Acute hematological pathology	2,00	4,00
Acute neurological pathology	1,25	2,50
Artificial nutrition and insulin therapy	1,25	2,50
Acute kidney disease	1,25	2,50
EKG workshop	1,25	2,50
Acute acid-base disturbances	1,25	2,50
Acute hydroelectrolytic disturbances	1,25	2,50

References

Cuidados Intensivos. Atención Integral del Paciente Crítico. Editorial Panamericana
Terapia Intensiva. Editorial Panamericana
Manual de medicina intensiva. Elsevier.
Técnicas en urgencias, emergencias y UCI. Formación Alcalá.
Cuidado integral del paciente crítico. Elsevier. Masson.
El paciente agudo grave : instrumentos diagnósticos y terapéuticos. Editorial Elsevier Masson

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
X	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: