

**Integrated Learning in Medicine V**

Code: 103637  
ECTS Credits: 3

| Degree           | Type | Year | Semester |
|------------------|------|------|----------|
| 2502442 Medicine | OB   | 5    | 0        |

### Contact

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### Use of Languages

Principal working language: catalan (cat)  
Some groups entirely in English: No  
Some groups entirely in Catalan: No  
Some groups entirely in Spanish: No

### Teachers

Vicente García-Patos Briones  
Carlos Rodrigo Gonzalo de Liria  
Jaime Almirall Daly

### Prerequisites

It is advisable that the student has achieved a basic knowledge in clinic physiopathology and semiology, structural pathology, ancillary exploration techniques, medical image, clinical and microbiological lab, as well as pharmacology and therapeutic principles of the different human apparatus and systems.

It is recommendable that the student has achieved a basic knowledge in biostatistics and epidemiology.

It is convenient to have enough knowledge in physiopathology and of the psychological basis of health and disease, as well as an adequate level of English and interpersonal communication and social skills.

### Objectives and Contextualisation

This unit of study is to be taken over the second quarter of the 5th Course of the Medicine Degree. As the rest of AIMs, it is a transversal curriculum that provides trainees in Medicine with an opportunity to develop some basic competences directed to the professional activity and scientific reasoning. It is intended to contribute to a comprehensive formation of the medical knowledge, so that the biological and pathophysiological basis of medicine and clinical disciplines so that these are not considered isolated subjects without any continuity. This unit of study will foster development of knowledge, skills and attitudes necessary to understand, evaluate and apply a wide range of diagnostic and therapeutic interventions aimed to the professional activity and scientific reasoning for graduates in Medicine: evidence-based argumentation, ability to ask the right questions, analysis and interpretation of data and application of the pathophysiological principles in understanding different diseases. This unit also promotes self-learning knowledge, teamwork, oral and writing communication, search and reading of research information, including new information technologies.

Students will learn a variety of skills to solve clinical cases, the content of which will vary in each academic course. The clinical cases will be worked out by a reduced team of students and guided by a tutor responsible of the different contents of the course. The subject will be developed on the basis of problem-based learning

and combine tutorial sessions with student's autonomous work. In the presentation of each case session, there will be an description of the characteristics of the work to be made. Students will have to attend the scheduled tutorial sessions and consult all the sources they shall consider that are needed to solve the clinical case problem. In the closing session, the proposed solution of the clinical case problem will be presented by each reduced group of students.

The generalformative goals of the unit of study are:

- Learn basic abilities in clinical medicine
- Integrate the knowledge and contents worked during the academic course in the rest of the core subjects of the 5th and previous courses of the degree of Medicine
- Apply the obtained knowledge in the simulated clinical cases to real life
- Develop syndromic and clinical diagnostic abilities as well as abilities on therapeutic procedures
- Develop generic competences on self-learning: temporal organization of autonomous work, teamwork, conduct comprehensive search of information, including new information technologies, and critically appraise the information.
- Acquire the ability to produce a summary of the research and apply this knowledge to present biomedical works
  
- At the conclusion of this unit of study, students should be able to:
  - Communicate in a clear way both orally and written, with other professionals and media
  - Demonstrate basic research abilities
  - Demonstrate an understanding of the structure and function of the human body in illness and in the different stages of life and in both sexes
  - Demonstrate an understanding of the importance and limits of the scientific knowledge in the study, prevention and disease management
  - Demonstrate an understanding of the consequences of disease on the structure and function of the human body
  - Demonstrate an understanding of the basic statistic methods used in biomedical and clinical studies and on the use of the modern technology analysis tools
  - Demonstrate, in professional activity, a critical, creative and research-oriented point of view
  - Identify and summarise biological, cultural and social contributors to the patient's illness and recovery, construct a differential diagnosis for patients presenting with different diseases evaluating the results of the anamnesis and physical exploration, as well as the subsequent results of the ancillary tests, establish a reasonable action strategy and implement comprehensive management plans
  - Teach and communicate to other professional groups the knowledge and technics learned
  - Listen with special attention, obtain and summarize pertinent information provided by the patients regarding their symptoms and understand and apply the content of this information
  - Establish good interpersonal communication skills to address empathically and efficiently to patients, relatives, caregivers, companions, physicians and other health professionals
  - Formulate hypothesis, collect and critically evaluate the information to solve problems following scientific methods
  - Indicate the more appropriate techniques and basic-diagnostic procedures and analyse and understand the results to better understand the nature of the problem
  - Indicate the most appropriate therapy for prevalent acute and chronic processes, as well as for terminally ill patients
  - Maintain and update their professional competence, paying special attention to self-learning of new knowledge and techniques and to be motivated for quality
  - Obtain and elaborate a structured clinical history containing all the relevant information, focused to the patient, and taking into account all age groups, sex, cultural, social and ethnic factors
  - Organize and properly plan the workload and timing in the professional activities
  - Carry out a complete and systematic general physical and mental exam, appropriate to the age and sex of the patient
  - Appreciate as professional values excellence, altruism, sense of duty, compassion, empathy, honesty, integrity and compromise with scientific methods
  - Identify own limitations and admit other opinions to modify, if necessary, the initial opinion

- Identify the essential elements of the medical profession as a result of an evolutive, scientific and sociocultural process, including the ethical principles, legal responsibilities and professional exercise focused to patients.
- Identify their role in multi professional teams, assuming the leadership when appropriate, both for health care and interventions for the promotion of health
- Identify, understand and apply the role of the physician as manager of public resources.
- Write, in a comprehensive way and understandable for third parties clinical histories, medical reports and other medical registers
- Use information and communication technologies in the professional activity
- Evaluate in a critical way and use the clinical and biomedical information resources to obtain, organize, understand and communicate the scientific and medical information

## Competences

- Communicate clearly, orally and in writing, with other professionals and the media.
- Convey knowledge and techniques to professionals working in other fields.
- Critically assess and use clinical and biomedical information sources to obtain, organise, interpret and present information on science and health.
- Demonstrate basic research skills.
- Demonstrate understanding of basic statistical methodologies used in biomedical and clinical studies and use the analytic tools of modern computational technology.
- Demonstrate understanding of the importance and the limitations of scientific thought to the study, prevention and management of diseases.
- Demonstrate understanding of the manifestations of the illness in the structure and function of the human body.
- Demonstrate understanding of the structure and function of the human organism in illness, at different stages in life and in both sexes.
- Demonstrate, in professional activity, a perspective that is critical, creative and research-oriented.
- Empathise and establish efficient interpersonal communication with patients, family-members, accompanying persons, doctors and other healthcare professionals.
- Engage in professional practice with respect for patients' autonomy, beliefs and culture, and for other healthcare professionals, showing an aptitude for teamwork.
- Establish a diagnostic approach and a well thought-out strategy for action, taking account of the results of the anamnesis and the physical examination, and the results of the appropriate complementary tests carried out subsequently.
- Formulate hypotheses and compile and critically assess information for problem-solving, using the scientific method.
- Indicate the basic diagnosis techniques and procedures and analyse and interpret the results so as to better pinpoint the nature of the problems.
- Indicate the most suitable treatment for the most prevalent acute and chronic processes, and for the terminally ill.
- Listen carefully, obtain and synthesise relevant information on patients' problems, and understand this information.
- Maintain and sharpen one's professional competence, in particular by independently learning new material and techniques and by focusing on quality.
- Obtain and prepare a patient record that contains all important information and is structured and patient-centred, taking into account all age and gender groups and cultural, social and ethnic factors.
- Organise and plan time and workload in professional activity.
- Perform a general and a system-by-system physical examination appropriate to the patient's age and sex, in complete and systematic way, and a mental evaluation.
- Recognise the basic elements of the medical profession as the result of an evolving, scientific, social and cultural process, including ethical principles, legal responsibilities and patient-oriented professional practice.
- Recognise the professional values of excellence, altruism, sense of duty, compassion, empathy, honesty, integrity and commitment to scientific methods.
- Recognise, understand and apply the doctor's role as a manager of public resources.

- Recognize one's role in multi-professional teams, assuming leadership where appropriate, both for healthcare provision and for promoting health.
- Use information and communication technologies in professional practice.
- Write patient records and other medical documents that can be understood by third parties.

## Learning Outcomes

1. Accept other viewpoints (lecturers, colleagues, etc.) regarding the problem or topic at hand.
2. Acquire the principles and values of good medical practice, both in health and in illness.
3. Adopt values of solidarity and service to others, both when dealing with patients and with the general public.
4. Apply analytic tests in accordance with their cost efficiency.
5. Appraise patients' expectations in order to respect them and act appropriately.
6. Assess the efficiency of the main therapeutic interventions.
7. Assess the importance of every sign and symptom in the current illness.
8. Assess the need, indications, contraindications, chronology, risk, benefits and costs of each examination.
9. Assess the relationship between efficacy and risk in the main therapeutic interventions.
10. Assess the semiological value of laboratory tests used in the most common human pathologies.
11. Be self-critical and reflect on one's own learning.
12. Calculate the cost efficiency of analytic tests.
13. Communicate clearly, orally and in writing, with other professionals and the media.
14. Compare one's own opinions with those of colleagues and other healthcare professionals as a basis for teamwork.
15. Conduct the interview correctly to obtain significant clinical data.
16. Convey knowledge and techniques to professionals working in other fields.
17. Correctly apply statistical techniques to obtain benchmark values and compare them to the results of analytic tests on patients.
18. Correctly record the information obtained in interviews with patients.
19. Critically assess the results of complementary examinations, taking their limitations into account.
20. Demonstrate basic research skills.
21. Demonstrate, in professional activity, a perspective that is critical, creative and research-oriented.
22. Describe the elements that should be considered when determining the reasons for a consultation and those of the patient's therapeutic itinerary.
23. Describe the organisation, characteristics and performance of the Spanish health system.
24. Describe the person as a multidimensional being in which the interplay of biological, psychological, social, environmental and ethical factors determines and alters the states of health and disease and their manifestations.
25. Distinguish normality from pathological alterations on performing a physical examination.
26. Distinguish situations that require hospitalisation and those that require intensive care.
27. Establish a method for complementary examinations, in accordance with the standard process and the diagnostic expectations.
28. Establish a therapeutic action plan considering the needs of patients and their family and social environment, and involving all members of the healthcare team.
29. Explain ethical, legal and technical features and those of confidentiality related to patient documentation.
30. Explain the mechanisms by which illness affects the different systems of the human body at different stages in life and in both sexes.
31. Formulate hypotheses and compile and critically assess information for problem-solving, using the scientific method.
32. Gather meaningful psychosocial data.
33. Gather, choose and record important information patient supplied by patients and accompanying persons.
34. Identify patients' social and health needs.
35. Identify serious clinical situations.
36. Identify sources of information on analytic tests for patients and professionals and critically evaluate their content.

37. Identify symptoms of anxiety, depression, psychosis, toxics consumption, delirium and cognitive deterioration.
38. Identify the basic principles of legislation on health and the right to health.
39. Identify the most efficient analytic tests for prevention, diagnosis and control of treatment for the most common human pathologies.
40. Identify the physical, chemical, environmental, psychological, social and occupational and carcinogenic factors, and the factors associated with food habits and drug use, that determine the development of the disease.
41. Identify type, evolution and limitations in chronic diseases, their possible treatments and prevention of complications.
42. Indicate and interpret the basic techniques and procedures for laboratory diagnosis, diagnostic imaging and others.
43. Indicate suitable therapeutic interventions for the main health problems.
44. Inform on the results of analytic tests.
45. Interpret population parameters of individual risks appropriately.
46. Involve the family in patient healthcare.
47. Maintain and sharpen one's professional competence, in particular by independently learning new material and techniques and by focusing on quality.
48. Obtain, in an appropriate way, clinical samples needed for laboratory tests.
49. Order signs and symptoms to perform a differential syndromic diagnosis.
50. Organise and plan time and workload in professional activity.
51. Summarise and order information on the problems of the sick.
52. Use appropriate statistical techniques to study the semiological value of analytic tests.
53. Use biomedical databases.
54. Use information and communication technologies in professional practice.

## Content

Five clinical cases are prepared from the subjects and contents of Module 3 (human clinical training):

- MIC IV (neurology, endocrinology, infectious diseases)
- Pediatrics
- Clinical Dermatology

In the solution of the cases might intervene (when the case so requires) some of the subjects of module 4 and module 2:

Subjects of Module 4. Diagnostic and therapeutic procedures:

- Medical microbiology and parasitology
- Clinical radiology (imaging)
- Structural and molecular pathology
- General Pharmacology
- Clinical Pharmacology
- Medical Immunology

Subjects of Module 2. Social medicine, communication skills and initiation to research:

- Preventive Medicine and Public Health
- Legal medicine and Toxicology

Distributive blocks:

Presentation and resolution by the students of 5 reference cases of clinical pathology

Case 1 to 5: to be defined

## Methodology

This guide describes the framework, contents, methodology and general rules of the unit of study, in accordance with the current curriculum. The final organization of the subject with respect to clinical cases, number and size of groups, distribution in the calendar and dates of examinations, will be made explicit through the web pages and in the first day of teaching by the professor responsible for the subject in the HDU.

For this course, the professors appointed by the Departments as responsible for the subject at the Faculty and the UDH level are:

Department(s) responsible(s): Multidepartment

Responsible at Faculty:

Responsibles at UDH:

UD Vall Hebrón: Vicente Garcia-Patos Briones [vgarcia@vhebron.net](mailto:vgarcia@vhebron.net)

UD Trias i Pujol: Carlos Rodrigo Gonzalo de Liria [carlos.rodrigo@uab.cat](mailto:carlos.rodrigo@uab.cat)

UD Parc Taulí: Lluís Falgueras López [lfalgueras@tauli.cat](mailto:lfalgueras@tauli.cat)

UD Sant Pau: Jaume Kulisevsky [jkulisevsky@santpau.cat](mailto:jkulisevsky@santpau.cat)

## TUTORS AND SESSIONS

### 1. Tutors

A case tutor for each of the subjects and / or contents of module 3 that intervene in clinical cases, which will be responsible for cases, presentation, closure and specific tutorials.

### Module 3: Human Clinical Training

#### 1. Sessions

Total activity: 3 credits ECTS = 75 hours

Autonomous activities (55%;41.25 hours): Personal study, cases preparation and presentations

Directed activities: 40%, 30 hours (5 cases; each case = 6 hours, in four sessions).

Evaluation: 5%, 3.75 hours

#### Type of Sessions

Sessions 1 and 4 (TE typology): Initial presentation and final solution of the 5 cases 10 hours (Initial and final sessions 5h+5h)

Sessions 2,3. Clinical cases seminars (typology SCC); 20 hours distributed in two blocks of sessions: problem solving sessions, supervision of simulated cases prepared and preparation and presentation; 10 h (2 per case, allows consecutive tutors).

1. Session 2 (typology SCC); documentation sessions; block of diagnostic and therapeutic procedures and social medicine, communication skills and initiation to research: 10 h (2 h per case, allows consecutive tutors).
2. Session 3 (typology SCC); documentation sessions; blocks 4 and 2. Problem solving sessions, supervision of the prepared simulated cases and preparation and presentation; 10 h (2 per case, allows consecutive tutors).

All students have to know and participate more or less directly in the solution of all cases. The knowledge acquired and the participation and presentation of the solutions will be the basis for the evaluation of the subject.

The total class group is divided into the corresponding groups of students of each case. In the presentation session (session 1), directed by the tutor in charge of the case, assists the entire class group, the case is presented and the group of students working in the case is assigned. These groups will participate directly in the solution of each case, in the documentation and problem-solving sessions (sessions 2-3), directed by the tutors of each subject involved in the case. In these sessions, the rest of the students of the class also participate as listeners, so that they can also have direct access to the documentation and attend the discussion of problems in each case.

In the last session of the case (session 4: 'the solution session'), directed by the tutor responsible for the case, the group of students to whom the case has been assigned present the solution to the entire class group. In this way, all students have access to the discussion and final solution and can acquire properly the essential knowledge for the final evaluation, which includes all cases.

Example of temporary distribution

Week 1. Presentation. Typology TE; group of tuition

Tutor responsible of the case. Case presentation, DD, methodology, referent tutors, sessions to follow.

Case 1 Case 2 Case 3 Case 4 Case 5

1h 1h 1h 1h 1h

Week 2. Documentation and problem solving. SCC typology programmed in the classroom of the entire class (tuition) group. All class attends, the 'case group' work the assigned case.

Tutors block PTD. Documentation, problem solving and tutoring of the specific subjects of the case.

Case 1 Case 2 Case 3 Case 4 Case 5

2h (3x40min)\* 2h (3x40min)\* 2h (3x40min)\* 2h (3x40min) 2h (3x40min)\*

\* It is possible to program 2,3 or 4 consecutive sessions, depending on the number of referent tutors that is appropriate for each case (120 min = 2 x 60, 3 x 40, 4 x 30 min)

Week 3. Problem solving and presentation supervision.

SCC typology programmed in the classroom of the registration group. Registration group attends, members of the case group work.

PTD block tutors and case tutor. Solution of problems and tutorial of the presentation and solution of the case.

Case 1 Case 2 Case 3 Case 4 Case 5

2h (3x40min)\* 2h (3x40min)\* 2h (3x40min)\* 2h (3x40min) 2h (3x40min)\*

\* It is possible to program 2,3 or 4 consecutive sessions, depending on the number of referent tutors that is appropriate for each case (120 min = 2 x 60, 3 x 40, 4 x 30 min)

Week 4. Presentation and solution of the case. Typology TE; registration group

Tutor responsible for the case: Presentation of the case by the students. Case and presentation evaluation

Case 1 Case 2 Case 3 Case 4 Case 5

1h 1h 1h 1h 1h

Total case 1: Total case 2: Total case 3: Total case 4: Total case 5:

6hours 6hours 6hours 6hours 6hours

## Activities

| Title                                    | Hours | ECTS | Learning Outcomes  |
|--|-------|------|--|
| Type: Directed                           |       |      |  |
| Contents given as oral lectures (Theory) | 10    | 0.4  | 1, 4, 14, 22, 23, 24, 25, 26, 28, 27, 29, 11, 41, 40, 30, 38, 37, 36, 39, 35, 42, 43, 47, 48, 49, 50, 15, 32, 33, 51, 53, 19, 10, 6, 8, 9, 7   |
| Clinical case seminars (SCC)             | 20    | 0.8  | 1, 2, 17, 4, 3, 12, 13, 14, 20, 21, 22, 24, 25, 26, 16, 28, 27, 11, 31, 40, 30, 37, 36, 34, 39, 35, 46, 42, 43, 44, 45, 47, 48, 49, 50, 15, 32, 33, 18, 51, 53, 54, 52, 19, 10, 8, 9, 7, 5 |
| Type: Autonomous                         |       |      |  |
| Self-study                               | 41.25 | 1.65 | 47, 50, 54   |

## Assessment

Evaluation activities (5% = 3,75 hours)

Evaluation of the presentation and discussion of the clinical cases 2.5 hours (150 min = 30 x 5 cases, is made to the presentation session). Multiple choice exam 1.25 hours.

Each student will participate in the presentation of a case and will respond to a 50-question test that will include questions of all cases worked during the course and presented in class.

1. Continuous evaluation: report of the tutor of the case 10% of the grade (5% attendance, 5% participation in the sessions)
2. Presentation of cases: 30% of the grade (15% presentation, 15% content)
3. Multiple answers test: 60% of the final grade. Test of 50 questions of all the AIM cases (approximately 10 questions per case), with 5 possible answers and a valid one. Each question with an incorrect answer subtracts 0.25n points.

Final score

Weighted sum of the continuous evaluation (10%), presentation of cases (30%) and result of the multiple-choice test (60%)

Expression: Numerical note with a decimal, from 0 to 10. Qualitative qualification: Suspense, Approved, Remarkable, Excellent, MH

Exam review system

The review of the exams will be done individually with the student, upon written request within the established deadlines.

Presentation and discussion of the case

The presentation will be shared among all the students of the presentation group, the scheduled day and in an equivalent presentation time. The case will be presented to the whole class (registration group), following a similar scheme and for a total approximate time of about 40 minutes:

1. Summary of the case
2. Differential diagnosis

3. Hypothesis and plan to follow
4. Other explorations indicated
5. Indicated Diagnostic test and risk/benefit
6. Final Diagnostic
7. Treatment and prognosis

Students who have not passed the subject through partial exams and the day of the final exam are not submitted to the examination of the parts not passed, will be rated as 'NOT EVALUABLE'.

A recovery exam will be scheduled for students who do not pass the contents of the subject with a format to be determined.

## Assessment Activities

| Title   | Weighting | Hours | ECTS | Learning Outcomes   |
|---|-----------|-------|------|---|
| Attendance and active participation in class and seminars | 20%       | 0     | 0    | 4, 14, 25, 26, 28, 11, 35, 48, 49, 15, 32, 53   |
| Evaluation through case studies and problem solving       | 30%       | 2     | 0.08 | 1, 2, 17, 4, 3, 12, 13, 14, 20, 21, 22, 24, 25, 26, 16, 28, 27, 11, 31, 40, 30, 37, 36, 34, 39, 35, 46, 42, 43, 44, 45, 47, 48, 49, 50, 15, 32, 33, 18, 51, 53, 54, 52, 19, 10, 6, 8, 9, 7, 5 |
| Written evaluation: Objective tests                       | 50%       | 1.75  | 0.07 | 22, 23, 24, 28, 29, 11, 41, 40, 30, 38, 43, 49, 51, 19, 10, 6, 9, 7   |

## Bibliography

Consult the specific bibliography of the teaching guides of the different subjects of the fifth year.