

**Medicine and Surgery II**

Code: 102944  
ECTS Credits: 13.5

| Degree           | Type | Year | Semester |
|------------------|------|------|----------|
| 2502442 Medicine | OB   | 4    | 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**

Jaume Fernández-Llamazares Rodríguez  
Juan Genescà Ferrer  
Jorge Sierra Gil  
Christian Domingo Ribas  
Sergi Bellmunt Montoya

**Prerequisites**

In order to take this subject, it is recommended that the students should previously have studied the pathophysiology of cardiovascular system, respiratory system and blood and lymphatic system. Additional knowledge of anatomy, genetics, molecular biology and pharmacology is also recommendable. Knowledge of psychological bases of health status and disease, and adequate knowledge of communication and ethics is also necessary.

The student will preserve the confidentiality and the professional secret and will maintain an ethical attitude in all the activities of knowledge

**Objectives and Contextualisation**

Hematology:

The students will reach the adequate knowledge of the diseases of blood and hematopoietic organs and will learn to interpret the hematologic abnormalities due to non-hematologic diseases.

The hematologic diseases, their classification, risk factors and prevention, clinical picture and laboratory diagnosis, treatment (including stem cell transplantation and immunotherapy/cell therapy) picture, the disease of the hemostatic system, the transfusion of blood and derivatives and the diseases of the spleen.

Cardiology:

The students will achieve adequate knowledge of the pathophysiology of the diseases of heart and great vessels. The student will learn to make a differential diagnosis using the adequate complementary tools (electrocardiogram, chest X ray film, echocardiogram, CT scan, MRI, and biochemical markers, among others)

The diseases of the cardiovascular system, their risk factors and prevention, the pathophysiology and clinical picture of the diseases of myocardium, cardiac valves, pericardium, aorta and venous and lymphatic system. The principles and clinical use of diagnostic procedures and techniques used in Cardiology and cardiovascular surgery, the adequate treatment (medical, surgical or instrumental) and the rehabilitation procedures of patients with cardiovascular diseases.

Pneumology:

The students will achieve adequate knowledge of respiratory diseases (congenital, acquired, due to dysfunction, toxic drugs, infections, allergy, occupational, ambient, accidental inhalation, neoplastic, traumatism or of unknown origin), their clinical picture, risk factors and prevention, the diagnostic techniques and procedures, their medical, surgical (including the lung transplant) or instrumental therapy, as well as the rehabilitation procedures.

## Competences

- Demonstrate understanding of the manifestations of the illness in the structure and function of the human body.
- 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.
- Give the patient and/or accompanying persons the relevant information about the disease process, its bases and consequences, including bad news, in an appropriate way.
- 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.
- 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.
- 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.

## Learning Outcomes

1. Describe the effects on all organs and systems of diseases of the blood, the cardiovascular system, the digestive system, the respiratory system, the endocrine system, the nervous system, the genitourinary system, infectious pathologies and diseases of the elderly.
2. Describe the main pathological situations of the musculoskeletal system, the blood, the cardiovascular system, the digestive system, the respiratory system, the endocrine system, the nervous system, the genitourinary system, infectious pathologies and diseases of the elderly.
3. Design the treatment for the main infectious diseases, diseases of the blood, of the elderly, and of the hematopoietic system, the cardiovascular system, the digestive system, the respiratory system, the endocrine system, the nervous system, the renal and genitourinary system, the retroperitoneal system and the musculoskeletal system.
4. Explain the mechanisms by which illness affects the structure and function of the human body.
5. Give patients the maximum possible information about their health, diagnostic steps, complementary examinations and treatments in an appropriate way.
6. Identify tumour diseases, and the diagnosis and management of these.
7. Indicate the complementary examinations for diagnosing the main infectious diseases, diseases of the blood, of the elderly, and of the hematopoietic system, the cardiovascular system, the digestive system, the respiratory system, the endocrine system, the nervous system, the renal and genitourinary system, the retroperitoneal system and the musculoskeletal system.

8. Perform a suitable physical examination for the main infectious diseases, diseases of the blood, of the elderly, and of the hematopoietic system, the cardiovascular system, the digestive system, the respiratory system, the endocrine system, the nervous system, the renal and genitourinary system, the retroperitoneal system and the musculoskeletal system.
9. State the most probable diagnosis for the main infectious diseases, diseases of the blood, of the elderly, and of the hematopoietic system, the cardiovascular system, the digestive system, the respiratory system, the endocrine system, the nervous system, the renal and genitourinary system, the retroperitoneal system and the musculoskeletal system.
10. Write a report giving guidance on diagnosing the main infectious diseases, diseases of the blood, of the elderly, and of the hematopoietic system, the cardiovascular system, the digestive system, the respiratory system, the endocrine system, the nervous system, the renal and genitourinary system, the retroperitoneal system and the musculoskeletal system.

## Content

Is highly recommendable to have basic knowledge of pathophysiology of cardiovascular system, respiratory system and blood and lymphatic system.

Additional knowledge of anatomy, genetics, molecular biology and pharmacology is also recommendable.

Knowledge of psychological bases of health status and disease, and adequate knowledge of communication and ethics is also necessary.

The student will preserve the confidentiality and the professional secret and will maintain an ethical attitude in all the activities of knowledge

### Hematology:

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## A) HEMATOLOGY

Theory (20 hours)

1. Main hematologic syndromes. Hematologic tests and procedures

2. Anemias. Classification. Iron deficiency anemia. Anemia of chronic diseases. Megaloblastic and other macrocytic anemias.

3. Congenital and acquired hemolytic anemias

5. Myelodysplastic syndromes

6. Acute leukemias

7. Chronic myeloproliferative neoplasias

8. Benign and malignant diseases of lymph nodes. Diagnosis and staging of lymphomas.

9. Malignant lymphomas

10. Chronic lymphoproliferative diseases.

11. Monoclonal gammopathies

12. Pathology of the spleen.

13. Pathology of mononuclear phagocytic system

14. Diseases of the hemostatic system. Thrombocytopenia and thrombocytopathy.

15. Congenital and acquired coagulopathies.

16. Hypercoagulability. Anticoagulant and thrombolytic therapy.

17. Hemotherapy

18. Hematopoietic stem cell transplantation and cellular therapy

Seminars on clinical cases (7 hours)

1. Case 1: anemia

2. Case 2: pancytopenia

3. Case 3: adenopathy

4. Case 4: hemorrhage

5. Case 5: thrombosis

6. Case 6: hematologic abnormalities of extrahematologic disease

7. Case 7: splenomegaly

B) CARDIOVASCULAR

Theory (28 hours)

1. Ischemic cardiopathy

2. Ischemic cardiopathy II (diagnosis)

3. Ischemic cardiopathy III (stable and unstable angor)

4. Ischemic cardiopathy IV (myocardial infarction)

5. Surgery of ischemic cardiopathy

6. Pericardic diseases
7. Myocardial diseases (myocarditis, dilated cardiomyopathy)
8. Myocardial diseases II (hypertrophic cardiomyopathy)
9. Cardiac failure I (concept, clinical picture and diagnosis)
10. Cardiac failure II (treatment)
11. Arrhythmias I (bradiarrhythmias)
12. Arrhythmias II (supraventricular tachyarrhythmias)
13. Arrhythmias III (ventricular tachyarrhythmias)
14. Arrhythmias IV (treatment)
15. Syncope and sudden death
16. Valvulopathies I (mitral)
17. Valvulopathies II (aortic)
18. Infectious endocarditis
19. Valvular surgery. Hearth transplant
20. Arterial hypertension
21. Pulmonary arterial hypertension and pulmonary thromboembolism
22. Diseases of thoracic aorta
23. Congenital cardiopathies in adults
24. Acute ischemia and vascular trauma
25. Chronic ischemia. Diabetic foot.
26. Aneurisms
27. Tumors and angiodysplasia. Arteriovenous fistulas.
28. Arteritis and functional vasculopathies

Specialized seminars (6 hours)

1. Normal electrocardiogram
2. Arrhythmias
3. Hearth failure
4. Ischemic cardiopathy. Myocardial infarction
5. Aneurisms
6. Ischemia of extremities

C) PNEUMOLOGY AND THORACIC SURGERY

Theory (23 hours)

1. Study of patients with respiratory disease
2. Respiratory failure
3. Disorders of ventilation. Hypoventilation and hyperventilation
4. Respiratory disorders during the sleep
5. Chronic obstructive pulmonary disease
6. Asthma
7. Defensive mechanisms of lung. Bronchiectasis. Cystic fibrosis.
8. Respiratory infections
9. Nosocomial pneumonia
10. Lung tuberculosis
11. Lung infections in immunosuppressed patients
12. Occupational and ambient diseases
13. Pulmonary eosinophilias. Extrinsic allergic alveolitis
14. Interstitial and infiltrative lung diseases
15. Sarcoidosis
16. Lung involvement in systemic diseases and pulmonary vasculitis
17. Lung cancer I; epidemiology, etiology, classification, histology, clinical picture, radiology, diagnosis, paraneoplastic syndromes, medical therapy.
18. Lung cancer II; surgical staging, indications of surgery, surgical techniques, combined therapy, solitary pulmonary nodule.
19. Lung cancer III; lung metastasis, benign lung tumors. Surgical aspects of the treatment of tumors.
20. Pathology of the mediastinum. Diagnosis and therapy of mediastinal tumors. Pleuropericardic and bronchogenic cysts. Neurogenic tumors. Acute and chronic mediastinitis
21. Benign pleural diseases: Etiology. Classification, diagnosis. Tuberculous pleuritis
22. Thoracic traumatism; management
23. Lung transplant

Specialized seminars (3 hours) and seminaries of clinical cases (4 hours)

1. Study of lung function in clinical setting
2. Pneumothorax, hemothorax, chilothonax. Malignant pleural effusion. Pleurodesis, pleural neoplasias. Mesothelomas, fibrous pleural tumors.
3. Oxigenotherapy. Invasive and non-invasive ventilation.

## Methodology

The setting, content methodology and general rules if MIC II according to the general study plan are herein described. The final organization of MIC II regarding the number and size of groups, calendar distribution, date of exams, specific criteria for evaluation and review of exams will be specifically indicated at each Docent Unit in their respective web pages, as well as by the responsible professors of MICII at each Docent Unit

As a general rule for teaching methodology the theoretical classes and seminars should have a practical orientation avoiding when possible the magisterial class. They should be based on practical clinical cases and should be oriented to the training of general physicians, avoiding the concepts belonging to super specialization.

The professors responsible of MIC II for this course are:

Responsible Departments: Medicine and Surgery

Responsible at the Faculty: Josep-Maria Ribera Santasusana, Jaume Fernández-Llamazares

Responsible at the Teaching Hospital Units (UDH)

Unitat Docent Sant Pau

|                           | Responsible UDH                        | Responsible Surgery                         | Responsible Medicine                   |
|---------------------------|--|---|--|
| MIC II                    | J. Sierra Gil<br>jsierra@santpau.cat   | Eduardo Targarona<br>etargarona@santpau.cat | J. Guerra Ramos<br>jguerra@santpau.cat |
| • Cardiovascular diseases | J. Guerra Ramos<br>jguerra@santpau.cat | Josep Maria Padró<br>jpadro@santpau.cat     | J. Guerra Ramos<br>jguerra@santpau.cat |
| • Respiratory diseases    | V. Plaza Moral<br>vplaza@santpau.cat   | Josep Maria Padró<br>jpadro@santpau.cat     | V. Plaza Moral<br>vplaza@santpau.cat   |
| • Hematologic diseases    | J. Sierra Gil<br>jsierra@santpau.cat   | Eduardo Targarona<br>etargarona@santpau.cat | J. Sierra Gil<br>jsierra@santpau.cat   |

Unitat Docent Vall d'Hebron

|        | Responsible UDH   | Responsible surgery                               | Responsible medicine   |
|--------|---|---|--|
| MIC II | Joan Genescà<br>jgenesca@vhebron.net<br>Sergi Bellmunt Montoya<br>(sbellmunt@vhebron.net) |   |  |
|        | Joan Genescà<br>jgenesca@vhebron.net  | Sergi Bellmunt Montoya<br>(sbellmunt@vhebron.net) | Joan Genescà<br><a href="mailto:jgenesca@vhebron.net">jgenesca@vhebron.net</a> |

|                           |   |  |   |
|---------------------------|---|--|---|
| • Cardiovascular diseases | Sergi Bellmunt Montoya<br>(sbellmunt@vhebron.net)<br>Rafael Rodriguez Lecoq<br>(rrodriguez@vhebron.net) | Rafael Rodriguez Lecoq<br>(rrodriguez@vhebron.net) | Sergi Bellmunt Montoya<br>(sbellmunt@vhebron.net) |
| Respiratory diseases      | Joan Genescà<br>jgenesca@vhebron.net<br>Laura Romero Vielva<br>lromero@vhebron.net                      | Laura Romero Vielva<br>lromero@vhebron.net         | Joan Genescà<br>jgenesca@vhebron.net              |
| • Hematologic diseases    | Nivardo Rodriguez Conde<br>jgenesca@vhebron.net<br>Joan Genescà<br>nirodriguezvhebron.net               | Nivardo Rodriguez Conde<br>nirodriguezvhebron.net  | Joan Genescà<br>jgenesca@vhebron.net              |

### Unitat Docent Germans Trias i Pujol

|                           | Responsible UDH  | Responsible Surgery   | Responsible Medicine                                      |
|---------------------------|--|---|---|
| MIC II                    | Josep-Maria Ribera Santasusana<br>jribera@iconcologia.net<br>Jaume Fdez.-Llamazares Rodríguez<br>jflamazares.germanstrias@gencat.cat | Jaume Fdez.-Llamazares Rodríguez<br>jflamazares.germanstrias@gencat.cat | Josep-Maria Ribera Santasusana<br>jribera@iconcologia.net |
| • Cardiovascular diseases | Antoni Bayés Genís<br>abayesgenis@gmail.com<br>Secundino Llagostera Pujol<br>sllagostera.germanstrias@gencat.cat                     | Secundino Llagostera Pujol<br>sllagostera.germanstrias@gencat.cat       | Antoni Bayés Genís<br>abayesgenis@gmail.com               |
| • Respiratory diseases    | Jorge Abad Capa<br>jabadc.germanstrias@gencat.cat<br>Pedro Enrique López de Castro<br>plopezdecastro.germanstrias@gencat.cat         | Pedro Enrique López de Castro<br>plopezdecastro.germanstrias@gencat.cat | Jorge Abad Capa<br>jabadc.germanstrias@gencat.cat         |
| • Hematologic diseases    | Josep Ma. Ribera Santasusana<br>jribera@iconcologia.net<br>Jaume Fdez.-Llamazares Rodríguez<br>jflamazares.germanstrias@gencat.cat   | Jaume Fdez.-Llamazares Rodríguez<br>jflamazares.germanstrias@gencat.cat | Josep M. Ribera Santasusana<br>jribera@iconcologia.net    |

### Unitat Docent Parc Taulí

|       | Responsible UDH | Responsible Surgery | Responsible Medicine |
|-------|-----------------|---------------------|----------------------|
| MICII |                 |                     |                      |



|                           |   |   |  |
|---------------------------|---|---|--|
|                           | Cristian Domingo Ribas<br>Cdomingo@tauli.cat  | Salvador Navarro Soto<br>snavarro@tauli.cat | Cristian Domingo Ribas<br>Cdomingo@tauli.cat |
| • Cardiovascular diseases | Antoni Martinez Rubio<br>AMartinezR@tauli.cat | Salvador Navarro Soto<br>snavarro@tauli.cat | Cristian Domingo Ribas<br>Cdomingo@tauli.cat |
| • Respiratory diseases    |   |   |  |
| • Hematologic diseases    | Luz Muñoz Marin<br>Lmunoz@tauli.cat           | Salvador Navarro Soto<br>snavarro@tauli.cat | Cristian Domingo Ribas<br>Cdomingo@tauli.cat |

## Activities

| Title   | Hours | ECTS | Learning Outcomes             |
|---|-------|------|-------------------------------|
| Type: Directed                                    |       |      |                               |
| CARE PRACTICUM WITHOUT GUIDELINES                 | 62    | 2.48 | 1, 2, 3, 8, 4, 9, 6, 7, 5, 10 |
| CLINICAL CASE SEMINARS (SCC)                      | 9     | 0.36 | 1, 2, 3, 8, 4, 9, 6, 7, 5, 10 |
| Specialized seminars (SEM)                        | 9     | 0.36 | 1, 2, 3, 8, 4, 9, 6, 7, 5, 10 |
| THEORY (TE)                                       | 73    | 2.92 | 1, 2, 3, 8, 4, 9, 6, 7, 5, 10 |
| Type: Autonomous                                  |       |      |                               |
| SELF-STUDY /READING ARTICLES /REPORTS OF INTEREST | 167.5 | 6.7  | 1, 2, 3, 8, 4, 9, 6, 7, 5, 10 |

## Assessment

The evaluation procedure of each matter of MIC II will consist of a written theoretical exam (40% of final score), evaluation through case studies and problem solving (40% of final score), analysis of clinical, cyto or histologic, radiologic EKG, or other image pictures (10% of final scores ) and evaluation of the attendance to the hospital practice (10%). The attendance and active participation in class and seminars will also be taken into account.

Theoretical exam (40%)

Restricted question or multiple choice questions can be used according to the criteria of each Hospital Teaching Unit

Case studies and problem solving (40%)

At least two clinical cases.

Pictures (10%)

Will be presented during the exam. A specific answer will be required

Hospital practice (10%)

The attendance is mandatory. A written signature by the professor will be required

If the student has not approved the exam of any of the matters of MIC II (minimal score 5) a n additional exam with the same structure will be offered

The final score of MIC II will be the mean of scores of the three matters (cardiology, neumology and hematology)

## Assessment Activities

| Title  | Weighting | Hours | ECTS | Learning Outcomes             |
|--|-----------|-------|------|-------------------------------|
| Objective tests  | 60%       | 10    | 0.4  | 1, 2, 3, 8, 4, 9, 6, 7, 5, 10 |
| Practical evaluations: open and descriptive registries and / or closed registers | 40%       | 7     | 0.28 | 1, 2, 3, 8, 4, 9, 6, 7, 5, 10 |

## Bibliography

The bibliography of ewach mattter of MIC II will appear in the specific programs located at the web page of each Teaching Unit and /or at the virtual campus of MIC II