Universitat Autònoma de Barcelona

2022/2023

Medicine and Surgery IV

Code: 103608
ECTS Credits: 14

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: Yes
Some groups entirely in Spanish: No

Teachers

Juan Ignacio Esteban Mur
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Juan Francisco Julián Ibáñez
Maria Isabel Illa Sendra
María Luisa Pedro-Botet Montoya
María Natividad de Benito Hernández
Ramon Vilallonga Puy
Maria Mercedes Rigla Cros

Prerequisites

It is recommended to have reached the competences of the following subjects: Biochemistry and Molecular Biology, Cellular Biology, Human Anatomy (I and II), Histology, Human Genetics, Psychological Bases, General Pathology, Fundamentals of Surgery, Microbiology, Radiology and Physical Medicine, Pathological Anatomy, Pharmacology, Immunology, Epidemiology, Obstetrics and Gynecology. It would be advisable to review, in order to have sufficient knowledge of the basic sciences, given that these were take three or four years ago.

It is convenient be familiar with the physiopathology, the semiology, the general propaedeutic, with the purpose of facing the study of these clinical subjects and the indication and interpretation of the tests for complementary diagnostics. The knowledge of pharmacology is necessary in order to be able to make the prescriptions and opportune indications in the different pathologies and to evaluate the iatrogenic or toxic possibilities.

The student will preserve confidentiality and professional secrecy of the data that may be accessible during apprenticeships in clinical care services. Also to maintain an attitude of professional ethics in all their actions.

Objectives and Contextualisation

Objectives and contextualization

Neurology:

The subject Neurology-Neurosurgery within the subject MAS IV is scheduled in the fifth year of the Degree in Medicine. At the end of the training period, the knowledge acquired by the student allows him to face the patient with diseases of the nervous system, to make a syndromic diagnosis, in agreement with the observed symptomatology, to localize a lesion topography, which will allow according to the clinical status and the complementary tests, establish the aetiological cause, allowing to establish a prognosis and treatment.

This teaching guide proposes teaching and learning mechanisms aimed at achieving the following a priori pre-established and defined objectives, which can and must be modify over time in order to adapt them to new needs.

The student must have acquired:

The knowledge, attitudes and aptitudes for the care of the patient with neurological-neuro-surgical pathology.

Know how to obtain, classify, use and analyse the information provided by the patient and his/her environment, as well as using and interpreting complementary evidence.

Establish an order of problems and resources, in order to plan and carry out a list of priorities and objectives.

To know and treat the most common neurological diseases, valuing those of vital risk and urgent processes.

Apply preventive medicine methods to decrease the frequency ofneurological disease.

Manage the specific bibliography using all available means of information, emphasizing the concept of continuing education.

Endocrinology:

Acquire knowledge (ethology, clinical, diagnostic, treatment and rehabilitation) of diseases the endocrine system, metabolism, diabetes and nutrition, and to develop attitudesand skills for the care of these patients.

Obtain, classify and analyse the information provided by the patient and his environment, as well as use and interpret complementary evidence.

Manage the specific bibliography using all available means of information, emphasizing the importance of continuing education.

Establish an order of problems and resources, in order to plan and carry out a list of problems, priorities and objectives.

To know and treat the most common endocrine, nutritional and metabolic diseases, valuing those of vital risk and urgent processes

To apply preventive medicine methods in order to reduce the frequency of these diseases.

Infectious diseases:

The teaching of infectious pathology in undergraduate medical studies can be defined as the activities designed to provide the student with a level of competence in this area, suitable for a particular field of study as well as a solid basis for being able to acquire one's own competencies in the future of this specialty.

The infectious pathology has a series ofdifferential characteristics

1. Its contents are transversal, similar to oncology.

2. It is a medical discipline.

3. It is a very extensive discipline.

Not all the potential contents of infectious pathology have to be part of a subject. Sometimes they have to be share with other specialities. The distribution of contents will depend on the different organization of the hospital services, university departments and of the lines of research.

Good coordination with the Microbiology course is important for an adequate vertical integration between the two subjects.

A very important question is how to approach the teaching plan. In many programs, an etiological criterion is follow. This conception contrasts with the clinical reality, in which the diseases are show in form of syndromes. The syndromic approach will be fundamental in orienting diagnosis and behaviour in the face of most clinical situations, however, the etiological approach, may be valid in some cases, for particularly relevant microorganisms or groups of microorganisms. Likewise and although during the degree the priority has to be the infections of the community with the highest prevalence, it is also necessary to incorporate into the teaching plan notions of nosocomial infection, international health, and the practical use of antimicrobial agents.

Therefore, the objectives of training are that the student will have to acquire the theoretical knowledge and the practical antimicrobial skills needed to identify the main problems caused by infectious diseases. It will also be required to guide the diagnosis and treatment of the main community infectious diseases and hospital infections. You will also need to acquire the right attitudes in your relation with the patients and thus with the rest of the health providers, especially the nurses.

Competences

- Demonstrate basic research skills.
- Demonstrate understanding of the manifestations of the illness in the structure and function of the human body.
- Demonstrate, in professional activity, a perspective that is critical, creative and research-oriented.
- 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.
- 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.
- Recognise and take action in life-threatening situations and others that require an immediate response.
- Recognize one's role in multi-professional teams, assuming leadership where appropriate, both for healthcare provision and for promoting health.

Learning Outcomes

1. Anticipate and compare information for good decision-making.
2. Assess modifications to clinical parameters in the different age groups.

3. Demonstrate basic research skills.
4. Demonstrate, in professional activity, a perspective that is critical, creative and research-oriented.
5. 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.
6. Describe the main pathological situations of nutrition.
7. 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.
8. 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.
9. Detail the steps and procedures for giving bad news.
10. Explain multidisciplinary intervention during patient care.
11. Explain the mechanisms by which illness affects the structure and function of the human body.
12. Formulate hypotheses and compile and critically assess information for problem-solving, using the scientific method.
13. Give patients the maximum possible information about their health, diagnostic steps, complementary examinations and treatments in an appropriate way.
14. Identify the fundamental principles of palliative medicine.
15. Identify the pathologies of the immune system and the diagnosis and management of these.
16. Identify tumour diseases, and the diagnosis and management of these.
17. 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.
18. Inform with caution and clarity, including measures to prevent the spreading of disease.
19. Know the main agents of infection and their mechanisms of action.
20. 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.
21. Perform basic and advanced life support manoeuvres.
22. 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.
23. 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

Neurology - Neurosurgery

Nervous system; Neurology, Neurosurgery. Primary and secondary headaches and craniofacial neuralgias. Dementia. Epilepsy, epileptic syndromes and epileptic status. SN infections (meningitis, encephalitis, AIDS and prionopathies). Strokes (AIT, cerebral infarction, intracerebral haemorrhage, subarachnoid haemorrhage and venous thrombosis and/or no cerebral thrombosis). Movement disorders (Parkinson's disease, syndromes parkinsonians and dyskinesia syndromes). Vestibular syndrome. Cerebellar syndrome and hereditary ataxias. Pathology of the spinal cord. Myelin diseases. Motor neuron diseases. Neuropathies peripheral. Muscular diseases (Muscular dystrophies, congenital myopathies, diseases myotonic-channelopathies, metabolic, inflammatory, endocrine and toxic myopathies). Diseases of the neuromuscular junction (myasthenia gravis, presynaptic miasteniform syndromes). Intracranial hypertension syndrome. Intracranial tumours. Neurosurgical cerebral vascular pathology. Cranioencephalictrauma (*CET). Neurosurgical cerebral infectious pathology. Rachimedullary pathology. Congenital malformations of the spinal cranium and hydrocephalus. Neurosurgical

treatment of chronic pain and functional neurosurgery.

Theory Program

- Neuromuscular Pathology

Introduction, scan, EMG indications

Motor neuron diseases

Diseases of the nerves

<spanstyle="font-family: Calibri; font-size: medium;">Mononeuropathies - plexopathies - radiculopathies

Polyneuropathy: Acquired - hereditary

Immunomediated

Diseases of the Muscular Union

Acquired hereditary myopathies

Immunomediated

- Dementia

Primary: Alzheimer's, Pico, Lewy, corticobasal, frontotemporal.

Secondary: HCV, hydrocephalus, other

Concept, epidemiology, social impacts. Physiopathology, molecular bases, genetics, ethology.

Clinical picture, complementary tests, pathological anatomy.

Diagnosis - Treatment. Prophylaxis

- Headaches

Concept and definition of the different primary headaches: Migraine, tension headache, headache trigeminoanatomics.

Epidemiology, physiopathology, classification, diagnostic criteria.

Exploration, symptoms, complementary tests.

Secondary headaches. Intracranial hypertension syndrome, neuralgias.

Therapeutic management of headaches.

Acute, preventive, chronic treatment. Pharmacological groups.

- Myelopathies, Ataxias, Diseases of the spinal cord

The great medullary syndromes

Mean Diagnostic Causes

Ataxias

Genetic studies

Medical treatment - rehabilitation

- Movement disorders

Parkinson's disease

Parkinsonian Syndromes

Tremor - Korea - Balkanism - Dystonia - Tics - Dyskinesia's -Atetosis

- Infectious pathology

Meningitis - CSF features

Acute, Subacute, Chronic, Viral, Bacterial, Chemical, Parasitic, Fungial

Encephalitis

Polioencephalitis -Leukoencephalitis - Panencephalitis

Slow virus infections

- Vascular Pathology

Ischemia: Transient ischemic attack (TIA), cerebral infarction

Lacunar infarction - Pseudobulbar syndrome

Hypertensive encephalopathy

Venous Pathology

Subarachnoid haemorrhages - parenchymal

Vascular pathology of the spinal cord

- Epilepsy

Introduction Definitions.

Epidemiology

Ethology, physiopathogenesis, Etiology

Pathological anatomy

Classification: Crisis. Syndromic, Etiological, differential

Syncope. Pseudo crisis

Complementary tests EEG, CT, MRI

Treatment: Medical. Surgical. Drugs

- Metabolic and Toxic Pathology

Encephalopathies: Metabolic - Deficiency - Toxic - Tatrhogenic

Metabolism disorder; hepatic uremic glucose - water - electrolytes

Vitamin deficiency: B12 - folic acid - pellagra - B1 - B6 - Beri-Beri. Wernicke Korsakof

Toxic: Organic. Inorganic

Alcoholism

Drugs, Substances, Abuse

Neurotoxins: Animals - Insects - Marine Plants - Physical Agents

- Myelin Diseases

Concept, definitions

Multiple Sclerosis

Clinical: symptoms, signs, evolution, prognosis

Complementary tests: LP - MRI - PEV

Clinical diagnostic criteria. Variants

Background treatment of the outbreak

Symptomatic treatment

Concepts of encephalomyelitis, leukodystrophies, and other demyelinizations

- Introduction to neurosurgery. Intracranial hypertension syndrome: aetiology, pathophysiology and treatment.

- Central nervous system tumours: Epidemiology and classification. The WHO classification. Neuroectodermal tumours of glial lineage (gliomas). Comprehensive approach to CNS malignant tumors.

- Meningioma's and schwanomes.

- Haemorrhagic cerebral vascular accidents. Epidemiology. Spontaneous SAH and spontaneous intraparenchymal hematomas.

- Head trauma: Epidemiology, biomechanics, physiopathology and type of lesions, evaluation clinical, diagnostic and therapeutic protocol. Scales of evaluation of severity and neurological sequelae on the patient with a CET.

- Clinical evaluation, diagnostic protocol and treatment guidelines.

- Hydrocephalus and alterations in the dynamics of the cerebrospinal fluid. Etiology, clinical manifestations, diagnosis and treatment. Normal pressure hydrocephalus. Benign intracranial hypertension.

- Functional and stereotactic neurosurgery. Application of stimulation and injury techniques in the treatment of pain refractory to medical treatment, epilepsy, movement disorders and psychosurgery. Concept of radiosurgeryand its indications.

Of all the diseases of this program, the following must be know:

Concept - Definition - Epidemiology - Classification - Physiopathology - Pathological Anatomy - Symptoms - Topographic and etiological diagnosis - Differential diagnosis - Complementary tests - Evolutionary course - Prognosis - Medical-surgical treatment - Drugs - Complications - Consequences

Clinical practice program:

Welfare clinical practice

Clinical Case Seminars

Assistance in patients admitted to hospital, art patient clinics and operating theatres

Endocrinology: Medical and Surgical

Endocrine System: Fundamentals of Medical Endocrinology and Endocrine Surgery. Diseases of the anterior pituitary and hypothalamus. Diseases of the posterior pituitary and pineal. Diseases of the thyroid gland and parathyroid. Diseases of the adrenal glands (cortex and medulla). Endocrinological diseases of reproductive function. Endocrinological Oncology. Autoimmune syndromes.

Metabolism: Diabetes Mellitus and hypoglycemia. Hyperlipidemias and other alterations of the metabolism of the lipoproteins. Metabolic syndrome and cardiovascular risk. Alterations in bone and mineral metabolism.

Nutrition: Nutritional risk assessment. Eating disorders. Obesity, anorexia and malnutrition. Diet therapy of the most frequent diseases. Artificial nutrition. Food legislation. Food hygiene. Theory

Diseases of the anterior pituitary gland and hypothalamus

Pituitary tumors

Posterior pituitary and pineal diseases

Diseases of the thyroid gland (I) (Goiter, thyroiditis, hypothyroidism)

Diseases of the thyroid gland (II) (Hyperthyroidism. Thyrotoxic crisis)

Diseases of the thyroid gland (III) (Thyroid nodules. Thyroid carcinoma)

Diseases of the parathyroid glands (hyperparathyroidism, hypoparathyroidism)

Diseases of bone and mineral metabolism (osteoporosis; osteomalacia and rickets; Paget's disease)

Diseases of the adrenal gland (I) (adrenal insufficiency, hypoaldosteronism) congenital adrenal hyperplasia, autoimmune pluriglandular disease)

Diseases of the adrenal (II) gland (Cushing syndrome, hyperaldosteronism)

Diseases of the adrenal (III) gland (incidentaloma, pheochromocytoma, paraganglioma)

Diabetes mellitus (I) (Classification; DM-1, prevention, insulin therapy)

Diabetes mellitus (II) (Insulin secretion and resistance; glycemic control, diet treatment, exercise and healthy habits; oral agents and insulin therapy)

Diabetes mellitus (III). Clinic, diagnosis and treatment of diabetic microangiopathy (retinopathy, nephropathy) and diabetic neuropathy. Diabetic dermopathy. Hypertension and diabetes. Diabetic heart disease. Coronary

heart disease and diabetes. Cerebrovascular disease and diabetes. Peripheral vascular disease. Diabetic foot.

Diabetes mellitus (IV). (Acute complications of diabetes mellitus. Hyperosmolar non-ketotic crisis.Ketoacidosis. Hypoglycemia).

Obesity and metabolic syndrome: cardiovascular risk.

Morbid obesity and associated morbidity. Bariatric surgery

Dyslipidemias (Classification of dyslipidemias. Hypertriglyceridemia. Hypercholesterolemia. Mixed hyperlipidemias. Diet, exercise, drugs)

Reproductive Endocrinology (Alterations of puberty. Male and female hypogonadism. Hirsutism, hyperandrogenism, virilization. Andropause and menopause).

Neuroendocrine tumours of the gastrointestinal and pancreatic tract. Multiple Endocrine Neoplasia (Genetic diagnosis; clinical and treatment).

Healthy eating (dietary recommendations; Mediterranean diet; nutrition in childhood, in adolescence, pregnancy, adulthood and advanced age). Transgenic foods

Nutrition and Consumptive Diseases (Neoplasms, HIV)

Dietary treatment of obesity, diabetes, cardiovascular disease and kidney disease

Nutrition and gastrointestinal diseases

Nutrition and Community Health (Food Poisoning and Allergies; Drug and Drug Interactions) nutrients; food hygiene; additives and preservatives; food legislation)

Clinical Practice Program

Nutritional Evaluation and Dietary Promotion

Enteral and parenteral nutrition

Thyroid and Parathyroid Surgery

Adrenal Surgery

Presentation and discussion of cases of pituitary disease

Presentation and discussion of cases of thyroid and parathyroid diseases and mineral metabolism.

Presentation and discussion of cases of adrenal diseases

Presentation and discussion of cases of endocrine reproductive diseases

Presentation and discussion of cases of diabetes mellitus and its complications

Presentation and discussion of cases of multiple endocrine neoplasia and autoimmune pluriglandular disease.

Clinical Welfare Practices

Assistance in patients admitted to hospital, art patient clinics and operating theatres

Performance of anamnesis, physical examination, indication and evaluation of analytical tests, studies of

imaging (conventional radiology, CT, MRI, scintigraphs, total body image with I-131, eco-doppler, angiography, ECG, bone densitometry, FNAB (thyroid cytology)

Endocrine-metabolic emergency treatment; continuous interstitial glucose monitoring, continuous insulin infusion

Nutritional evaluation of patients with malnutrition, obesity, hyperlipidemia, diabetes, metabolic syndrome.

Elaboration of diets to hospitalized and ambulatory patients with these diseases. Visit the dietetic kitchen of the hospital.

To know day by day the functions of the hospital, direct contact with the patient, the teamwork, the techniques and indications for surgery of hyperthyroidism, thyroid nodules and adenomas/hyperplasias of parathyroid, adrenal surgery (adenomas and carcinomas).

Infectious diseases: Medical and surgical

THEORY

Febrile Syndrome

Clinical, microbiological and therapeutic approach to a febrile syndrome

Upper Respiratory Infections Treatment

Common cold

Pharyngitis, laryngitis, otitis, sinusitis, mastoiditis and acute laryngotracheobronchitis.

Influenza

Lower Respiratory Infections Treatment

Pneumonia

Agents responsible for community pneumonia.

Cardiovascular Infections

Infectious Endocarditis

Central Nervous System Infections

Acute and subacute meningitis

Bone, Joint, and Soft Tissue Infections

Osteoarticular infections

Erysipelas, cellulitis. Pyomyositis (tropical). Gas gangrene (Clostridium myonecrosis). Other crepitating miositis. Staphylococcal toxic shock syndrome. Streptococcal toxic shock syndrome (necrotizing streptococcal miositis)

Urinary Tract Infections

Upper and lower urinary tract infections

Gastrointestinal Infections

Diarrhea

Specific enteropathogens: gastrointestinal and systemic infections. Septic Shock

Brucellosis. Actinomycosis. Nocardiosis

Tetanus. Botulism. Mixed Infections for Anerobic Bacteria.

Leishmaniasis. Toxoplasmosis. Leptospirosis. Rickettsia Diseases

Tuberculosis

Invasive Mycosis

Herpes Group Virus Infections. Mononucleosis syndrome. HIV Infections

Infections in Non-HIV Immunosuppressed patients. Nosocomial Infections

Imported Traveler's Illnesses or Illnesses Related to Emigration

SEMINARS (SEM)

Respiratory tract infections

Cardiovascular Infections

Central nervous system infections

Urinary tract infections

Gastrointestinal infections

HIV Infections

Diseases imported by the traveller or related to emigration

Nosocomial infection

Infections of the bone, joints, and soft tissues

Infections and surgery

HUMAN ASSISTANT CLINICAL CARE PRACTICE (PCAh typology)

Assistance to hospitalization patients and/or out patients during 10 hours (2 hours for 5 days).

Elaboration of clinical histories and discussion with the tutor in interactive group sessions.

Note: According to the number of students assigned to each Teaching Unit, the teaching typology may be modify by prior agreement between students and teachers.

Methodology

Methodology

This Guide describes the framework, contents, methodology and general rules of the subject, in accordance with the current curriculum. The final organization of the course with respect to the number and size of groups, calendar distribution and dates of examinations, specific criteria for evaluation and review of examinations will be carried out in each of the Teaching Hospital Units (HTU), which will explain to the students through their web pages and the first day of class of each subject, through the teachers responsible for the subject in the HTU.

For the present course, the teachers designated by the Departments as responsible for the subject at the Faculty and HTU levels are:

Department Responsible: Medicine and Surgery

Head of Faculty:

Susan Webb Youdale (swebb@santpau.cat)

Ramon Vilallonga Puy (rvilallonga@vhebron.net)

In the current exceptional circumstances, at the discretion of the teachers and also depending on the resources available and the public health situation, some of the theoretical classes, practicals and seminars organized by the Teaching Units may be taught either in person or virtually.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Clinical care practices (PCAh)	47.5	1.9	1, 19, 3, 4, 5, 7, 6, 9, 8, 18, 20, 11, 10, 22, 12, 14, 16, 15, 17, 13, 21, 23, 2
Clinical case seminars (SCC)	20	0.8	1, 19, 3, 4, 5, 7, 6, 9, 8, 18, 20, 11, 10, 22, 12, 14, 16, 15, 17, 13, 21, 23, 2
Contents given as oral lectures (Theory)	75	3	1, 19, 3, 4, 5, 7, 6, 9, 8, 18, 20, 11, 10, 22, 12, 14, 16, 15, 17, 13, 21, 23, 2
Seminars (SEM)	15	0.6	1, 19, 3, 4, 5, 7, 6, 9, 8, 18, 20, 11, 10, 22, 12, 14, 16, 15, 17, 13, 21, 23, 2
Type: Autonomous			
Self-study and reading of articles/reports of interest	175	7	1, 19, 3, 4, 5, 7, 6, 9, 8, 18, 20, 11, 10, 22, 12, 14, 16, 15, 17, 13, 21, 23, 2

Assessment

Evaluation

Base the evaluation system on a theoretical part (70% of the final mark) and a practical part (30% of the final mark).

For the theoretical part (70%)

Two eliminatory partial theoretical exams will be programme when the grade obtained is higher than five are. It is propose that the first partial be scheduled in the month of January/February, during the evaluation period of the first semester; and the second semester, in June, during the period of evaluations of the second semester.

The content of each of the partial exams will depend on the contents taught up to the period of examinations.

For the practical part (30%)

The evaluation of the practical part will be specifed in the program of each HTU according to its particularities and will be based on:

The evaluation of clinical case seminars: 20% of the final grade and evaluation of practices: 10% of the final note.

Attendance to the hospital hours is compulsory. According to the particularities of each Teaching Unit and subject, the practices/seminars may be evaluate on an ongoing basis and will be specify in the programme of each HTU.

The student, who has not passed the partial and/or has not passed the practical part, may attend the final recovery test containing a theoretical part and a practical part.

Depending on the criteria of respossible professors and the available resources in each teaching unit, part of the contents of the theory lectures or practical seminars can be delivered and evaluated in the simulation rooms with the corresponding methodology.

Final Qualification

The final grade is the weighted average of theoretical knowledge (70%) and practical assessment (30%). It will not be possible to make the average between the theoretical evaluation and the practical evaluation, if a minimum score of 4/10 is not obtain for both parts.

The final grade of MIC IV will be the average of the partial grades of neurology, endocrinology and infectious diseases. To be able average the subject, it is necessary to have passed each of the three parts separately.

Neuro 5% evaluation (6.25 = 0.25 ECTS)

Endocrine 5% evaluation (6.25 h = 0.25 ECTS)

Infectious diseases 5% evaluation (5 h = 0.2 ECTS)

Students who have not passed each subject by means of partial examinations and who on the day of the final exam have not submitted all required parts will be qualified as "NOT EVALUABLE".

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Practical evaluations: Open and descriptive records and/or closed records. Narrative records. Seminars and/or problems and/or clinical cases. Written evaluation: Objective tests	30%	5.25	0.21	1, 19, 3, 4, 5, 7, 6, 9, 8, 18, 20, 11, 10, 22, 12, 14, 16, 15, 17, 13, 21, 23, 2
Theory: Written evaluations through objective test. Selections ítems;	70%	12.25	0.49	1, 19, 3, 4,

essay tests (extensive questions, restricted questions). Oral evaluation	5, 7, 6, 9, 8, 18, 20, 11, 10, 22, 12, 14, 16, 15, 17, 13, 21, 23, 2

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Basic

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Especifical

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Victor y Adams. Principios de Neurología.

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Bradley Daroff. Neurology in Clinical Practice.

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3. Louis DN, International Agency for Research on Cancer, World Health Organization: **WHO Classification of Tumours of the Central Nervous System**. Lyon: International Agency for Research on Cancer, 2007, pp 309

4. Rengachary SS, Ellenbogen RG: **Principles of Neurosurgery.** Edinburgh; New York: Elsevier Mosby, 2005, pp 865.

Recursos de Internet

Pubmed. http://www.ncbi.nlm.nih.gov/sites/entrez?db=pubmed

Pubget: http://

Google Scholar: http://scholar.google.es/

Scielo: http://www.scielo.cl/

Software

No specific programme is used for teaching